

**Table 2.** Phoenix (ΦNE) library of *Staphylococcus aureus* strain Newman mutants with *bursa aurealis* insertions

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 09697	SAV0006	<i>gyrA</i>	7005	9674	9648	+		DNA gyrase subunit A
ΦNE 01964	SAV0007		9762	10592	10415	-		conserved hypothetical protein
ΦNE 12782			9762	10592	10579			
ΦNE 02761	SAV0008	<i>hutH</i>	10879	12414	11114	+		histidine ammonia-lyase
ΦNE 04440		<i>hutH</i>	10879	12414	11596			
ΦNE 09321	SAV0010		14730	15425	14879	+		hypothetical protein
ΦNE 06169			14730	15425	14919			
ΦNE 02476	SAV0012		16094	17083	16919	+		hypothetical protein
ΦNE 12827			16094	17083	17025			
ΦNE 13102	SAV0013		17319	18314	17463	+		conserved hypothetical protein
ΦNE 04509			17319	18314	17781			
ΦNE 11727			17319	18314	18035			
ΦNE 12713	SAV0017	<i>purA</i>	22449	23732	22464	+		adenylosuccinate synthase
ΦNE 10703		<i>purA</i>	22449	23732	22594			
ΦNE 03581		<i>purA</i>	22449	23732	22732			
ΦNE 02689		<i>purA</i>	22449	23732	22853			
ΦNE 10572		<i>purA</i>	22449	23732	22944			
ΦNE 10831		<i>purA</i>	22449	23732	23251			
ΦNE 11456		<i>purA</i>	22449	23732	23314			
ΦNE 11756		<i>purA</i>	22449	23732	23448			
ΦNE 10932		<i>purA</i>	22449	23732	23483			
ΦNE 08533		<i>purA</i>	22449	23732	23540			
ΦNE 04972		<i>purA</i>	22449	23732	23644			
ΦNE 01530		<i>purA</i>	22449	23732	23664			
ΦNE 11611	SAV0022		29980	30780	30503	+		conserved hypothetical protein
ΦNE 14567			29980	30780	30771			
ΦNE 11670	SAV0023		31007	33259	31023	+		hypothetical protein
ΦNE 04297			31007	33259	31217			
ΦNE 12828			31007	33259	31943			
ΦNE 13505			31007	33259	31956			
ΦNE 12936			31007	33259	32400			
ΦNE 12965			31007	33259	32400			
ΦNE 12983			31007	33259	32400			
ΦNE 13705			31007	33259	32464			
ΦNE 09370			31007	33259	32510			
ΦNE 02455			31007	33259	32685			
ΦNE 03276			31007	33259	32691			
ΦNE 11544			31007	33259	32765			
ΦNE 03443			31007	33259	32823			
ΦNE 03444			31007	33259	32823			
ΦNE 07519			31007	33259	32907			
ΦNE 06470	SAV0024		33697	34176	33793	+		conserved hypothetical protein
ΦNE 00158			33697	34176	33928			
ΦNE 00007	SAV0031	<i>pre</i>	38433	39695	39416	-		plasmid recombination enzyme

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 00008		<i>pre</i>	38433	39695	39416			
ΦNE 06084	SAV0071	<i>kdpD</i>	74144	76777	75938	-		hypothetical protein
ΦNE 12162			87657	89390	87668			
ΦNE 02921	SAV0082		87657	89390	87959	+		hypothetical protein
ΦNE 09041			87657	89390	87959			
ΦNE 03246			87657	89390	87961			
ΦNE 06236			87657	89390	87964			
ΦNE 13445			87657	89390	88428			
ΦNE 01632			87657	89390	88458			
ΦNE 02903			87657	89390	88505			
ΦNE 04544			87657	89390	88508			
ΦNE 09132			87657	89390	89116			
ΦNE 02710	SAV0084		90334	91089	90441	-		conserved hypothetical protein
ΦNE 02569			90334	91089	91071			
ΦNE 03605			90334	91089	91076			
ΦNE 03606			90334	91089	91076			
ΦNE 11469	SAV0085		91089	91349	91255	-		conserved hypothetical protein
ΦNE 11477			91089	91349	91255			
ΦNE 07569	SAV0086		91486	92550	92005	+		conserved hypothetical protein
ΦNE 02897	SAV0087		92581	93915	92750	+		conserved hypothetical protein
ΦNE 04982			92581	93915	92836			
ΦNE 11277			92581	93915	92951			
ΦNE 04395			92581	93915	92972			
ΦNE 13061			92581	93915	93034			
ΦNE 06501			92581	93915	93679			
ΦNE 11128	SAV0088		93934	95127	94213	+		hypothetical protein
ΦNE 01747			93934	95127	94509			
ΦNE 04903			93934	95127	94655			
ΦNE 11384			93934	95127	94730			
ΦNE 06573			93934	95127	94897			
ΦNE 06559			93934	95127	95048			
ΦNE 12760			93934	95127	95060			
ΦNE 12760			93934	95127	95060			
ΦNE 00681			93934	95127	95068			
ΦNE 06429	SAV0089		95794	96780	96641	-		conserved hypothetical protein
ΦNE 04416			95794	96780	96778			
ΦNE 12169	SAV0092		97836	98447	97923	+		hypothetical protein
ΦNE 14422			97836	98447	98060			
ΦNE 01701			97836	98447	98097			
ΦNE 11771			97836	98447	98121			
ΦNE 10640	SAV0093		98714	101866	98928	+		hypothetical protein
ΦNE 11846			98714	101866	98928			
ΦNE 14664			98714	101866	99313			
ΦNE 04522			98714	101866	99602			
ΦNE 09017			98714	101866	99684			
ΦNE 12303			98714	101866	99702			
ΦNE 09022			98714	101866	99714			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 06265			98714	101866	99858			
ΦNE 10867			98714	101866	100121			
ΦNE 10580			98714	101866	100198			
ΦNE 12233			98714	101866	100352			
ΦNE 04969			98714	101866	100947			
ΦNE 06215			98714	101866	101306			
ΦNE 14503			98714	101866	101463			
ΦNE 08742	SAV0094		101923	102405	102066	+		hypothetical protein
ΦNE 01578			101923	102405	102223			
ΦNE 00113	SAV0095	<i>plc</i>	102611	103597	103281	+		1-phosphatidylinositol phosphodiesterase precurosr
ΦNE 12336		<i>plc</i>	102611	103597	103298			
ΦNE 03522		<i>plc</i>	102611	103597	103391			
ΦNE 06798		<i>plc</i>	102611	103597	103393			
ΦNE 08856		<i>plc</i>	102611	103597	103440			
ΦNE 14570		<i>plc</i>	102611	103597	103464			
ΦNE 07542		<i>plc</i>	102611	103597	103526			
ΦNE 04331	SAV0096		103818	104588	103896	+		hypothetical protein
ΦNE 00584			103818	104588	104393			
ΦNE 03737	SAV0099		106310	107080	106915	+		hypothetical protein
ΦNE 04701	SAV0100		107147	107914	107274	+		hypothetical protein
ΦNE 04709			107147	107914	107274			
ΦNE 03975			107147	107914	107719			
ΦNE 01752	SAV0101		108011	110248	108212	+		hypothetical protein
ΦNE 10945			108011	110248	108313			
ΦNE 01586			108011	110248	108501			
ΦNE 05318			108011	110248	109852			
ΦNE 10988			108011	110248	109869			
ΦNE 04135			108011	110248	110153			
ΦNE 12459	SAV0102		110399	111577	110731	+		hypothetical protein
ΦNE 13495	SAV0103		111579	112967	111624	+		hypothetical protein
ΦNE 11065			111579	112967	111669			
ΦNE 12838			111579	112967	112212			
ΦNE 10450			111579	112967	112341			
ΦNE 04675			111579	112967	112499			
ΦNE 14391			111579	112967	112503			
ΦNE 06613			111579	112967	112821			
ΦNE 07033			111579	112967	112824			
ΦNE 08903	SAV0104		113451	115118	113486	-		conserved hypothetical protein
ΦNE 08655			113451	115118	113665			
ΦNE 03889			113451	115118	113829			
ΦNE 12346			113451	115118	113829			
ΦNE 12128			113451	115118	113923			
ΦNE 07403			113451	115118	114275			
ΦNE 06368			113451	115118	114866			
ΦNE 09435	SAV0105		115210	115380	115227	-		hypothetical protein
ΦNE 06817	SAV0106		115437	117212	115622	-		67 kDa Myosin-crossreactive streptococcal antigen homologue
ΦNE 11705			115437	117212	115700			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 01885			115437	117212	115810			
ΦNE 07690			115437	117212	115810			
ΦNE 07060			115437	117212	115815			
ΦNE 05474	SAV0107		117386	118258	117389	-		conserved hypothetical protein
ΦNE 02908			117386	118258	117463			
ΦNE 13514			117386	118258	117702			
ΦNE 12584			117386	118258	117704			
ΦNE 12353			117386	118258	117817			
ΦNE 09396			117386	118258	117819			
ΦNE 12785			117386	118258	117849			
ΦNE 05622			117386	118258	117951			
ΦNE 06307			117386	118258	118050			
ΦNE 09023			117386	118258	118171			
ΦNE 05033			117386	118258	118212			
ΦNE 04993	SAV0108		118440	119768	118692	+		hypothetical protein
ΦNE 03596			118440	119768	118698			
ΦNE 03867			118440	119768	118698			
ΦNE 06920			118440	119768	118765			
ΦNE 05484			118440	119768	119188			
ΦNE 04045			118440	119768	119536			
ΦNE 06065			118440	119768	119750			
ΦNE 02760	SAV0109		119958	120431	120067	+		hypothetical protein
ΦNE 12136			119958	120431	120140			
ΦNE 06243			119958	120431	120265			
ΦNE 13863			119958	120431	120355			
ΦNE 02284	SAV0110	<i>lctP</i>	120693	122285	121225	+		L-lactate permease homologue
ΦNE 08722		<i>lctP</i>	120693	122285	121394			
ΦNE 04338		<i>lctP</i>	120693	122285	121540			
ΦNE 08768		<i>lctP</i>	120693	122285	121913			
ΦNE 00590		<i>lctP</i>	120693	122285	121989			
ΦNE 03637	SAV0111	<i>spa</i>	122614	123966	122814	-		Immunoglobulin G binding protein A precursor
ΦNE 14676	SAV0112	<i>sarH1</i>	124387	125139	124714	-		staphylococcal accessory regulator A homologue
ΦNE 11086		<i>sarH1</i>	124387	125139	124962			
ΦNE 05486	SAV0113	<i>sirC</i>	125508	126425	125535	-		lipoprotein
ΦNE 13610		<i>sirC</i>	125508	126425	125538			
ΦNE 13621		<i>sirC</i>	125508	126425	125538			
ΦNE 11499		<i>sirC</i>	125508	126425	125776			
ΦNE 12265		<i>sirC</i>	125508	126425	125810			
ΦNE 00251		<i>sirC</i>	125508	126425	125846			
ΦNE 14599		<i>sirC</i>	125508	126425	125965			
ΦNE 05329		<i>sirC</i>	125508	126425	126164			
ΦNE 09386		<i>sirC</i>	125508	126425	126226			
ΦNE 07861		<i>sirC</i>	125508	126425	126398			
ΦNE 11583		<i>sirC</i>	125508	126425	126424			
ΦNE 12605	SAV0114	<i>sirB</i>	126503	127498	126533	-		lipoprotein
ΦNE 12605		<i>sirB</i>	126503	127498	126533			
ΦNE 15246		<i>sirB</i>	126503	127498	127024			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 04101	SAV0115	<i>sirA</i>	127514	128506	128217	-		lipoprotein
ΦNE 13438		<i>sirA</i>	127514	128506	128305			
ΦNE 11162	SAV0116		128737	129717	128912	+		hypothetical protein
ΦNE 06514			128737	129717	129038			
ΦNE 05598			128737	129717	129192			
ΦNE 11476			128737	129717	129651			
ΦNE 12059	SAV0117		129714	130724	129734	+		hypothetical protein
ΦNE 12593			129714	130724	129740			
ΦNE 09964			129714	130724	129962			
ΦNE 09972			129714	130724	129962			
ΦNE 10523			129714	130724	130074			
ΦNE 05406			129714	130724	130317			
ΦNE 11504			129714	130724	130373			
ΦNE 03646			129714	130724	130420			
ΦNE 07204	SAV0118		130745	132499	130783	+		conserved hypothetical protein
ΦNE 12707			130745	132499	130910			
ΦNE 00750			130745	132499	130913			
ΦNE 09730			130745	132499	131033			
ΦNE 07518			130745	132499	131514			
ΦNE 07479			130745	132499	131541			
ΦNE 11959	SAV0119		132492	133748	132593	+		hypothetical protein
ΦNE 04431			132492	133748	132741			
ΦNE 09553			132492	133748	133099			
ΦNE 10959			132492	133748	133193			
ΦNE 08282			132492	133748	133245			
ΦNE 04870			132492	133748	133358			
ΦNE 11587			132492	133748	133687			
ΦNE 07729	SAV0120		133738	135474	133855	+		hypothetical protein
ΦNE 10719			133738	135474	134308			
ΦNE 13771			133738	135474	134359			
ΦNE 14774			133738	135474	134368			
ΦNE 14561			133738	135474	134989			
ΦNE 04528			133738	135474	135139			
ΦNE 14678			133738	135474	135215			
ΦNE 09400			133738	135474	135408			
ΦNE 09224	SAV0121		135455	137233	135630	+		hypothetical protein
ΦNE 03981			135455	137233	135773			
ΦNE 00568			135455	137233	136229			
ΦNE 01773			135455	137233	136229			
ΦNE 14720			135455	137233	137230			
ΦNE 14720	SAV0122		137205	137984	137230	+		hypothetical protein
ΦNE 06601			137205	137984	137635			
ΦNE 13737			137205	137984	137783			
ΦNE 13752			137205	137984	137784			
ΦNE 12966	SAV0123		137984	139186	138084	+		hypothetical protein
ΦNE 00693			137984	139186	139183			
ΦNE 02682	SAV0124		139190	139954	139310	+		hypothetical protein

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 09557			139190	139954	139350			
ΦNE 10882			139190	139954	139935			
ΦNE 14430	SAV0125		140150	140776	140144	+	*	hypothetical protein
ΦNE 09159			140150	140776	140210			
ΦNE 00114			140150	140776	140213			
ΦNE 13916			140150	140776	140231			
ΦNE 05201			140150	140776	140502			
ΦNE 13518			140150	140776	140522			
ΦNE 02811	SAV0126	<i>butA</i>	140988	141764	141446	+		acetoin(diacetyl)reductase
ΦNE 13074		<i>butA</i>	140988	141764	141721			
ΦNE 08640	SAV0128		142109	143080	142441	+		hypothetical protein
ΦNE 06141			142109	143080	142604			
ΦNE 09302			142109	143080	142756			
ΦNE 00797			142109	143080	142763			
ΦNE 07499	SAV0129		143043	143735	143401	+		hypothetical protein
ΦNE 02789			143043	143735	143686			
ΦNE 07925			143043	143735	143702			
ΦNE 09466	SAV0130		143945	145111	143961	+		hypothetical protein
ΦNE 11103			143945	145111	144713			
ΦNE 13876			143945	145111	144935			
ΦNE 01699			143945	145111	144938			
ΦNE 09350	SAV0131		145092	146330	145300	+		hypothetical protein
ΦNE 12498			145092	146330	145506			
ΦNE 08064			145092	146330	145706			
ΦNE 08065			145092	146330	145708			
ΦNE 12562			145092	146330	145832			
ΦNE 00235			145092	146330	146074			
ΦNE 00302			145092	146330	146074			
ΦNE 06768			145092	146330	146120			
ΦNE 09206	SAV0132		146320	147750	146719	+		hypothetical protein
ΦNE 14283			146320	147750	146785			
ΦNE 00540			146320	147750	146886			
ΦNE 05398			146320	147750	146903			
ΦNE 02649			146320	147750	147010			
ΦNE 09251			146320	147750	147028			
ΦNE 01648			146320	147750	147316			
ΦNE 02728	SAV0133	<i>sodM</i>	148018	148617	148072	+		superoxide dismutase
ΦNE 10952	SAV0134		148984	149709	149223	+		hypothetical protein
ΦNE 01938			148984	149709	149226			
ΦNE 03734			148984	149709	149291			
ΦNE 08770			148984	149709	149344			
ΦNE 00707			148984	149709	149552			
ΦNE 00635			148984	149709	149633			
ΦNE 00256	SAV0135		149900	150640	150553	-		hypothetical protein
ΦNE 01871			149900	150640	150577			
ΦNE 04115	SAV0136	<i>pnp</i>	150891	151598	151454	+		purine nucleoside phosphorylase
ΦNE 06226	SAV0137		151605	152957	151776	+		hypothetical protein

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 04163			151605	152957	151961			
ΦNE 11633			151605	152957	151961			
ΦNE 01998			151605	152957	152170			
ΦNE 02864			151605	152957	152402			
ΦNE 02866			151605	152957	152402			
ΦNE 02867			151605	152957	152402			
ΦNE 03656			151605	152957	152402			
ΦNE 12889			151605	152957	152402			
ΦNE 15245			151605	152957	152916			
ΦNE 13850	SAV0138	<i>dra</i>	153038	153700	153705	+	*	deoxyribose-phosphate aldolase
ΦNE 04768	SAV0139	<i>drm</i>	153728	154906	153945	+		phosphopentomutase
ΦNE 13448		<i>drm</i>	153728	154906	154379			
ΦNE 03891		<i>drm</i>	153728	154906	154842			
ΦNE 04628	SAV0140		155035	155850	155067	-		hypothetical protein
ΦNE 04858			155035	155850	155067			
ΦNE 04556			155035	155850	155205			
ΦNE 09372			155035	155850	155650			
ΦNE 09378			155035	155850	155650			
ΦNE 07182			155035	155850	155838			
ΦNE 07883	SAV0141		155847	156647	155902	-		hypothetical protein
ΦNE 04840			155847	156647	156038			
ΦNE 07545			155847	156647	156263			
ΦNE 04813	SAV0142		156649	157422	156686	-		hypothetical protein
ΦNE 12568			156649	157422	156694			
ΦNE 03501			156649	157422	157003			
ΦNE 05093	SAV0143		157617	158573	158258	-		hypothetical protein
ΦNE 00754			157617	158573	158302			
ΦNE 04512			157617	158573	158476			
ΦNE 00009	SAV0144		158802	160346	158804	+		hypothetical protein
ΦNE 00019			158802	160346	158815			
ΦNE 00822			158802	160346	159340			
ΦNE 05609			158802	160346	159454			
ΦNE 06305			158802	160346	159555			
ΦNE 09385			158802	160346	159668			
ΦNE 03513			158802	160346	159829			
ΦNE 09233			158802	160346	160080			
ΦNE 13020			158802	160346	160080			
ΦNE 11527	SAV0145		160397	161932	160409	+		hypothetical protein
ΦNE 06375			160397	161932	161066			
ΦNE 12594			160397	161932	161068			
ΦNE 11012			160397	161932	161654			
ΦNE 07766			160397	161932	161812			
ΦNE 11933			160397	161932	161880			
ΦNE 09395	SAV0147		162862	164037	163828	+		hypothetical protein
ΦNE 07291			162862	164037	163849			
ΦNE 06399			162862	164037	164045		*	
ΦNE 08262	SAV0148	<i>adhE</i>	164422	167031	164641	+		alcohol-acetaldehyde dehydrogenase

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 13252		<i>adhE</i>	164422	167031	164679			
ΦNE 01814		<i>adhE</i>	164422	167031	164948			
ΦNE 00652		<i>adhE</i>	164422	167031	165301			
ΦNE 01590		<i>adhE</i>	164422	167031	165946			
ΦNE 12618		<i>adhE</i>	164422	167031	165946			
ΦNE 11427		<i>adhE</i>	164422	167031	166431			
ΦNE 08701		<i>adhE</i>	164422	167031	166793			
ΦNE 07517		<i>adhE</i>	164422	167031	166799			
ΦNE 11236		<i>adhE</i>	164422	167031	166838			
ΦNE 05613		<i>adhE</i>	164422	167031	167019			
ΦNE 10032	SAV0149	<i>capA</i>	167374	168042	167388	+		capsular polysaccharide synthesis enzyme Cap5A
ΦNE 13572		<i>capA</i>	167374	168042	167939			
ΦNE 09402	SAV0150	<i>capB</i>	168058	168744	168118	+		capsular polysaccharide synthesis enzyme Cap5B
ΦNE 05254		<i>capB</i>	168058	168744	168676			
ΦNE 05268		<i>capB</i>	168058	168744	168676			
ΦNE 05138	SAV0151	<i>capC</i>	168747	169511	168769	+		capsular polysaccharide synthesis enzyme Cap8C
ΦNE 07374		<i>capC</i>	168747	169511	169192			
ΦNE 12543		<i>capC</i>	168747	169511	169405			
ΦNE 10890	SAV0152	<i>capD</i>	169531	171354	169823	+		capsular polysaccharide synthesis enzyme Cap5D
ΦNE 14629		<i>capD</i>	169531	171354	169943			
ΦNE 14637		<i>capD</i>	169531	171354	169943			
ΦNE 10711		<i>capD</i>	169531	171354	170355			
ΦNE 02051		<i>capD</i>	169531	171354	170544			
ΦNE 11025		<i>capD</i>	169531	171354	170598			
ΦNE 11033		<i>capD</i>	169531	171354	170620			
ΦNE 14665		<i>capD</i>	169531	171354	171244			
ΦNE 12392	SAV0153	<i>capE</i>	171344	172372	171866	+		capsular polysaccharide synthesis enzyme Cap8E
ΦNE 11309		<i>capE</i>	171344	172372	172272			
ΦNE 06712	SAV0154	<i>capF</i>	172385	173494	172732	+		capsular polysaccharide synthesis enzyme Cap5F
ΦNE 05448		<i>capF</i>	172385	173494	173142			
ΦNE 06887		<i>capF</i>	172385	173494	173432			
ΦNE 05573	SAV0155	<i>capG</i>	173498	174622	173597	+		capsular polysaccharide synthesis enzyme Cap5G
ΦNE 00004		<i>capG</i>	173498	174622	173701			
ΦNE 12183		<i>capG</i>	173498	174622	174443			
ΦNE 11624	SAV0156	<i>capH</i>	174625	175251	174749	+		capsular polysaccharide synthesis enzyme O-acetyl transferase Cap5H
ΦNE 12659		<i>capH</i>	174625	175251	174957			
ΦNE 04851	SAV0157	<i>capI</i>	175256	176365	175688	+		capsular polysaccharide synthesis enzyme Cap5I
ΦNE 06161		<i>capI</i>	175256	176365	176129			
ΦNE 10865	SAV0158	<i>capJ</i>	176379	177545	176815	+		capsular polysaccharide synthesis enzyme Cap5J
ΦNE 06124		<i>capJ</i>	176379	177545	176940			
ΦNE 12264		<i>capJ</i>	176379	177545	177077			
ΦNE 03492		<i>capJ</i>	176379	177545	177159			
ΦNE 04856	SAV0159	<i>capK</i>	177538	178743	177688	+		capsular polysaccharide synthesis enzyme Cap5K
ΦNE 10993		<i>capK</i>	177538	178743	177706			
ΦNE 04144		<i>capK</i>	177538	178743	178073			
ΦNE 07711		<i>capK</i>	177538	178743	178105			
ΦNE 06095		<i>capK</i>	177538	178743	178316			



Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 13537		<i>capK</i>	177538	178743	178418			
ΦNE 01929		<i>capK</i>	177538	178743	178490			
ΦNE 12805		<i>capK</i>	177538	178743	178492			
ΦNE 12976		<i>capK</i>	177538	178743	178492			
ΦNE 08155		<i>capK</i>	177538	178743	178493			
ΦNE 06218		<i>capK</i>	177538	178743	178495			
ΦNE 13318		<i>capK</i>	177538	178743	178600			
ΦNE 06426	SAV0160	<i>capL</i>	178744	179949	179152	+		capsular polysaccharide synthesis enzyme Cap5L
ΦNE 07750		<i>capL</i>	178744	179949	179466			
ΦNE 00618		<i>capL</i>	178744	179949	179744			
ΦNE 10879	SAV0161	<i>capM</i>	179960	180517	180039	+		capsular polysaccharide synthesis enzyme Cap5M
ΦNE 01957		<i>capM</i>	179960	180517	180123			
ΦNE 01866	SAV0162	<i>capN</i>	180517	181404	180581	+		capsular polysaccharide synthesis enzyme Cap5N
ΦNE 04136		<i>capN</i>	180517	181404	180722			
ΦNE 06083	SAV0163	<i>capO</i>	181458	182720	181875	+		capsular polysaccharide synthesis enzyme Cap8O
ΦNE 05283		<i>capO</i>	181458	182720	182050			
ΦNE 12917		<i>capO</i>	181458	182720	182254			
ΦNE 11669		<i>capO</i>	181458	182720	182382			
ΦNE 04646		<i>capO</i>	181458	182720	182489			
ΦNE 08890		<i>capO</i>	181458	182720	182505			
ΦNE 04700	SAV0164	<i>capP</i>	182767	183942	182926	+		capsular polysaccharide synthesis enzyme Cap5P
ΦNE 05644		<i>capP</i>	182767	183942	183501			
ΦNE 04706		<i>capP</i>	182767	183942	183668			
ΦNE 09847		<i>capP</i>	182767	183942	183792			
ΦNE 09227	SAV0165	<i>isdI</i>	184007	184333	184034	-		conserved hypothetical protein
ΦNE 11092		<i>isdI</i>	184007	184333	184116			
ΦNE 11891		<i>isdI</i>	184007	184333	184170			
ΦNE 12932	SAV0166		184340	184723	184477	-		conserved hypothetical protein
ΦNE 04350			184340	184723	184481			
ΦNE 07301		<i>aldA</i>	185150	186637	185141		*	
ΦNE 15192	SAV0167	<i>aldA</i>	185150	186637	185864	+		aldehyde dehydrogenase homologue
ΦNE 02715		<i>aldA</i>	185150	186637	185925			
ΦNE 06813		<i>aldA</i>	185150	186637	186032			
ΦNE 03273	SAV0168		187284	188243	187488	+		hypothetical protein
ΦNE 08279			187284	188243	187999			
ΦNE 11701			187284	188243	188031			
ΦNE 13649			187284	188243	188031			
ΦNE 05237	SAV0171		188920	189432	189318	+		hypothetical protein
ΦNE 07506	SAV0172		189774	190514	189822	+		hypothetical protein
ΦNE 02635			189774	190514	189925			
ΦNE 10948			189774	190514	189955			
ΦNE 07554	SAV0173		190528	191499	190627	+		hypothetical protein
ΦNE 11245			190528	191499	190670			
ΦNE 07471			190528	191499	190976			
ΦNE 03639			190528	191499	191031			
ΦNE 07902			190528	191499	191290			
ΦNE 06072	SAV0174		191496	192257	191601	+		hypothetical protein

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 05563			191496	192257	191653			
ΦNE 00861			191496	192257	192197			
ΦNE 00698	SAV0175		192270	193301	192626	+		hypothetical protein
ΦNE 13362			192270	193301	192996			
ΦNE 05305			192270	193301	193064			
ΦNE 10577			192270	193301	193308		*	
ΦNE 02233	SAV0176		193527	193877	193609	+		conserved hypothetical protein
ΦNE 10905			193527	193877	193609			
ΦNE 07878	SAV0177	<i>fdh</i>	193952	195076	194048	+		NAD-dependent formate dehydrogenase
ΦNE 07526		<i>fdh</i>	193952	195076	194251			
ΦNE 10911	SAV0178		195462	196712	195675	+		hypothetical protein
ΦNE 02469			195462	196712	196090			
ΦNE 09014			195462	196712	196575			
ΦNE 12202	SAV0179		197159	204334	197203	+		hypothetical protein
ΦNE 13575			197159	204334	197467			
ΦNE 00016			197159	204334	197654			
ΦNE 04439			197159	204334	197900			
ΦNE 02049			197159	204334	197901			
ΦNE 06946			197159	204334	197909			
ΦNE 07190			197159	204334	197909			
ΦNE 04853			197159	204334	197981			
ΦNE 11262			197159	204334	198566			
ΦNE 06633			197159	204334	199169			
ΦNE 10667			197159	204334	199707			
ΦNE 00811			197159	204334	199809			
ΦNE 14695			197159	204334	199870			
ΦNE 03234			197159	204334	200255			
ΦNE 02766			197159	204334	200320			
ΦNE 01820			197159	204334	200478			
ΦNE 11721			197159	204334	200478			
ΦNE 04446			197159	204334	200546			
ΦNE 01854			197159	204334	200622			
ΦNE 04641			197159	204334	200697			
ΦNE 13211			197159	204334	201206			
ΦNE 01891			197159	204334	201264			
ΦNE 08612			197159	204334	201293			
ΦNE 04365			197159	204334	201295			
ΦNE 07825			197159	204334	201336			
ΦNE 08323			197159	204334	201571			
ΦNE 06437			197159	204334	201599			
ΦNE 09393			197159	204334	201686			
ΦNE 09666			197159	204334	201837			
ΦNE 07956			197159	204334	202174			
ΦNE 06385			197159	204334	202221			
ΦNE 04381			197159	204334	202435			
ΦNE 11449			197159	204334	203118			
ΦNE 08671			197159	204334	203142			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 11184			197159	204334	203142			
ΦNE 06485			197159	204334	203169			
ΦNE 08756			197159	204334	203505			
ΦNE 13062			197159	204334	203660			
ΦNE 06835			197159	204334	203665			
ΦNE 03491			197159	204334	203769			
ΦNE 09354			197159	204334	203822			
ΦNE 11799			197159	204334	203946			
ΦNE 10880			197159	204334	204189			
ΦNE 14532	SAV0180		204347	204991	204448	+		conserved hypothetical protein
ΦNE 03096			204347	204991	204753			
ΦNE 10581	SAV0182		206068	206832	206317	-		hypothetical protein
ΦNE 06304			206068	206832	206488			
ΦNE 03414			206068	206832	206538			
ΦNE 02265			206068	206832	206795			
ΦNE 12640	SAV0183	<i>argJ</i>	206848	208089	208055	-		arginine biosynthesis bifunctional protein homologue
ΦNE 03127	SAV0184	<i>argC</i>	208101	209132	208251	-		N-acetylglutamate gamma-semialdehyde dehydrogenase
ΦNE 02803		<i>argC</i>	208101	209132	208612			
ΦNE 07307		<i>argC</i>	208101	209132	208985			
ΦNE 02387	SAV0185		209171	210355	209256	-		ornithine aminotransferase
ΦNE 00824			209171	210355	210144			
ΦNE 05074			209171	210355	210235			
ΦNE 12376	SAV0186		210614	211963	210942	-		hypothetical protein
ΦNE 13213			210614	211963	211268			
ΦNE 10656			210614	211963	211715			
ΦNE 08784	SAV0187		212242	212739	212621	-		hypothetical protein
ΦNE 09016	SAV0188		212866	214506	213464	-		hypothetical protein
ΦNE 02579			212866	214506	213929			
ΦNE 07755			212866	214506	213929			
ΦNE 03140			212866	214506	213931			
ΦNE 06532			212866	214506	214099			
ΦNE 12556			212866	214506	214148			
ΦNE 06454	SAV0189	<i>glcA</i>	214778	216823	215026	-		PTS enzyme II
ΦNE 03102		<i>glcA</i>	214778	216823	215642			
ΦNE 05296		<i>glcA</i>	214778	216823	215704			
ΦNE 01753		<i>glcA</i>	214778	216823	216550			
ΦNE 04337	SAV0190		217408	218463	217432	+		conserved hypothetical protein
ΦNE 00178			217408	218463	217985			
ΦNE 12312			217408	218463	218168			
ΦNE 11922	SAV0192		219371	220825	219473	+		hypothetical protein
ΦNE 00006			219371	220825	219577			
ΦNE 01763			219371	220825	219623			
ΦNE 04956			219371	220825	219682			
ΦNE 00863			219371	220825	220038			
ΦNE 04361			219371	220825	220347			
ΦNE 04951			219371	220825	220347			
ΦNE 03927			219371	220825	220650			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 13067	SAV0193		220828	221703	220906	+		hypothetical protein
ΦNE 02135			220828	221703	220967			
ΦNE 08828			220828	221703	221067			
ΦNE 02362			220828	221703	221456			
ΦNE 02429	SAV0195	<i>hsdR</i>	222391	225180	222479	+		probable type I restriction enzyme restriction chain
ΦNE 13443		<i>hsdR</i>	222391	225180	222743			
ΦNE 12699		<i>hsdR</i>	222391	225180	222911			
ΦNE 00710		<i>hsdR</i>	222391	225180	223058			
ΦNE 09492		<i>hsdR</i>	222391	225180	223205			
ΦNE 05126		<i>hsdR</i>	222391	225180	223655			
ΦNE 09118		<i>hsdR</i>	222391	225180	223659			
ΦNE 08992		<i>hsdR</i>	222391	225180	223693			
ΦNE 15247		<i>hsdR</i>	222391	225180	224668			
ΦNE 09050		<i>hsdR</i>	222391	225180	224757			
ΦNE 07632		<i>hsdR</i>	222391	225180	224854			
ΦNE 14427		<i>hsdR</i>	222391	225180	224946			
ΦNE 08861	SAV0205	<i>oppF</i>	233309	234901	233824	-		oligopeptide transport ATP-binding protein
ΦNE 11739		<i>oppF</i>	233309	234901	234790			
ΦNE 10862	SAV0206	<i>truncated-oppB</i>	234999	236336	235224	+		truncated hypothetical protein
ΦNE 12437		<i>truncated-oppB</i>	234999	236336	235540			
ΦNE 07849		<i>truncated-oppB</i>	234999	236336	235961			
ΦNE 11430		<i>truncated-oppB</i>	234999	236336	236240			
ΦNE 14610		<i>truncated-oppB</i>	234999	236336	236250			
ΦNE 04004	SAV0207		236342	237505	236667	+		hypothetical protein
ΦNE 05315			236342	237505	236994			
ΦNE 05454			236342	237505	237185			
ΦNE 06052			236342	237505	237299			
ΦNE 11760			236342	237505	237381			
ΦNE 01926	SAV0208	<i>rlp</i>	237522	239297	237570	+		RGD-containing lipoprotein
ΦNE 07795		<i>rlp</i>	237522	239297	237571			
ΦNE 12525		<i>rlp</i>	237522	239297	238567			
ΦNE 03751	SAV0209		239335	241341	239494	+		hypothetical protein
ΦNE 03761			239335	241341	239494			
ΦNE 03750			239335	241341	239494			
ΦNE 07928			239335	241341	239578			
ΦNE 03566			239335	241341	239639			
ΦNE 15333			239335	241341	239657			
ΦNE 13268			239335	241341	239863			
ΦNE 12316			239335	241341	239967			
ΦNE 13896			239335	241341	241037			
ΦNE 05324			239335	241341	241261			
ΦNE 08994			239335	241341	241271			
ΦNE 02891			239335	241341	241278			
ΦNE 06988			239335	241341	241296			
ΦNE 00603			239335	241341	241311			
ΦNE 12945	SAV0210		241654	242427	241925	-		hypothetical protein
ΦNE 11515			241654	242427	242150			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 07427			241654	242427	242203			
ΦNE 07298			241654	242427	242206			
ΦNE 13516			241654	242427	242242			
ΦNE 12256	SAV0211		242616	243242	242966	-		NAD(P)H dehydrogenase homologue
ΦNE 09004			242616	243242	242967			
ΦNE 07811			242616	243242	243049			
ΦNE 10874			242616	243242	243156			
ΦNE 10277			242616	243242	243244		*	
ΦNE 11857	SAV0212		243451	244029	243505	+		hypothetical protein
ΦNE 04162			243451	244029	243523			
ΦNE 06068			243451	244029	243581			
ΦNE 13778			243451	244029	243651			
ΦNE 10402			243451	244029	243801			
ΦNE 10403			243451	244029	243801			
ΦNE 10405			243451	244029	243801			
ΦNE 10410			243451	244029	243801			
ΦNE 10411			243451	244029	243801			
ΦNE 10419			243451	244029	243801			
ΦNE 10420			243451	244029	243801			
ΦNE 10423			243451	244029	243801			
ΦNE 10428			243451	244029	243801			
ΦNE 10430			243451	244029	243801			
ΦNE 10460			243451	244029	243801			
ΦNE 10462			243451	244029	243801			
ΦNE 11738			243451	244029	243836			
ΦNE 13376			243451	244029	243837			
ΦNE 06383	SAV0213	<i>msmX</i>	244413	245510	244684	+		multiple sugar-binding transport ATP-binding protein
ΦNE 08675		<i>msmX</i>	244413	245510	244864			
ΦNE 06618		<i>msmX</i>	244413	245510	245076			
ΦNE 12348		<i>msmX</i>	244413	245510	245097			
ΦNE 06972		<i>msmX</i>	244413	245510	245467			
ΦNE 03834	SAV0214		245523	246794	245568	+		hypothetical protein
ΦNE 14479			245523	246794	245996			
ΦNE 12263			245523	246794	246580			
ΦNE 08291	SAV0215		246797	248065	247574	+		maltose/maltodextrin transport permease homologue
ΦNE 13547			246797	248065	247607			
ΦNE 12504	SAV0216		248067	248906	248139	+		maltose/maltodextrin transport permease homologue
ΦNE 02950			248067	248906	248287			
ΦNE 03194			248067	248906	248298			
ΦNE 13904			248067	248906	248348			
ΦNE 00051			248067	248906	248447			
ΦNE 01515			248067	248906	248629			
ΦNE 12364	SAV0217		248977	250056	249316	+		hypothetical protein
ΦNE 04534	SAV0218		250081	251121	250298	+		hypothetical protein
ΦNE 04548			250081	251121	250298			
ΦNE 11575			250081	251121	250363			
ΦNE 12211			250081	251121	250445			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 09449			250081	251121	250692			
ΦNE 08362			250081	251121	251059			
ΦNE 01858			250081	251121	251071			
ΦNE 12429			250081	251121	251128		*	
ΦNE 03836	SAV0219		251176	252144	251228	+		conserved hypothetical protein
ΦNE 11513			251176	252144	251238			
ΦNE 01499			251176	252144	251714			
ΦNE 05230			251176	252144	252024			
ΦNE 12663	SAV0220		252505	252999	252780	-		conserved hypothetical protein
ΦNE 11730			252505	252999	252847			
ΦNE 04364			252505	252999	252977			
ΦNE 08995	SAV0222	<i>uhpT</i>	253232	253951	253056	+	*	hexose phosphate transport protein
ΦNE 10780		<i>uhpT</i>	253232	253951	253416			
ΦNE 07443		<i>uhpT</i>	253232	253951	253594			
ΦNE 05413		<i>uhpT</i>	253232	254611	253784			
ΦNE 00616		<i>uhpT</i>	253955	254611	254128			
ΦNE 01873		<i>uhpT</i>	253955	254611	254186			
ΦNE 01889		<i>uhpT</i>	253955	254611	254186			
ΦNE 00592		<i>uhpT</i>	253955	254611	254527			
ΦNE 00716		<i>uhpT</i>	253955	254611	254527			
ΦNE 00717		<i>uhpT</i>	253955	254611	254527			
ΦNE 09482	SAV0223		254970	255728	255509	-		hypothetical protein
ΦNE 12010			254970	255728	255633			
ΦNE 00452			254970	255728	255719			
ΦNE 02933	SAV0224		255721	257277	255729	-		hypothetical protein
ΦNE 09571			255721	257277	256205			
ΦNE 07304			255721	257277	256284			
ΦNE 09538			255721	257277	256840			
ΦNE 07461			255721	257277	256923			
ΦNE 11248			255721	257277	257167			
ΦNE 12666	SAV0225		257274	258242	257626	-		hypothetical protein
ΦNE 09513			257274	258242	257720			
ΦNE 02423			257274	258242	257728			
ΦNE 00232			257274	258242	257889			
ΦNE 13472	SAV0226	<i>pflB</i>	258830	261079	258836	+		formate acetyltransferase
ΦNE 13723		<i>pflB</i>	258830	261079	258899			
ΦNE 14058		<i>pflB</i>	258830	261079	258899			
ΦNE 05431		<i>pflB</i>	258830	261079	259130			
ΦNE 12999		<i>pflB</i>	258830	261079	259446			
ΦNE 07509		<i>pflB</i>	258830	261079	259600			
ΦNE 03884		<i>pflB</i>	258830	261079	260237			
ΦNE 13055		<i>pflB</i>	258830	261079	260373			
ΦNE 05414		<i>pflB</i>	258830	261079	260769			
ΦNE 13028	SAV0228		262179	263942	262923	+		hypothetical protein
ΦNE 04690			262179	263942	263028			
ΦNE 09373			262179	263942	263168			
ΦNE 09379			262179	263942	263168			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 12997			262179	263942	263784			
ΦNE 14033	SAV0229		264106	264450	264341	-		hypothetical protein
ΦNE 12830	SAV0230	<i>coa</i>	264640	266616	265432	+		staphylocoagulase precursor
ΦNE 00492		<i>coa</i>	264640	266616	265946			
ΦNE 02852		<i>coa</i>	264640	266616	266235			
ΦNE 06144	SAV0231		267203	268387	267397	-		acetyl-CoA acetyltransferase homologue
ΦNE 11460			267203	268387	267881			
ΦNE 04061			267203	268387	267919			
ΦNE 03669			267203	268387	267937			
ΦNE 08823			267203	268387	267950			
ΦNE 02733			267203	268387	267961			
ΦNE 07137			267203	268387	268048			
ΦNE 13014	SAV0232		268417	270678	268525	-		hypothetical protein
ΦNE 14533			268417	270678	268708			
ΦNE 12082			268417	270678	268980			
ΦNE 13462			268417	270678	268980			
ΦNE 09715			268417	270678	269108			
ΦNE 12806			268417	270678	269405			
ΦNE 09034			268417	270678	269645			
ΦNE 05362			268417	270678	269980			
ΦNE 10972			268417	270678	270098			
ΦNE 08134			268417	270678	270185			
ΦNE 01985			268417	270678	270230			
ΦNE 01842			268417	270678	270423			
ΦNE 00054			268417	270678	270498			
ΦNE 12864	SAV0233		270864	272075	271000	-		hypothetical protein
ΦNE 06234			270864	272075	271191			
ΦNE 09469			270864	272075	271281			
ΦNE 14512			270864	272075	271281			
ΦNE 03997			270864	272075	271523			
ΦNE 09518			270864	272075	271761			
ΦNE 11991			270864	272075	272079		*	
ΦNE 11657	SAV0234		272187	273692	272269	-		hypothetical protein
ΦNE 06845			272187	273692	272369			
ΦNE 04666			272187	273692	272971			
ΦNE 09223	SAV0235		273718	275280	273709	-	*	conserved hypothetical protein
ΦNE 00796			273718	275280	274053			
ΦNE 03764			273718	275280	274595			
ΦNE 08577			273718	275280	274931			
ΦNE 11834			273718	275280	274961			
ΦNE 00015	SAV0236		275736	276878	275953	+		hypothetical protein
ΦNE 13802			275736	276878	276226			
ΦNE 12972			275736	276878	276591			
ΦNE 03838			275736	276878	276708			
ΦNE 11407	SAV0237		277192	278667	277229	-		hypothetical protein
ΦNE 07202			277192	278667	277667			
ΦNE 09207			277192	278667	277759			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 09520			277192	278667	277874			
ΦNE 11454			277192	278667	277895			
ΦNE 03665			277192	278667	277901			
ΦNE 06982			277192	278667	278200			
ΦNE 01810			277192	278667	278344			
ΦNE 11473	SAV0238		278865	279221	279187	-		conserved hypothetical protein
ΦNE 06088	SAV0240		279577	280722	279828	-		hypothetical protein
ΦNE 11180			279577	280722	279909			
ΦNE 05886			279577	280722	279959			
ΦNE 09163			279577	280722	280130			
ΦNE 04861			279577	280722	280138			
ΦNE 14418			279577	280722	280303			
ΦNE 11105			279577	280722	280386			
ΦNE 02831	SAV0241	<i>lctE</i>	281295	282248	281357	+		L-lactate dehydrogenase
ΦNE 11741		<i>lctE</i>	281295	282248	281727			
ΦNE 06726		<i>lctE</i>	281295	282248	281990			
ΦNE 12870	SAV0242		282568	284097	283082	-		PTS enzyme
ΦNE 11718			282568	284097	283359			
ΦNE 11720			282568	284097	283359			
ΦNE 08010			282568	284097	283588			
ΦNE 10824			282568	284097	283773			
ΦNE 02365	SAV0243		284459	285394	285173	+		hypothetical protein
ΦNE 12294	SAV0244		285731	287827	286723	+		hypothetical protein
ΦNE 10705			285731	287827	286897			
ΦNE 09375			285731	287827	287477			
ΦNE 09381			285731	287827	287477			
ΦNE 14293			285731	287827	287780			
ΦNE 03950	SAV0245		287812	288279	288125	+		hypothetical protein
ΦNE 13901			287812	288279	288148			
ΦNE 06720			287812	288279	288272			
ΦNE 05635	SAV0246		288302	288580	288320	+		hypothetical protein
ΦNE 13103	SAV0247	<i>gatC</i>	288807	290066	289951	+		probable PTS galactitol-specific enzyme IIC component
ΦNE 05298	SAV0248		290084	291139	290258	+		sorbitol dehydrogenase
ΦNE 02456			290084	291139	290347			
ΦNE 10639			290084	291139	290350			
ΦNE 10934			290084	291139	290350			
ΦNE 08061			290084	291139	290462			
ΦNE 05235	SAV0250		291311	292354	291399	+		sorbitol dehydrogenase homologue
ΦNE 12703			291311	292354	291463			
ΦNE 02563			291311	292354	291506			
ΦNE 00243			291311	292354	291643			
ΦNE 12539			291311	292354	291884			
ΦNE 10860			291311	292354	291885			
ΦNE 02654			291311	292354	291890			
ΦNE 04049			291311	292354	291890			
ΦNE 09085			291311	292354	291906			
ΦNE 12737			291311	292354	292007			



Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 01506			291311	292354	292222			
ΦNE 15241			291311	292354	292257			
ΦNE 01934	SAV0251		292882	293598	293284	+		hypothetical protein
ΦNE 07739	SAV0252		293591	294616	294169	+		hypothetical protein
ΦNE 07972			293591	294616	294192			
ΦNE 05236			293591	294616	294477			
ΦNE 06414			293591	294616	294533			
ΦNE 06545	SAV0253		294638	296332	294857	+		hypothetical protein
ΦNE 04632			294638	296332	295374			
ΦNE 03224	SAV0258		301682	303403	301700	+		hypothetical protein
ΦNE 07206			301682	303403	302075			
ΦNE 04126			301682	303403	302528			
ΦNE 08462			301682	303403	302661			
ΦNE 06310			301682	303403	302928			
ΦNE 06910			301682	303403	303100			
ΦNE 00118	SAV0259	<i>scdA</i>	303547	304221	303944	+		cell division and morphogenesis-related protein
ΦNE 02542		<i>scdA</i>	303547	304221	304003			
ΦNE 02543		<i>scdA</i>	303547	304221	304003			
ΦNE 04188		<i>scdA</i>	303547	304221	304094			
ΦNE 12116		<i>scdA</i>	303547	304221	304094			
ΦNE 11393		<i>scdA</i>	303547	304221	304201			
ΦNE 02846	SAV0260	<i>lytS</i>	304466	306220	304602	+		two-component sensor histidine kinase
ΦNE 08540		<i>lytS</i>	304466	306220	304602			
ΦNE 03944		<i>lytS</i>	304466	306220	304810			
ΦNE 13256		<i>lytS</i>	304466	306220	304851			
ΦNE 07386		<i>lytS</i>	304466	306220	305276			
ΦNE 00645		<i>lytS</i>	304466	306220	305741			
ΦNE 05796	SAV0261	<i>lytR</i>	306223	306963	306277	+		two-component response regulator
ΦNE 04539		<i>lytR</i>	306223	306963	306830			
ΦNE 06542		<i>lytR</i>	306223	306963	306957			
ΦNE 08827	SAV0262	<i>lrgA</i>	307082	307519	307235	+		holin-like protein
ΦNE 00684		<i>lrgA</i>	307082	307519	307409			
ΦNE 12275	SAV0264		308321	309025	308741	-		hypothetical protein
ΦNE 05502			308321	309025	309014			
ΦNE 13853	SAV0265		309174	309965	309184	+		hypothetical protein
ΦNE 11126			309174	309965	309757			
ΦNE 10715			309174	309965	309777			
ΦNE 10852	SAV0266	<i>bglA</i>	309981	311417	310166	+		6-phospho-beta-glucosidase
ΦNE 12650		<i>bglA</i>	309981	311417	311312			
ΦNE 11711	SAV0267		311904	312665	311910	-		conserved hypothetical protein
ΦNE 08331			311904	312665	311922			
ΦNE 12288			311904	312665	312403			
ΦNE 08149			311904	312665	312581			
ΦNE 09554			311904	312665	312646			
ΦNE 09840	SAV0268	<i>rbsK</i>	312916	313830	313312	-		probable ribokinase
ΦNE 07989	SAV0269	<i>rbsD</i>	313858	314262	314040	-		ribose permease
ΦNE 05444	SAV0270		314277	315158	314338	-		hypothetical protein

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 08976			314277	315158	314506			
ΦNE 09036			314277	315158	314509			
ΦNE 07943			314277	315158	315162		*	
ΦNE 03680	SAV0271		315390	316388	315393	-		hypothetical protein
ΦNE 07021			315390	316388	315541			
ΦNE 12824			315390	316388	316020			
ΦNE 05434			315390	316388	316031			
ΦNE 03097			315390	316388	316321			
ΦNE 11540			315390	316388	316393		*	
ΦNE 07234	SAV0272		316527	316727	316697	+		NADH dehydrogenase subunit
ΦNE 12766	SAV0273		316765	317157	316815	+		hypothetical protein
ΦNE 04884	SAV0274		317285	318661	317347	-		hypothetical protein
ΦNE 11282			317285	318661	317434			
ΦNE 07031			317285	318661	317496			
ΦNE 10840			317285	318661	318057			
ΦNE 00275			317285	318661	318145			
ΦNE 09562			317285	318661	318150			
ΦNE 14451			317285	318661	318241			
ΦNE 06195			317285	318661	318376			
ΦNE 01870	SAV0275		318895	319887	319279	+		hypothetical protein
ΦNE 05529			318895	319887	319592			
ΦNE 06423			318895	319887	319715			
ΦNE 02987	SAV0276	<i>lytM</i>	320213	321163	320262	+		peptidoglycan hydrolase
ΦNE 13071		<i>lytM</i>	320213	321163	320364			
ΦNE 07010		<i>lytM</i>	320213	321163	320801			
ΦNE 10851	SAV0277		321215	321874	321224	-		conserved hypothetical protein
ΦNE 04752			321215	321874	321460			
ΦNE 12831			321215	321874	321495			
ΦNE 04665			321215	321874	321549			
ΦNE 10915			321215	321874	321778			
ΦNE 05460	SAV0278		321888	322808	321908	-		hypothetical protein
ΦNE 12519			321888	322808	321934			
ΦNE 07287			321888	322808	321937			
ΦNE 11434			321888	322808	322015			
ΦNE 05175			321888	322808	322120			
ΦNE 13402			321888	322808	322400			
ΦNE 00493			321888	322808	322444			
ΦNE 05550			321888	322808	322720			
ΦNE 01681	SAV0279		322805	323971	322898	-		hypothetical protein
ΦNE 00381			322805	323971	323117			
ΦNE 10664			322805	323971	323298			
ΦNE 00629			322805	323971	323604			
ΦNE 13243			322805	323971	323612			
ΦNE 07198			322805	323971	323625			
ΦNE 01970			322805	323971	323824			
ΦNE 04368			322805	323971	323906			
ΦNE 11750	SAV0280		324039	325562	324319	-		hypothetical protein

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 06456			324039	325562	324411			
ΦNE 04994			324039	325562	324451			
ΦNE 03794			324039	325562	324809			
ΦNE 13900			324039	325562	325010			
ΦNE 10570			324039	325562	325061			
ΦNE 14462			325893	326786	326019			
ΦNE 14809	SAV0281		325893	326786	326019	-		hypothetical protein
ΦNE 02936			325893	326786	326184			
ΦNE 07490			325893	326786	326184			
ΦNE 14682	SAV0283		327410	330439	327923	+		hypothetical protein
ΦNE 09349			327410	330439	328600			
ΦNE 15360			327410	330439	330247			
ΦNE 06301			327410	330439	330304			
ΦNE 03742	SAV0284		330439	330897	330560	+		hypothetical protein
ΦNE 13152	SAV0285		330869	331111	330912	+		conserved hypothetical protein
ΦNE 11241			330869	331111	330968			
ΦNE 02411	SAV0286		331124	332458	331322	+		conserved hypothetical protein
ΦNE 11556			331124	332458	331322			
ΦNE 15284			331124	332458	331340			
ΦNE 05513			331124	332458	331452			
ΦNE 00689			331124	332458	331890			
ΦNE 00165			331124	332458	331950			
ΦNE 00394			331124	332458	331950			
ΦNE 00511			331124	332458	331950			
ΦNE 07525			331124	332458	332163			
ΦNE 10892			331124	332458	332458			
ΦNE 06491	SAV0287		332480	333679	332547	+		conserved hypothetical protein
ΦNE 07893			332480	333679	332566			
ΦNE 03683			332480	333679	332895			
ΦNE 04464			332480	333679	333271			
ΦNE 11214	SAV0288		333672	336920	333773	+		conserved hypothetical protein
ΦNE 02755			333672	336920	334140			
ΦNE 02191			333672	336920	334334			
ΦNE 02832			333672	336920	334641			
ΦNE 10633			333672	336920	335132			
ΦNE 11255			333672	336920	335135			
ΦNE 13592			333672	336920	335364			
ΦNE 04847			333672	336920	336087			
ΦNE 05618			333672	336920	336152			
ΦNE 13038			333672	336920	336315			
ΦNE 13043			333672	336920	336738			
ΦNE 08872			333672	336920	336799			
ΦNE 09488			333672	336920	336856			
ΦNE 07912	SAV0290		337358	337672	337359	+		hypothetical protein
ΦNE 08567			337358	337672	337612			
ΦNE 08340	SAV0293		338673	340517	338691	+		conserved hypothetical protein
ΦNE 11068			338673	340517	338775			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 07570			338673	340517	338953			
ΦNE 13293			338673	340517	338958			
ΦNE 03493			338673	340517	338970			
ΦNE 09277			338673	340517	339676			
ΦNE 11663			338673	340517	339724			
ΦNE 03911			338673	340517	340122			
ΦNE 08495			338673	340517	340195			
ΦNE 10978	SAV0294		340528	341019	341000	+		conserved hypothetical protein
ΦNE 13089	SAV0295		341222	341905	341220	+	*	hypothetical protein
ΦNE 04048			341222	341905	341247			
ΦNE 13694			341222	341905	341248			
ΦNE 06126			341222	341905	341598			
ΦNE 06822			341222	341905	341712			
ΦNE 12070			341222	341905	341846			
ΦNE 00500			341222	341905	341857			
ΦNE 07742	SAV0296		342051	342662	342145	+		hypothetical protein
ΦNE 13914			342051	342662	342152			
ΦNE 09573			342051	342662	342193			
ΦNE 05120			342051	342662	342495			
ΦNE 04317	SAV0297		342797	343015	342915	+		hypothetical protein
ΦNE 05433	SAV0298		343147	343647	343317	+		conserved hypothetical protein
ΦNE 10048			343147	343647	343320			
ΦNE 02932			343147	343647	343493			
ΦNE 04791			343147	343647	343544			
ΦNE 06103	SAV0299		343658	344158	343759	+		conserved hypothetical protein
ΦNE 11844	SAV0300		344169	344630	344582	+		conserved hypothetical protein
ΦNE 06534	SAV0301		344679	345179	344885	+		conserved hypothetical protein
ΦNE 06634	SAV0302		345190	345675	345538	+		conserved hypothetical protein
ΦNE 10684			345190	345675	345582			
ΦNE 10920			345190	345675	345625			
ΦNE 06648			345190	345675	345653			
ΦNE 08543	SAV0303		346300	346674	346682	+	*	hypothetical protein
ΦNE 06396	SAV0304		346824	347222	347078	+		hypothetical protein
ΦNE 07501			346824	347222	347103			
ΦNE 03864			346824	347222	347178			
ΦNE 12220	SAV0305		347438	348262	347929	-		hypothetical protein
ΦNE 00605			347438	348262	347977			
ΦNE 09719			347438	348262	348228			
ΦNE 14709	SAV0306		348499	349806	348660	-		hypothetical protein
ΦNE 05155			348499	349806	348897			
ΦNE 03413			348499	349806	349093			
ΦNE 12867			348499	349806	349118			
ΦNE 03089	SAV0307		350390	351280	350410	+		hypothetical protein
ΦNE 12439			350390	351280	350410			
ΦNE 07388			350390	351280	350669			
ΦNE 02028			350390	351280	350750			
ΦNE 02029			350390	351280	350750			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 04783			350390	351280	350982			
ΦNE 08120			350390	351280	351098			
ΦNE 07352			350390	351280	351138			
ΦNE 06476	SAV0308		351529	352578	351916	+		conserved hypothetical protein
ΦNE 00460			351529	352578	352279			
ΦNE 02480			351529	352578	352515			
ΦNE 13888	SAV0309		352591	353268	353054	+		hypothetical protein
ΦNE 04052	SAV0310		353476	354507	353495	+		hypothetical protein
ΦNE 07777			353476	354507	353518			
ΦNE 08817			353476	354507	353743			
ΦNE 05210			353476	354507	353745			
ΦNE 00853			353476	354507	354387			
ΦNE 02805	SAV0311		354850	355968	355283	+		hypothetical protein
ΦNE 04086			354850	355968	355298			
ΦNE 13883			354850	355968	355739			
ΦNE 00108			354850	355968	355834			
ΦNE 08765	SAV0312		355943	356866	356127	+		conserved hypothetical protein
ΦNE 10783			355943	356866	356136			
ΦNE 06575			355943	356866	356671			
ΦNE 07340			355943	356866	356671			
ΦNE 05564	SAV0313		356877	358097	357244	+		probable pyrimidine nucleoside transport protein
ΦNE 10826			356877	358097	357373			
ΦNE 03125			356877	358097	357417			
ΦNE 04110			356877	358097	357425			
ΦNE 02707			356877	358097	357684			
ΦNE 02708			356877	358097	357684			
ΦNE 04713			356877	358097	357691			
ΦNE 03193			356877	358097	357693			
ΦNE 13466			356877	358097	357916			
ΦNE 07746	SAV0314		358202	359734	358195	-	*	hypothetical protein
ΦNE 10632			358202	359734	358344			
ΦNE 06445			358202	359734	358390			
ΦNE 08831			358202	359734	358803			
ΦNE 07456			358202	359734	358863			
ΦNE 03729			358202	359734	358935			
ΦNE 09701			358202	359734	359162			
ΦNE 11215			358202	359734	359373			
ΦNE 13697			358202	359734	359460			
ΦNE 09108	SAV0315	<i>nanA</i>	359774	360655	360323	-		N-acetylneuraminase lyase subunit
ΦNE 02871	SAV0316		360813	361673	360818	+		hypothetical protein
ΦNE 08818			360813	361673	360954			
ΦNE 11934			360813	361673	361003			
ΦNE 06650			360813	361673	361408			
ΦNE 14683	SAV0317		361950	362750	362584	-		conserved hypothetical protein
ΦNE 08080			361950	362750	362691			
ΦNE 13133	SAV0318		362890	363558	362949	+		conserved hypothetical protein
ΦNE 13880			362890	363558	363217			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 03752			362890	363558	363222			
ΦNE 06525			362890	363558	363338			
ΦNE 07516			362890	363558	363453			
ΦNE 06115	SAV0319		363689	365002	364533	-		conserved hypothetical protein
ΦNE 09174			363689	365002	364908			
ΦNE 00040	SAV0320	<i>geh</i>	365420	367495	366732	+		glycerol ester hydrolase
ΦNE 08795	SAV0321		367737	368564	367969	-		hypothetical protein
ΦNE 15244	SAV0322		368637	369836	369085	-		hypothetical protein
ΦNE 12426			368637	369836	369838		*	
ΦNE 07336	SAV0323		370138	371139	370447	+		hypothetical protein
ΦNE 10723			370138	371139	370480			
ΦNE 07949			370138	371139	370660			
ΦNE 12538			370138	371139	370748			
ΦNE 11496	SAV0324		371173	371505	371231	+		hypothetical protein
ΦNE 05241	SAV0325		371506	372306	371698	+		conserved hypothetical protein
ΦNE 09128			371506	372306	371855			
ΦNE 11482			371506	372306	372204			
ΦNE 14522			371506	372306	372247			
ΦNE 04742	SAV0326		372293	373240	372306	+		hypothetical protein
ΦNE 07407			372293	373240	372984			
ΦNE 01707			372293	373240	373071			
ΦNE 07189			372293	373240	373212			
ΦNE 11764			373218	374240	373400			
ΦNE 02961	SAV0327		373218	374240	373460	+		hypothetical protein
ΦNE 04339			373218	374240	373561			
ΦNE 12083			373218	374240	374243		*	
ΦNE 08706			373218	374240	374247		*	
ΦNE 08707			373218	374240	374247		*	
ΦNE 06073	SAV0328		374556	375581	375132	+		hypothetical protein
ΦNE 13813			374556	375581	375240			
ΦNE 06254			374556	375581	375475			
ΦNE 02086	SAV0329		375675	377021	375736	-		hypothetical protein
ΦNE 11976			375675	377021	376153			
ΦNE 04777			375675	377021	376175			
ΦNE 05096			375675	377021	376207			
ΦNE 10946			375675	377021	376351			
ΦNE 07702			375675	377021	376484			
ΦNE 05517			375675	377021	376516			
ΦNE 11793			375675	377021	376556			
ΦNE 09291			375675	377021	376754			
ΦNE 11892			375675	377021	377030		*	
ΦNE 11892	SAV0330		377036	377320	377030	-	*	conserved hypothetical protein
ΦNE 08728			377036	377320	377091			
ΦNE 02277			377036	377320	377302			
ΦNE 04848	SAV0332		377770	379725	378044	-		hypothetical protein
ΦNE 06548			377770	379725	378513			
ΦNE 00014			377770	379725	378586			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 11684			377770	379725	378586			
ΦNE 07503			377770	379725	378790			
ΦNE 02510			377770	379725	378966			
ΦNE 01509			377770	379725	379140			
ΦNE 01510			377770	379725	379140			
ΦNE 05320			377770	379725	379225			
ΦNE 02134	SAV0334		380463	381818	380574	+		conserved hypothetical protein
ΦNE 04148			380463	381818	380574			
ΦNE 12814			380463	381818	380886			
ΦNE 08652			380463	381818	381219			
ΦNE 06133			380463	381818	381454			
ΦNE 13808			380463	381818	381495			
ΦNE 07308			380463	381818	381696			
ΦNE 12875			380463	381818	381699			
ΦNE 03498	SAV0335		381922	382380	382253	+		hypothetical protein
ΦNE 08713	SAV0337	<i>glpT</i>	382444	382719	382623	-		glycerol-3-phosphate transporter
ΦNE 05632	SAV0337	<i>glpT</i>	382738	383802	382799	-		glycerol-3-phosphate transporter
ΦNE 12614		<i>glpT</i>	382738	383802	382944			
ΦNE 02555		<i>glpT</i>	382738	383802	383214			
ΦNE 07783		<i>glpT</i>	382738	383802	383581			
ΦNE 04867		<i>glpT</i>	382738	383802	383744			
ΦNE 03817		<i>glpT</i>	382738	383802	383771			
ΦNE 13805	SAV0338		384114	385040	384245	+		conserved hypothetical protein
ΦNE 08388			384114	385040	384418			
ΦNE 13032			384114	385040	384535			
ΦNE 12267			384114	385040	384815			
ΦNE 02460			384114	385040	384904			
ΦNE 10394	SAV0339		385054	386115	385169	+		conserved hypothetical protein
ΦNE 00413			385054	386115	385462			
ΦNE 12206			385054	386115	385462			
ΦNE 04056			385054	386115	385579			
ΦNE 14638			385054	386115	385723			
ΦNE 01514			385054	386115	385786			
ΦNE 02044			385054	386115	385787			
ΦNE 05037	SAV0340		386129	386695	386309	+		hypothetical protein
ΦNE 03829			386129	386695	386441			
ΦNE 00622			386129	386695	386483			
ΦNE 06448			386129	386695	386502			
ΦNE 07595			386129	386695	386567			
ΦNE 11379	SAV0341		386754	387749	386758	-		conserved hypothetical protein
ΦNE 09397			386754	387749	386802			
ΦNE 06430			386754	387749	386955			
ΦNE 07826			386754	387749	386955			
ΦNE 12272			386754	387749	386959			
ΦNE 09120			386754	387749	386962			
ΦNE 09117			386754	387749	387072			
ΦNE 02680			386754	387749	387234			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 03583			386754	387749	387235			
ΦNE 13170			386754	387749	387245			
ΦNE 08690			386754	387749	387524			
ΦNE 01547			386754	387749	387579			
ΦNE 07708			386754	387749	387611			
ΦNE 00424			386754	387749	387613			
ΦNE 09560			386754	387749	387698			
ΦNE 12477	SAV0342		388114	388659	388397	+		hypothetical protein
ΦNE 12469			388114	388659	388399			
ΦNE 13656	SAV0343		388926	389780	389037	+		conserved hypothetical protein
ΦNE 12557			388926	389780	389319			
ΦNE 11302	SAV0344		389891	391006	390390	+		conserved hypothetical protein
ΦNE 05333			389891	391006	390642			
ΦNE 06246			389891	391006	390922			
ΦNE 02522			389891	391006	390924			
ΦNE 07975			389891	391006	390929			
ΦNE 08222			389891	391006	390938			
ΦNE 11665	SAV0345		390984	392699	391045	+		conserved hypothetical protein
ΦNE 14527			390984	392699	391542			
ΦNE 10980			390984	392699	391804			
ΦNE 06058			390984	392699	391860			
ΦNE 09219			390984	392699	392262			
ΦNE 11735			390984	392699	392275			
ΦNE 05694			390984	392699	392466			
ΦNE 03885			390984	392699	392481			
ΦNE 03887			390984	392699	392481			
ΦNE 14491			390984	392699	392484			
ΦNE 14795			390984	392699	392484			
ΦNE 14801			390984	392699	392484			
ΦNE 14803			390984	392699	392484			
ΦNE 14811			390984	392699	392484			
ΦNE 14836			390984	392699	392484			
ΦNE 14849			390984	392699	392484			
ΦNE 14853			390984	392699	392484			
ΦNE 14887			390984	392699	392484			
ΦNE 14915			390984	392699	392484			
ΦNE 14921			390984	392699	392484			
ΦNE 15053			390984	392699	392484			
ΦNE 15007			390984	392699	392500			
ΦNE 10082			390984	392699	392515			
ΦNE 09556			390984	392699	392617			
ΦNE 12868			390984	392699	392683			
ΦNE 12780	SAV0346		392940	393602	393297	-		conserved hypothetical protein
ΦNE 03851			392940	393602	393348			
ΦNE 05420			392940	393602	393348			
ΦNE 10661	SAV0348		393981	394370	394066	-		hypothetical protein
ΦNE 10814			393981	394370	394363			



Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 14614	SAV0350		394810	395523	394925	+		hypothetical protein
ΦNE 11890			394810	395523	395426			
ΦNE 11900			394810	395523	395426			
ΦNE 08896			394810	395523	395461			
ΦNE 07402	SAV0351		395548	396390	395752	+		hypothetical protein
ΦNE 09288			395548	396390	395785			
ΦNE 04881			395548	396390	395788			
ΦNE 06556	SAV0352		396390	397019	396581	+		conserved hypothetical protein
ΦNE 12698			396390	397019	396831			
ΦNE 12079			396390	397019	396866			
ΦNE 03635			396390	397019	396869			
ΦNE 03562	SAV0353		397406	398539	397622	-		hypothetical protein
ΦNE 04172			397406	398539	397640			
ΦNE 11979			397406	398539	397650			
ΦNE 05351			397406	398539	397845			
ΦNE 05352			397406	398539	397845			
ΦNE 05421			397406	398539	397845			
ΦNE 06533			397406	398539	397996			
ΦNE 02127			397406	398539	398257			
ΦNE 08839	SAV0354		399078	400259	399664	+		acetyl-CoA C-acetyltransferase homologue
ΦNE 09086			399078	400259	399930			
ΦNE 10526	SAV0355		400342	401094	400373	-		conserved hypothetical protein
ΦNE 03134			400342	401094	400509			
ΦNE 06551			400342	401094	400600			
ΦNE 11313			400342	401094	400912			
ΦNE 04642	SAV0356	<i>metE</i>	401137	403365	401477	-		5-methyltetrahydropteroyltrimethylglutamate-homocysteine methyltransferase
ΦNE 00724		<i>metE</i>	401137	403365	402278			
ΦNE 02141		<i>metE</i>	401137	403365	403012			
ΦNE 00735		<i>metE</i>	401137	403365	403019			
ΦNE 00167	SAV0357		403362	405203	403823	-		conserved hypothetical protein
ΦNE 00146			403362	405203	403825			
ΦNE 00204			403362	405203	404047			
ΦNE 00486			403362	405203	404047			
ΦNE 02989			403362	405203	404905			
ΦNE 13452			403362	405203	404907			
ΦNE 12307	SAV0358		405172	406332	405483	-		hypothetical protein
ΦNE 12166			405172	406332	405543			
ΦNE 08730			405172	406332	405818			
ΦNE 12463	SAV0359		406329	407432	406927	-		hypothetical protein
ΦNE 04976			406329	407432	407150			
ΦNE 07988	SAV0360		408103	408939	408745	+		hypothetical protein
ΦNE 06558			408103	408939	408787			
ΦNE 09137			408103	408939	408819			
ΦNE 03281			408103	408939	408839			
ΦNE 11678	SAV0361		409093	409974	409757	+		conserved hypothetical protein
ΦNE 14769	SAV0363		410219	411316	410351	+		hypothetical protein
ΦNE 12209			410219	411316	410601			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 06441			410219	411316	410877			
ΦNE 06449			410219	411316	410967			
ΦNE 13266	SAV0368		413228	414202	413859	-		hypothetical protein
ΦNE 07510			413228	414202	413968			
ΦNE 01611			413228	414202	413980			
ΦNE 14444			413228	414202	413986			
ΦNE 13684	SAV0369		414254	414508	415118	-	*	truncated integrase
ΦNE 13684	SAV0370		415124	415735	415118	+	*	hypothetical protein
ΦNE 08152			415124	415735	415475			
ΦNE 13296			415124	415735	415521			
ΦNE 09501			415124	415735	415622			
ΦNE 02822	SAV0372		416653	417225	416654	+		conserved hypothetical protein
ΦNE 07268	SAV0375		418215	418424	418275	-		hypothetical protein
ΦNE 06108	SAV0376		418578	419183	418686	+		hypothetical protein
ΦNE 14613			418578	419183	418686			
ΦNE 03854			418578	419183	418767			
ΦNE 05334			418578	419183	419004			
ΦNE 03425	SAV0377		419249	419632	419456	-		conserved hypothetical protein
ΦNE 04161			419249	419632	419457			
ΦNE 01781			419249	419632	419460			
ΦNE 01991			419249	419632	419494			
ΦNE 15342			419249	419632	419496			
ΦNE 12266	SAV0378		419902	420528	420434	-		hypothetical protein
ΦNE 11517			419902	420528	420477			
ΦNE 01746	SAV0379		420601	420792	420716	-		hypothetical protein
ΦNE 12691	SAV0381	<i>ahpC</i>	422511	423080	422638	-		alkyl hydroperoxide reductase subunit C
ΦNE 14050	SAV0381	<i>ahpC</i>	422511	423080	422726	-		
ΦNE 04519	SAV0382		423572	424327	423587	+		hypothetical protein
ΦNE 05427			423572	424327	423589			
ΦNE 13511			423572	424327	424030			
ΦNE 06054			423572	424327	424128			
ΦNE 05489	SAV0383		424407	425795	424649	-		hypothetical protein
ΦNE 09471			424407	425795	425418			
ΦNE 12236	SAV0385		428293	429249	429061	-		conserved hypothetical protein
ΦNE 09826	SAV0386		429367	430029	429401	-		hypothetical protein
ΦNE 09238	SAV0388	<i>xprT</i>	431092	431670	431101	+		xanthine phosphoribosyltransferase
ΦNE 08834	SAV0389	<i>pbuX</i>	431670	432938	431725	+		xanthine permease
ΦNE 07938		<i>pbuX</i>	431670	432938	431798			
ΦNE 04691		<i>pbuX</i>	431670	432938	432259			
ΦNE 14620		<i>pbuX</i>	431670	432938	432765			
ΦNE 02868	SAV0390	<i>guaB</i>	432976	434442	433027	+		inositol-monophosphate dehydrogenase
ΦNE 06706	SAV0391	<i>guaA</i>	434467	436008	435130	+		GMP synthase
ΦNE 02197		<i>guaA</i>	434467	436008	435193			
ΦNE 15177		<i>guaA</i>	434467	436008	435451			
ΦNE 11946		<i>guaA</i>	434467	436008	435583			
ΦNE 06940		<i>guaA</i>	434467	436008	435587			
ΦNE 08349		<i>guaA</i>	434467	436008	435619			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 11810		<i>guaA</i>	434467	436008	435940			
ΦNE 10224	SAV0416		461922	462458	462194	-		hypothetical protein
ΦNE 06701	SAV0417		462850	463554	462954	-		hypothetical protein
ΦNE 09364			462850	463554	462988			
ΦNE 11889			462850	463554	463489			
ΦNE 11897			462850	463554	463492			
ΦNE 11908			462850	463554	463516			
ΦNE 00572	SAV0420		465170	465529	465329	-		conserved hypothetical protein
ΦNE 11141			465170	465529	465471			
ΦNE 06130	SAV0421		465548	466393	465927	-		conserved hypothetical protein
ΦNE 12619			465548	466393	465984			
ΦNE 09567	SAV0424	<i>set8</i>	468817	469887	469438	+		exotoxin 8
ΦNE 04681		<i>set8</i>	468817	469887	469491			
ΦNE 10262		<i>set8</i>	468817	469887	469674			
ΦNE 10490		<i>set8</i>	468817	469887	469867			
ΦNE 08867	SAV0425	<i>set10</i>	470251	470955	470290	+		exotoxin 10
ΦNE 09122		<i>set10</i>	470251	470955	470335			
ΦNE 13316		<i>set10</i>	470251	470955	470471			
ΦNE 11488		<i>set10</i>	470251	470955	470512			
ΦNE 12345		<i>set10</i>	470251	470955	470563			
ΦNE 09645		<i>set10</i>	470251	470955	470644			
ΦNE 03859	SAV0426	<i>set11</i>	471401	472096	471521	+		exotoxin 11
ΦNE 15240		<i>set11</i>	471401	472096	471521			
ΦNE 11318		<i>set11</i>	471401	472096	471528			
ΦNE 03905		<i>set11</i>	471401	472096	471603			
ΦNE 12292		<i>set11</i>	471401	472096	472097		*	
ΦNE 02183	SAV0427	<i>set12</i>	472435	473133	472453	+		exotoxin 12
ΦNE 07136		<i>set12</i>	472435	473133	472474			
ΦNE 01980		<i>set12</i>	472435	473133	472855			
ΦNE 01645	SAV0428	<i>set13</i>	473510	474208	473559	+		exotoxin 13
ΦNE 10409		<i>set13</i>	473510	474208	473754			
ΦNE 10261		<i>set13</i>	473510	474208	473758			
ΦNE 09836		<i>set13</i>	473510	474208	473791			
ΦNE 03059		<i>set13</i>	473510	474208	473909			
ΦNE 06098		<i>set13</i>	473510	474208	474153			
ΦNE 12470	SAV0429	<i>set14</i>	474574	475257	475177	+		exotoxin 14
ΦNE 11723		<i>set14</i>	474574	475257	475202			
ΦNE 06340	SAV0430		475310	475468	475404	+		hypothetical protein
ΦNE 14715	SAV0432	<i>hsdS</i>	477070	478281	477173	+		probable restriction modification system specificity subunit
ΦNE 09115		<i>hsdS</i>	477070	478281	477821			
ΦNE 06674		<i>hsdS</i>	477070	478281	477988			
ΦNE 00606		<i>hsdS</i>	477070	478281	477989			
ΦNE 11974		<i>hsdS</i>	477070	478281	478095			
ΦNE 14438		<i>hsdS</i>	477070	478281	478137			
ΦNE 00661		<i>hsdS</i>	477070	478281	478144			
ΦNE 04805		<i>hsdS</i>	477070	478281	478156			
ΦNE 13910	SAV0433	<i>set15</i>	478664	479347	478806	+		exotoxin 15

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 01618	SAV0434		479369	480856	479411	+		hypothetical protein
ΦNE 09712			479369	480856	480149			
ΦNE 08110			479369	480856	480357			
ΦNE 00801			479369	480856	480560			
ΦNE 01996	SAV0436	<i>lpl1</i>	481609	482412	481781	+		hypothetical protein
ΦNE 00586	SAV0438	<i>lpl3</i>	483282	484070	483318	+		hypothetical protein
ΦNE 12927	SAV0441	<i>lpl5</i>	485741	486523	485973	+		hypothetical protein
ΦNE 12150		<i>lpl5</i>	485741	486523	486170			
ΦNE 12268	SAV0442	<i>lpl6</i>	486580	487374	486600	+		hypothetical protein
ΦNE 06425	SAV0444	<i>lpl8</i>	488245	489027	488272	+		hypothetical protein
ΦNE 04371		<i>lpl8</i>	488245	489027	488474			
ΦNE 00383	SAV0445	<i>lpl9</i>	489206	490021	489375	+		hypothetical protein
ΦNE 12829	SAV0446		490011	491336	490395	+		hypothetical protein
ΦNE 05045			490011	491336	490632			
ΦNE 01489			490011	491336	490705			
ΦNE 02862			490011	491336	490803			
ΦNE 12950			490011	491336	490899			
ΦNE 12452			490011	491336	491106			
ΦNE 04779			490011	491336	491173			
ΦNE 02881			490011	491336	491181			
ΦNE 03660			490011	491336	491319			
ΦNE 02829	SAV0448		491675	491989	491719	+		hypothetical protein
ΦNE 05251	SAV0449		492278	492478	492373	-		hypothetical protein
ΦNE 07283	SAV0450		492657	493859	492653	+	*	conserved hypothetical protein
ΦNE 09060			492657	493859	492656		*	
ΦNE 04173			492657	493859	492786			
ΦNE 10015			492657	493859	493185			
ΦNE 05506			492657	493859	493450			
ΦNE 03754			492657	493859	493563			
ΦNE 00537	SAV0455		500402	500644	500437	-		hypothetical protein
ΦNE 10904			500402	500644	500534			
ΦNE 03741	SAV0456		500856	501530	501167	+		conserved hypothetical protein
ΦNE 02151			500856	501530	501216			
ΦNE 02530			500856	501530	501233			
ΦNE 05316	SAV0457		501567	502301	501630	+		hypothetical protein
ΦNE 00687			501567	502301	501707			
ΦNE 12744			501567	502301	501755			
ΦNE 09422			501567	502301	501765			
ΦNE 06560			501567	502301	502038			
ΦNE 01138	SAV0458		502670	504010	503125	+		hypothetical protein
ΦNE 11558			502670	504010	504013		*	
ΦNE 14431	SAV0459	<i>cysM</i>	504227	505132	504411	+		cysteine synthase homologue
ΦNE 04955		<i>cysM</i>	504227	505132	504480			
ΦNE 06894		<i>cysM</i>	504227	505132	504670			
ΦNE 12011		<i>cysM</i>	504227	505132	504670			
ΦNE 03815		<i>cysM</i>	504227	505132	504675			
ΦNE 09274		<i>cysM</i>	504227	505132	504983			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 03966		<i>cysM</i>	504227	505132	505086			
ΦNE 08429		<i>cysM</i>	504227	505132	505087			
ΦNE 06902		<i>yrhB</i>	505146	506266	505198			
ΦNE 03554		<i>yrhB</i>	505146	506266	505213			
ΦNE 00099	SAV0461	<i>yrhB</i>	505146	506266	505221	+		cystathionine gamma-synthase homolog
ΦNE 04796		<i>yrhB</i>	505146	506266	505486			
ΦNE 01861		<i>yrhB</i>	505146	506266	505725			
ΦNE 09549	SAV0462		506561	507586	506603	+		hypothetical protein
ΦNE 00841			506561	507586	506778			
ΦNE 11775	SAV0463		507590	508249	507845	+		hypothetical protein
ΦNE 08336			507590	508249	507941			
ΦNE 02295			507590	508249	508003			
ΦNE 03585			507590	508249	508129			
ΦNE 05733			507590	508249	508181			
ΦNE 01857	SAV0464		508286	509128	508325	+		hypothetical protein
ΦNE 13917			508286	509128	508547			
ΦNE 00339			508286	509128	508770			
ΦNE 09977			508286	509128	508910			
ΦNE 05539			508286	509128	508947			
ΦNE 09353	SAV0465		509460	510263	509835	+		hypothetical protein
ΦNE 11802			509460	510263	509947			
ΦNE 01696			509460	510263	509950			
ΦNE 12140			509460	510263	510007			
ΦNE 04405			509460	510263	510090			
ΦNE 08084	SAV0466		510448	510726	510435	-	*	hypothetical protein
ΦNE 14425			510448	510726	510625			
ΦNE 06582			510448	510726	510729		*	
ΦNE 02115	SAV0467		510866	511261	511172	+		conserved hypothetical protein
ΦNE 09534			510866	511261	511258			
ΦNE 09534	SAV0468		511251	511736	511258	+		conserved hypothetical protein
ΦNE 00464			511251	511736	511676			
ΦNE 08141	SAV0469		511905	512687	512096	-		conserved hypothetical protein
ΦNE 03852			511905	512687	512248			
ΦNE 04062			511905	512687	512561			
ΦNE 04068			511905	512687	512561			
ΦNE 04070			511905	512687	512561			
ΦNE 04131	SAV0470		512684	513796	512813	-		conserved hypothetical protein
ΦNE 05165			512684	513796	512856			
ΦNE 03883			512684	513796	513127			
ΦNE 06596			512684	513796	513382			
ΦNE 11576			512684	513796	513561			
ΦNE 12685	SAV0471	<i>gltC</i>	513917	514801	514401	-		transcription activator of glutamate synthase operon
ΦNE 06250		<i>gltC</i>	513917	514801	514811		*	
ΦNE 11578	SAV0472	<i>gltB</i>	514982	519481	515912	+		glutamate synthase large subunit
ΦNE 10043		<i>gltB</i>	514982	519481	516259			
ΦNE 14687		<i>gltB</i>	514982	519481	516562			
ΦNE 04151		<i>gltB</i>	514982	519481	516821			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 04441		<i>gltB</i>	514982	519481	517008			
ΦNE 11069		<i>gltB</i>	514982	519481	517104			
ΦNE 10228		<i>gltB</i>	514982	519481	517297			
ΦNE 03726		<i>gltB</i>	514982	519481	517651			
ΦNE 04377		<i>gltB</i>	514982	519481	517817			
ΦNE 09438		<i>gltB</i>	514982	519481	517925			
ΦNE 11119		<i>gltB</i>	514982	519481	518147			
ΦNE 00215		<i>gltB</i>	514982	519481	518838			
ΦNE 00369		<i>gltB</i>	514982	519481	518838			
ΦNE 00138		<i>gltB</i>	514982	519481	519098			
ΦNE 10929		<i>gltB</i>	514982	519481	519123			
ΦNE 13372		<i>gltB</i>	514982	519481	519237			
ΦNE 12044	SAV0473	<i>gltD</i>	519499	520962	519675	+		NADH-glutamate synthase small subunit
ΦNE 08561		<i>gltD</i>	519499	520962	519748			
ΦNE 02133		<i>gltD</i>	519499	520962	520015			
ΦNE 05001		<i>gltD</i>	519499	520962	520077			
ΦNE 12442		<i>gltD</i>	519499	520962	520228			
ΦNE 08530		<i>gltD</i>	519499	520962	520229			
ΦNE 03677		<i>gltD</i>	519499	520962	520348			
ΦNE 04723		<i>gltD</i>	519499	520962	520469			
ΦNE 00072	SAV0474	<i>treP</i>	521792	523219	522098	+		phosphoenolpyruvate-dependent and trehalose-specific PTS enzyme II
ΦNE 14632		<i>treP</i>	521792	523219	522808			
ΦNE 09541		<i>treP</i>	521792	523219	522941			
ΦNE 14604		<i>treP</i>	521792	523219	523117			
ΦNE 03871	SAV0475		523283	524923	523899	+		alpha-glucosidase
ΦNE 12360	SAV0476		524948	525676	525471	+		hypothetical protein
ΦNE 03557			524948	525676	525541			
ΦNE 11167	SAV0481		536410	537747	536996	+		hypothetical protein
ΦNE 13561			536410	537747	537107			
ΦNE 07048			536410	537747	537306			
ΦNE 15220			536410	537747	537524			
ΦNE 12986			536410	537747	537528			
ΦNE 14049	SAV0485		540032	540667	540183	+		hypothetical protein
ΦNE 03926	SAV0487		541305	542030	541504	+		conserved hypothetical protein
ΦNE 01943			541305	542030	541776			
ΦNE 11308			541305	542030	541879			
ΦNE 01612	SAV0488		542023	542271	542072	+		conserved hypothetical protein
ΦNE 10845			542023	542271	542075			
ΦNE 04831	SAV0489		542273	543112	542650	+		conserved hypothetical protein
ΦNE 05607			542273	543112	543086			
ΦNE 13072			542273	543112	543107			
ΦNE 05397	SAV0490	<i>metS</i>	543397	545370	545072	+		methionyl-tRNA synthetase
ΦNE 01766		<i>metS</i>	543397	545370	545075			
ΦNE 03488	SAV0492		546341	546877	546337	+		conserved hypothetical protein
ΦNE 06122	SAV0493	<i>ksgA</i>	546882	547772	547143	+		dimethyladenosine transferase
ΦNE 05534		<i>ksgA</i>	546882	547772	547452			
ΦNE 08899	SAV0495		548453	549301	548875	+		hypothetical protein

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 09720	SAV0499	<i>gcaD</i>	551317	552669	552649	+		UDP-N-acetylglucosamine pyrophosphorylase homologue
ΦNE 11929	SAV0501	<i>rplY</i>	553931	554584	554021	+		50S ribosomal protein L25
ΦNE 09944		<i>rplY</i>	553931	554584	554061			
ΦNE 10050		<i>rplY</i>	553931	554584	554061			
ΦNE 02410		<i>rplY</i>	553931	554584	554315			
ΦNE 09430	SAV0503	<i>mfd</i>	555467	558973	555683	+		transcription-repair coupling factor
ΦNE 10525		<i>mfd</i>	555467	558973	557549			
ΦNE 11860		<i>mfd</i>	555467	558973	558256			
ΦNE 11483	SAV0504		558963	560489	559588	+		hypothetical protein
ΦNE 04818	SAV0511	<i>ftsH</i>	565134	567227	565240	+		cell-division protein
ΦNE 13644		<i>ftsH</i>	565134	567227	565240			
ΦNE 11982		<i>ftsH</i>	565134	567227	567103			
ΦNE 07872	SAV0512		567455	568336	567440	+	*	heat-shock protein HSP33 homologue
ΦNE 07334			567455	568336	567504			
ΦNE 04925			567455	568336	567721			
ΦNE 06938			567455	568336	567838			
ΦNE 06790	SAV0514	<i>folP</i>	569663	570466	569694	+		dihydropteroate synthase chain A synthetase
ΦNE 02416	SAV0516	<i>folK</i>	570806	571282	571275	+		2-amino-4-hydroxy-6-hydroxymethyldihydropteridin e pyrophosphokinase
ΦNE 09310		<i>folK</i>	570806	571282	571282			
ΦNE 09568		<i>folK</i>	570806	571282	571282			
ΦNE 10020	SAV0518		580361	581743	580545	-		hypothetical protein
ΦNE 10828			580361	581743	580563			
ΦNE 13540			580361	581743	580876			
ΦNE 06053			580361	581743	580879			
ΦNE 09910			580361	581743	580944			
ΦNE 07770			580361	581743	581042			
ΦNE 09862			580361	581743	581148			
ΦNE 10489			580361	581743	581402			
ΦNE 09746			580361	581743	581427			
ΦNE 04532			580361	581743	581438			
ΦNE 10482			580361	581743	581496			
ΦNE 03216			580361	581743	581692			
ΦNE 15271	SAV0519		581847	582734	581845	+	*	conserved hypothetical protein
ΦNE 00222			581847	582734	582028			
ΦNE 07952	SAV0520		582738	583298	582823	+		conserved hypothetical protein
ΦNE 14498			582738	583298	583135			
ΦNE 10259			582738	583298	583154			
ΦNE 08330			582738	583298	583170			
ΦNE 09357			582738	583298	583170			
ΦNE 13570			582738	583298	583273			
ΦNE 01480	SAV0521	<i>nupC</i>	583506	584720	583717	-		pyrimidine nucleoside transport protein
ΦNE 08491		<i>nupC</i>	583506	584720	583717			
ΦNE 03483		<i>nupC</i>	583506	584720	584083			
ΦNE 04483		<i>nupC</i>	583506	584720	584420			
ΦNE 14043		<i>nupC</i>	583506	584720	584615			
ΦNE 00696	SAV0522	<i>ctsR</i>	584878	585339	584888	+		transcription repressor of class III stress genes homologue
ΦNE 02037	SAV0523		585358	585924	585562	+		conserved hypothetical protein

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 12880			585358	585924	585710			
ΦNE 11531	SAV0524		585914	586921	586497	+		hypothetical protein
ΦNE 11228	SAV0525	<i>clpC</i>	586935	589391	587758	+		endopeptidase
ΦNE 03019		<i>clpC</i>	586935	589391	588453			
ΦNE 00446		<i>clpC</i>	586935	589391	588760			
ΦNE 12647	SAV0526	<i>radA</i>	589876	591240	590057	+		DNA repair protein homologue
ΦNE 03634		<i>radA</i>	589876	591240	590235			
ΦNE 09979		<i>radA</i>	589876	591240	590887			
ΦNE 05910	SAV0527		591265	592338	591394	+		conserved hypothetical protein
ΦNE 00437			591265	592338	591397			
ΦNE 07475			591265	592338	591408			
ΦNE 12850			591265	592338	591467			
ΦNE 11391			591265	592338	591934			
ΦNE 00666			591265	592338	591955			
ΦNE 11689	SAV0528	<i>gltX</i>	592895	594349	594345	+		glutamyl-tRNA synthetase
ΦNE 12388		<i>gltX</i>	592895	594349	594349			
ΦNE 12390		<i>gltX</i>	592895	594349	594349			
ΦNE 12391		<i>gltX</i>	592895	594349	594349			
ΦNE 12400		<i>gltX</i>	592895	594349	594349			
ΦNE 12403		<i>gltX</i>	592895	594349	594349			
ΦNE 07942	SAV0530	<i>cysS</i>	595373	597199	596799	+		cysteinyl-tRNA synthetase
ΦNE 12176		<i>cysS</i>	595373	597199	596887			
ΦNE 02860		<i>cysS</i>	595373	597199	596951			
ΦNE 00708	SAV0531		597207	597953	597504	+		hypothetical protein
ΦNE 13498			597207	597953	597870			
ΦNE 11988	SAV0532		597953	598477	598214	+		conserved hypothetical protein
ΦNE 03612	SAV0541		603045	603653	603505	+		conserved hypothetical protein
ΦNE 13622			603045	603653	603640			
ΦNE 03510	SAV0549		616504	617679	616617	-		hypothetical protein
ΦNE 13208			616504	617679	616774			
ΦNE 04952			616504	617679	616889			
ΦNE 12942			616504	617679	616919			
ΦNE 03459			616504	617679	617639			
ΦNE 09539	SAV0550		617886	619037	617924	+		hypothetical protein
ΦNE 03858			617886	619037	618380			
ΦNE 06156			617886	619037	618403			
ΦNE 13497	SAV0551		619307	620185	619607	+		conserved hypothetical protein
ΦNE 06526			619307	620185	620040			
ΦNE 10434			619307	620185	620119			
ΦNE 01604			619307	620185	620162			
ΦNE 09479	SAV0552	<i>araB</i>	620344	621981	620447	+		probable L-ribulokinase
ΦNE 04399		<i>araB</i>	620344	621981	620492			
ΦNE 02892		<i>araB</i>	620344	621981	620495			
ΦNE 09249		<i>araB</i>	620344	621981	620552			
ΦNE 09252		<i>araB</i>	620344	621981	620552			
ΦNE 09253		<i>araB</i>	620344	621981	620552			
ΦNE 09255		<i>araB</i>	620344	621981	620552			



Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 09256		<i>araB</i>	620344	621981	620552			
ΦNE 09258		<i>araB</i>	620344	621981	620552			
ΦNE 09260		<i>araB</i>	620344	621981	620552			
ΦNE 09261		<i>araB</i>	620344	621981	620552			
ΦNE 09262		<i>araB</i>	620344	621981	620552			
ΦNE 09273		<i>araB</i>	620344	621981	620552			
ΦNE 09275		<i>araB</i>	620344	621981	620552			
ΦNE 08988		<i>araB</i>	620344	621981	620555			
ΦNE 03229		<i>araB</i>	620344	621981	620587			
ΦNE 04353		<i>araB</i>	620344	621981	621001			
ΦNE 06281		<i>araB</i>	620344	621981	621037			
ΦNE 10454		<i>araB</i>	620344	621981	621513			
ΦNE 06335		<i>araB</i>	620344	621981	621567			
ΦNE 10943		<i>araB</i>	620344	621981	621567			
ΦNE 09259		<i>araB</i>	620344	621981	621635			
ΦNE 00027		<i>araB</i>	620344	621981	621772			
ΦNE 07226	SAV0553		622195	623160	622298	+		hypothetical protein
ΦNE 00610			622195	623160	622821			
ΦNE 09073	SAV0554	<i>ilvE</i>	623496	624572	624025	+		branched-chain amino acid aminotransferase homologue
ΦNE 08716		<i>ilvE</i>	623496	624572	624036			
ΦNE 12385		<i>ilvE</i>	623496	624572	624153			
ΦNE 12251	SAV0555		624822	625505	624851	+		conserved hypothetical protein
ΦNE 08699			624822	625505	625054			
ΦNE 14415			624822	625505	625347			
ΦNE 13458			624822	625505	625446			
ΦNE 06474	SAV0556		625621	626283	625721	-		hypothetical protein
ΦNE 07026			625621	626283	625790			
ΦNE 03850			625621	626283	625861			
ΦNE 02743	SAV0559		627577	628446	627647			conserved hypothetical protein
ΦNE 11104			627577	628446	627665			
ΦNE 08528			627577	628446	628025			
ΦNE 13068	SAV0560		628468	629034	628789			conserved hypothetical protein
ΦNE 09013			628468	629034	628894			
ΦNE 06677	SAV0561	<i>sdrC</i>	629464	632325	629786	+		Ser-Asp rich fibrinogen-binding, bone sialoprotein-binding protein
ΦNE 03932		<i>sdrC</i>	629464	632325	629876			
ΦNE 08654		<i>sdrC</i>	629464	632325	629933			
ΦNE 00071		<i>sdrC</i>	629464	632325	630306			
ΦNE 12620		<i>sdrC</i>	629464	632325	630311			
ΦNE 02927		<i>sdrC</i>	629464	632325	630325			
ΦNE 06131		<i>sdrC</i>	629464	632325	630510			
ΦNE 09994		<i>sdrC</i>	629464	632325	630597			
ΦNE 07414		<i>sdrC</i>	629464	632325	630639			
ΦNE 10232		<i>sdrC</i>	629464	632325	630739			
ΦNE 06187		<i>sdrC</i>	629464	632325	630791			
ΦNE 05174		<i>sdrC</i>	629464	632325	630899			
ΦNE 06089		<i>sdrC</i>	629464	632325	630966			
ΦNE 03888		<i>sdrC</i>	629464	632325	631255			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 01536		<i>sdrC</i>	629464	632325	632024			
ΦNE 00318		<i>sdrC</i>	629464	632325	632194			
ΦNE 00124		<i>sdrC</i>	629464	632325	632195			
ΦNE 00255		<i>sdrC</i>	629464	632325	632195			
ΦNE 09605	SAV0562	<i>sdrD</i>	632692	636849	633324	+		Ser-Asp rich fibrinogen-binding, bone sialoprotein-binding protein
ΦNE 09045		<i>sdrD</i>	632692	636849	634409			
ΦNE 05302		<i>sdrD</i>	632692	636849	634413			
ΦNE 03506		<i>sdrD</i>	632692	636849	634416			
ΦNE 10396		<i>sdrD</i>	632692	636849	635413			
ΦNE 11285	SAV0563	<i>sdrE</i>	637243	640668	637448	+		Ser-Asp rich fibrinogen-binding, bone sialoprotein-binding protein
ΦNE 11826		<i>sdrE</i>	637243	640668	637465			
ΦNE 09904		<i>sdrE</i>	637243	640668	637491			
ΦNE 08963		<i>sdrE</i>	637243	640668	638120			
ΦNE 03489		<i>sdrE</i>	637243	640668	638339			
ΦNE 00583		<i>sdrE</i>	637243	640668	638367			
ΦNE 00254		<i>sdrE</i>	637243	640668	638647			
ΦNE 12588		<i>sdrE</i>	637243	640668	638707			
ΦNE 01560		<i>sdrE</i>	637243	640668	638756			
ΦNE 11817		<i>sdrE</i>	637243	640668	639167			
ΦNE 01448		<i>sdrE</i>	637243	640668	639335			
ΦNE 04553		<i>sdrE</i>	637243	640668	639515			
ΦNE 04694		<i>sdrE</i>	637243	640668	640335			
ΦNE 02509	SAV0564		640789	642261	640902	+		hypothetical protein
ΦNE 11800			640789	642261	640902			
ΦNE 05212			640789	642261	640971			
ΦNE 03187			640789	642261	641095			
ΦNE 08741			640789	642261	641224			
ΦNE 00434			640789	642261	641282			
ΦNE 00800			640789	642261	641614			
ΦNE 10480	SAV0565		642386	643876	642394	-		hypothetical protein
ΦNE 04788			642386	643876	643510			
ΦNE 07891			642386	643876	643617			
ΦNE 09690	SAV0567		645049	645714	645381	-		conserved hypothetical protein
ΦNE 04823	SAV0568		645728	646087	645924	-		conserved hypothetical protein
ΦNE 09062			645728	646087	645931			
ΦNE 09065			645728	646087	645931			
ΦNE 11650	SAV0569	<i>nagB</i>	646366	647124	646766	+		probable glucosamine-6-phosphate isomerase
ΦNE 12246	SAV0570		647201	647833	647712	+		hypothetical protein
ΦNE 03062	SAV0571		647835	648383	647949	+		conserved hypothetical protein
ΦNE 13759			647835	648383	648117			
ΦNE 08820	SAV0572		648496	649143	648627	+		hypothetical protein
ΦNE 03520			648496	649143	648644			
ΦNE 03735			648496	649143	648644			
ΦNE 05026			648496	649143	648722			
ΦNE 03856	SAV0573	<i>proP</i>	649645	651045	649913	+		proline/betaine transporter homologue
ΦNE 04380		<i>proP</i>	649645	651045	650079			
ΦNE 00690		<i>proP</i>	649645	651045	650392			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 03590		<i>proP</i>	649645	651045	650674			
ΦNE 03745		<i>proP</i>	649645	651045	650753			
ΦNE 14607		<i>proP</i>	649645	651045	650923			
ΦNE 08116		<i>proP</i>	649645	651045	651007			
ΦNE 08305	SAV0574		651380	651589	651453	+		hypothetical protein
ΦNE 09443			651380	651589	651557			
ΦNE 08717	SAV0575	<i>vraA</i>	651589	652965	651848	+		hypothetical protein
ΦNE 06125		<i>vraA</i>	651589	652965	652331			
ΦNE 02468		<i>vraA</i>	651589	652965	652516			
ΦNE 04497		<i>vraA</i>	651589	652965	652526			
ΦNE 13328	SAV0576	<i>vraB</i>	652967	654106	653076	+		acetyl-CoA c-acetyltransferase
ΦNE 12947		<i>vraB</i>	652967	654106	653287			
ΦNE 05028		<i>vraB</i>	652967	654106	653952			
ΦNE 06188	SAV0577	<i>vraC</i>	654081	654446	654314	+		hypothetical protein
ΦNE 04977	SAV0580		655593	656423	656185			hypothetical protein
ΦNE 03482			655593	656423	656284			
ΦNE 14469	SAV0581	<i>ung</i>	656607	657263	656836	+		uracil-DNA glycosylase
ΦNE 10785		<i>ung</i>	656607	657263	656870			
ΦNE 06170	SAV0583		657777	658145	657942	+		conserved hypothetical protein
ΦNE 14460	SAV0584		658266	659750	658269	+		hypothetical protein
ΦNE 12340			658266	659750	659307			
ΦNE 05277			658266	659750	659385			
ΦNE 09817			658266	659750	659691			
ΦNE 02439	SAV0586		660356	661006	660655	-		conserved hypothetical protein
ΦNE 01545	SAV0588	<i>pta</i>	662589	663575	663052	+		phosphotransacetylase
ΦNE 07133	SAV0594		668568	670016	668643	-		mercuric reductase homologue
ΦNE 03429			668568	670016	668708			
ΦNE 09528			668568	670016	668795			
ΦNE 13336			668568	670016	668988			
ΦNE 04683			668568	670016	669190			
ΦNE 06257			668568	670016	669580			
ΦNE 04801			668568	670016	669635			
ΦNE 01995			668568	670016	669728			
ΦNE 10610			668568	670016	669752			
ΦNE 13692			668568	670016	669881			
ΦNE 13692	SAV0595		669877	670317	669881	-		hypothetical protein
ΦNE 10439			669877	670317	670248			
ΦNE 09988	SAV0596		670942	672336	671033	+		conserved hypothetical protein
ΦNE 09234			670942	672336	671218			
ΦNE 12757			670942	672336	671365			
ΦNE 14716			670942	672336	671713			
ΦNE 04142			670942	672336	671746			
ΦNE 13135			670942	672336	671965			
ΦNE 05481			670942	672336	672218			
ΦNE 05200	SAV0597		672340	672972	672356	+		conserved hypothetical protein
ΦNE 07877			672340	672972	672481			
ΦNE 14639			672340	672972	672692			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 02981			673019	673639	673203			
ΦNE 06547	SAV0598		673019	673639	673237	+		conserved hypothetical protein
ΦNE 09457			673019	673639	673399			
ΦNE 11522			673019	673639	673507			
ΦNE 13785			673019	673639	673607			
ΦNE 08656	SAV0600		674859	675797	674881	+		hypothetical protein
ΦNE 02070			674859	675797	674931			
ΦNE 03972			674859	675797	675227			
ΦNE 00119			674859	675797	675230			
ΦNE 04979			674859	675797	675399			
ΦNE 04560			674859	675797	675606			
ΦNE 14280	SAV0601		676243	676779	676380	+		conserved hypothetical protein
ΦNE 05263			676243	676779	676678			
ΦNE 12002	SAV0602		676947	677423	677288	+		conserved hypothetical protein
ΦNE 01599	SAV0603		677463	678758	677478	+		conserved hypothetical protein
ΦNE 11312			677463	678758	677481			
ΦNE 12108			677463	678758	677932			
ΦNE 04476			677463	678758	678032			
ΦNE 13423			677463	678758	678340			
ΦNE 11487			677463	678758	678727			
ΦNE 05238	SAV0604		678801	679307	679228	+		conserved hypothetical protein
ΦNE 04470	SAV0605	<i>adh1</i>	679806	680816	680646	+		alcohol dehydrogenase I
ΦNE 09946		<i>adh1</i>	679806	680816	680730			
ΦNE 08866		<i>adh1</i>	679806	680816	680787			
ΦNE 06320	SAV0609		684323	685210	684729	+		hypothetical protein
ΦNE 00139			684323	685210	684897			
ΦNE 06300			684323	685210	684938			
ΦNE 12062			684323	685210	684996			
ΦNE 06584			684323	685210	685079			
ΦNE 04481	SAV0610		685359	686309	685414	+		hypothetical protein
ΦNE 07453			685359	686309	685562			
ΦNE 05594			685359	686309	685888			
ΦNE 06185			685359	686309	685929			
ΦNE 13687	SAV0611		686364	687083	686415	+		hypothetical protein
ΦNE 01637			686364	687083	686459			
ΦNE 13151			686364	687083	686645			
ΦNE 09856			686364	687083	686796			
ΦNE 12058			686364	687083	686842			
ΦNE 14497			686364	687083	686878			
ΦNE 00604			686364	687083	686881			
ΦNE 03143	SAV0612		687067	687867	687379	+		hypothetical protein
ΦNE 08159			687067	687867	687406			
ΦNE 07275	SAV0614		688671	689387	689387	+		hypothetical protein
ΦNE 06666	SAV0615		689556	690344	689628	+		hypothetical protein
ΦNE 09461			689556	690344	689826			
ΦNE 09652			689556	690344	690125			
ΦNE 03663			689556	690344	690136			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 14744			689556	690344	690344			
ΦNE 10017	SAV0616	<i>sarA</i>	690598	690972	690866	-		staphylococcal accessory regulator A
ΦNE 13209	SAV0617		691920	692849	692308	-		conserved hypothetical protein
ΦNE 00330			691920	692849	692323			
ΦNE 03709			691920	692849	692549			
ΦNE 05556			691920	692849	692627			
ΦNE 06515			691920	692849	692676			
ΦNE 09404	SAV0618		693044	693268	693100	-		hypothetical protein
ΦNE 03162	SAV0620		693647	694207	693659	+		hypothetical protein
ΦNE 04096			693647	694207	693899			
ΦNE 13634			693647	694207	694031			
ΦNE 11927			693647	694207	694120			
ΦNE 11296			693647	694207	694179			
ΦNE 11754	SAV0621		694226	696250	694738	+		hypothetical protein
ΦNE 08881			694226	696250	695280			
ΦNE 10452			694226	696250	695443			
ΦNE 04837			694226	696250	695569			
ΦNE 12298			694226	696250	695861			
ΦNE 11326	SAV0622		696296	696628	696440	+		hypothetical protein
ΦNE 00286	SAV0625		697371	698867	697434	+		MnhD homologue
ΦNE 11745			697371	698867	697456			
ΦNE 02419			697371	698867	697809			
ΦNE 01806			697371	698867	698129			
ΦNE 00821			697371	698867	698412			
ΦNE 14384	SAV0626		698868	699350	699265	+		hypothetical protein
ΦNE 15297			698868	699350	699289			
ΦNE 13291	SAV0628		699624	700061	699976	+		conserved hypothetical protein
ΦNE 13474	SAV0629		700401	702443	700407	+		conserved hypothetical protein
ΦNE 01786			700401	702443	701154			
ΦNE 14555			700401	702443	701229			
ΦNE 15296			700401	702443	701648			
ΦNE 02474			700401	702443	701742			
ΦNE 05555			700401	702443	701742			
ΦNE 05588			700401	702443	701755			
ΦNE 06410			700401	702443	701967			
ΦNE 01956			700401	702443	702003			
ΦNE 13725			700401	702443	702004			
ΦNE 12361			700401	702443	702006			
ΦNE 08490			700401	702443	702012			
ΦNE 10554			700401	702443	702032			
ΦNE 13312			700401	702443	702038			
ΦNE 01485	SAV0631		704990	705919	705166	-		lipoprotein
ΦNE 08869			704990	705919	705901			
ΦNE 14394	SAV0632		705916	706752	706277	-		conserved hypothetical protein
ΦNE 09063			705916	706752	706599			
ΦNE 02717			705916	706752	706658			
ΦNE 08894	SAV0633		706746	707489	707275	-		hypothetical protein

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 09193			706746	707489	707452			
ΦNE 04913	SAV0635		708335	709087	708946	-		hypothetical protein
ΦNE 14463			708335	709087	708947			
ΦNE 12156			708335	709087	709040			
ΦNE 08883	SAV0640	<i>tagX</i>	713354	714361	713968	+		teichoic acid biosynthesis protein X
ΦNE 05382		<i>tagX</i>	713354	714361	714040			
ΦNE 11552	SAV0642	<i>pbp4</i>	714939	716234	715333	-		penicillin binding protein 4
ΦNE 13662	SAV0643		716655	718382	717066	+		ATP-binding cassette transporter A
ΦNE 02038			716655	718382	717187			
ΦNE 09403			716655	718382	717645			
ΦNE 11569			716655	718382	717805			
ΦNE 12631			716655	718382	717868			
ΦNE 05177			716655	718382	717931			
ΦNE 14458			716655	718382	718050			
ΦNE 12855	SAV0644		718451	718531	718460	+		hypothetical protein
ΦNE 09195			718451	718531	718521			
ΦNE 03704	SAV0645		718739	719968	719062	+		hypothetical protein
ΦNE 10995			718739	719968	719111			
ΦNE 13702			718739	719968	719533			
ΦNE 02716			718739	719968	719553			
ΦNE 03100	SAV0646		720715	721326	720713	+	*	conserved hypothetical protein
ΦNE 11205	SAV0647	<i>fhuA</i>	721608	722405	722118	+		ferrichrome transport ATP-binding protein
ΦNE 08160		<i>fhuA</i>	721608	722405	722302			
ΦNE 08211		<i>fhuA</i>	721608	722405	722364			
ΦNE 03749	SAV0648	<i>fhuB</i>	722441	723445	722573	+		ferrichrome transport permease
ΦNE 12142		<i>fhuB</i>	722441	723445	722663			
ΦNE 07433		<i>fhuB</i>	722441	723445	722877			
ΦNE 07881		<i>fhuB</i>	722441	723445	722942			
ΦNE 07882		<i>fhuB</i>	722441	723445	722968			
ΦNE 02314		<i>fhuB</i>	722441	723445	723344			
ΦNE 02667	SAV0649	<i>fhuG</i>	723442	724458	723550	+		ferrichrome transport permease
ΦNE 03223		<i>fhuG</i>	723442	724458	723725			
ΦNE 05008		<i>fhuG</i>	723442	724458	723808			
ΦNE 00285		<i>fhuG</i>	723442	724458	723959			
ΦNE 12124		<i>fhuG</i>	723442	724458	723959			
ΦNE 06179		<i>fhuG</i>	723442	724458	724133			
ΦNE 12862	SAV0650		724695	725660	725492	+		hypothetical protein
ΦNE 09237			724695	725660	725536			
ΦNE 08830	SAV0652		726279	726641	726364	+		conserved hypothetical protein
ΦNE 06391			726279	726641	726387			
ΦNE 02257			726279	726641	726579			
ΦNE 02489	SAV0653		726757	727254	726784	+		hypothetical protein
ΦNE 02384			726757	727254	726918			
ΦNE 01585			726757	727254	727109			
ΦNE 09478	SAV0654		727798	728778	728068	+		conserved hypothetical protein
ΦNE 02849			727798	728778	728131			
ΦNE 12623			727798	728778	728170			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 12611			727798	728778	728436			
ΦNE 06198			727798	728778	728513			
ΦNE 09147			727798	728778	728621			
ΦNE 12362			727798	728778	728668			
ΦNE 02091	SAV0655		728929	729972	728956	+		hypothetical protein
ΦNE 09658			728929	729972	729124			
ΦNE 03120			728929	729972	729808			
ΦNE 04905			728929	729972	729808			
ΦNE 06583	SAV0656		730301	730729	730477	+		hypothetical protein
ΦNE 14397			730301	730729	730622			
ΦNE 00623			730301	730729	730691			
ΦNE 11443			730301	730729	730691			
ΦNE 11410	SAV0657		730938	731444	731218	-		conserved hypothetical protein
ΦNE 03803			730938	731444	731422			
ΦNE 09891	SAV0658		731557	732480	731574	+		hypothetical protein
ΦNE 11269			731557	732480	731597			
ΦNE 03813			731557	732480	731604			
ΦNE 03115			731557	732480	731940			
ΦNE 08281			731557	732480	731995			
ΦNE 05150			731557	732480	732040			
ΦNE 02700			731557	732480	732154			
ΦNE 11930			731557	732480	732159			
ΦNE 13761			731557	732480	732161			
ΦNE 04324	SAV0659		732496	733170	732608	+		hypothetical protein
ΦNE 07802			732496	733170	732883			
ΦNE 12529			732496	733170	733118			
ΦNE 11539	SAV0660		733163	734203	733446	+		hypothetical protein
ΦNE 13161			733163	734203	733630			
ΦNE 03902			733163	734203	733669			
ΦNE 03996			733163	734203	733677			
ΦNE 05171			733163	734203	733816			
ΦNE 08661			733163	734203	733971			
ΦNE 12657	SAV0661	<i>vraF</i>	734347	735108	734497	+		ABC transporter ATP-binding protein
ΦNE 12743		<i>vraF</i>	734347	735108	734756			
ΦNE 00587		<i>vraF</i>	734347	735108	734822			
ΦNE 12065	SAV0662	<i>vraG</i>	735086	736987	735287	+		ABC transporter permease
ΦNE 04764		<i>vraG</i>	735086	736987	735383			
ΦNE 10635		<i>vraG</i>	735086	736987	735407			
ΦNE 10002		<i>vraG</i>	735086	736987	735614			
ΦNE 12433		<i>vraG</i>	735086	736987	735716			
ΦNE 04345		<i>vraG</i>	735086	736987	735748			
ΦNE 11491		<i>vraG</i>	735086	736987	735893			
ΦNE 14400		<i>vraG</i>	735086	736987	736002			
ΦNE 12418		<i>vraG</i>	735086	736987	736179			
ΦNE 08348		<i>vraG</i>	735086	736987	736224			
ΦNE 12913		<i>vraG</i>	735086	736987	736241			
ΦNE 07575		<i>vraG</i>	735086	736987	736402			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 13760		<i>vraG</i>	735086	736987	736569			
ΦNE 13738		<i>vraG</i>	735086	736987	736781			
ΦNE 07723		<i>vraG</i>	735086	736987	736833			
ΦNE 03532		<i>vraG</i>	735086	736987	736927			
ΦNE 03538		<i>vraG</i>	735086	736987	736927			
ΦNE 03539		<i>vraG</i>	735086	736987	736927			
ΦNE 11182		<i>vraG</i>	735086	736987	736948			
ΦNE 11188		<i>vraG</i>	735086	736987	736948			
ΦNE 09610	SAV0663		737710	738327	737791	+		conserved hypothetical protein
ΦNE 05491			737710	738327	738009			
ΦNE 03029	SAV0664		738343	739350	738351	+		hypothetical protein
ΦNE 11854			738343	739350	739012			
ΦNE 12204	SAV0665		739938	740735	739954	-		secretory antigen SsaA homologue
ΦNE 09455			739938	740735	740035			
ΦNE 06444	SAV0667		742437	744587	742740	+		hypothetical protein
ΦNE 11776			742437	744587	743087			
ΦNE 13409			742437	744587	743089			
ΦNE 14641			742437	744587	743100			
ΦNE 11555			742437	744587	743304			
ΦNE 05202			742437	744587	743316			
ΦNE 04824			742437	744587	744019			
ΦNE 09757			742437	744587	744277			
ΦNE 09616			742437	744587	744377			
ΦNE 12771	SAV0668		744667	745092	745040	+		hypothetical protein
ΦNE 04018	SAV0669		745558	745998	745963	+		conserved hypothetical protein
ΦNE 03602	SAV0672		747770	748450	748055	+		hypothetical protein
ΦNE 12715			747770	748450	748220			
ΦNE 02263			747770	748450	748256			
ΦNE 08050	SAV0673		748588	749802	749130	+		hypothetical protein
ΦNE 06167			748588	749802	749292			
ΦNE 14710			748588	749802	749380			
ΦNE 11906			748588	749802	749509			
ΦNE 01948			748588	749802	749567			
ΦNE 11566			748588	749802	749574			
ΦNE 03271			748588	749802	749752			
ΦNE 01974	SAV0674		749799	750287	749889	+		conserved hypothetical protein
ΦNE 06847			749799	750287	750007			
ΦNE 10215	SAV0675		750386	751075	750409	-		conserved hypothetical protein
ΦNE 05114			750386	751075	750649			
ΦNE 05583			750386	751075	750822			
ΦNE 07807	SAV0676		751202	751645	751203	+		hypothetical protein
ΦNE 00507			751202	751645	751583			
ΦNE 01633			751202	751645	751642			
ΦNE 07528	SAV0679		752624	753166	752654	+		conserved hypothetical protein
ΦNE 09638			752624	753166	752696			
ΦNE 09740			752624	753166	752696			
ΦNE 08055			752624	753166	752715			



Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 08045			752624	753166	752717			
ΦNE 10406			752624	753166	752729			
ΦNE 00785			752624	753166	752775			
ΦNE 14448			752624	753166	752855			
ΦNE 06329			752624	753166	752892			
ΦNE 02793			752624	753166	752918			
ΦNE 10019			752624	753166	753095			
ΦNE 02754			752624	753166	753107			
ΦNE 10083			752624	753166	753154			
ΦNE 09951	SAV0680		753262	753828	753443	-		conserved hypothetical protein
ΦNE 05086			753262	753828	753778			
ΦNE 06973	SAV0681		753830	754288	754079	-		conserved hypothetical protein
ΦNE 01789			753830	754288	754139			
ΦNE 00836			753830	754288	754150			
ΦNE 08015	SAV0682		754291	754974	754518	-		conserved hypothetical protein
ΦNE 06681	SAV0684		756240	757871	756423	+		hypothetical protein
ΦNE 00316			756240	757871	756948			
ΦNE 04157			756240	757871	757181			
ΦNE 07614			756240	757871	757383			
ΦNE 00617	SAV0685		757868	759541	757916	+		hypothetical protein
ΦNE 12930			757868	759541	758054			
ΦNE 02741			757868	759541	758246			
ΦNE 05141			757868	759541	758289			
ΦNE 12352			757868	759541	758702			
ΦNE 13905			757868	759541	758839			
ΦNE 03671			757868	759541	759021			
ΦNE 14881			757868	759541	759037			
ΦNE 14437			757868	759541	759048			
ΦNE 14454			757868	759541	759048			
ΦNE 14461			757868	759541	759048			
ΦNE 14474			757868	759541	759048			
ΦNE 14540			757868	759541	759048			
ΦNE 14543			757868	759541	759048			
ΦNE 14545			757868	759541	759048			
ΦNE 14546			757868	759541	759048			
ΦNE 14548			757868	759541	759048			
ΦNE 14550			757868	759541	759048			
ΦNE 14791			757868	759541	759048			
ΦNE 14856			757868	759541	759048			
ΦNE 13763			757868	759541	759123			
ΦNE 00577			757868	759541	759287			
ΦNE 10266			757868	759541	759304			
ΦNE 14538			757868	759541	759394			
ΦNE 09679			757868	759541	759515			
ΦNE 03040	SAV0686		759668	760111	760078	-		hypothetical protein
ΦNE 11829	SAV0687		760338	761264	760424	+		hypothetical protein
ΦNE 04065			760338	761264	760875			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 07605			760338	761264	760903			
ΦNE 07605			760338	761264	760903			
ΦNE 03974	SAV0688		761367	762275	761367	+		hypothetical protein
ΦNE 02580			761367	762275	761465			
ΦNE 10034			761367	762275	761738			
ΦNE 14621			761367	762275	761797			
ΦNE 08993			761367	762275	761902			
ΦNE 09003			761367	762275	761902			
ΦNE 10891			761367	762275	762177			
ΦNE 06398			761367	762275	762277		*	
ΦNE 10986	SAV0690		762880	764433	763171	+		conserved hypothetical protein
ΦNE 13506			762880	764433	763538			
ΦNE 12280	SAV0691		764519	765892	764941	+		hypothetical protein
ΦNE 14693			764519	765892	765366			
ΦNE 11360	SAV0692		766047	766331	766307	-		hypothetical protein
ΦNE 02306	SAV0693		766328	766948	766389	-		conserved hypothetical protein
ΦNE 04797			766328	766948	766646			
ΦNE 12979			766328	766948	766758			
ΦNE 11397			766328	766948	766761			
ΦNE 08465			766328	766948	766762			
ΦNE 07256			766328	766948	766834			
ΦNE 09710	SAV0694		767131	767553	767397	-		conserved hypothetical protein
ΦNE 05267	SAV0695	<i>norA</i>	767762	768928	768480	+		quinolone resistance protein
ΦNE 14499		<i>norA</i>	767762	768928	768489			
ΦNE 11290		<i>norA</i>	767762	768928	768509			
ΦNE 06619		<i>norA</i>	767762	768928	768529			
ΦNE 09594	SAV0696		769221	769673	769538	+		hypothetical protein
ΦNE 02147			769221	769673	769552			
ΦNE 11344			769221	769673	769594			
ΦNE 04834			769221	769673	769598			
ΦNE 13306			769221	769673	769600			
ΦNE 04999			769221	769673	769604			
ΦNE 09918	SAV0698		770582	771343	770646	+		hypothetical protein
ΦNE 13698	SAV0699	<i>fruB</i>	771340	772260	771544	+		fructose 1-phosphate kinase
ΦNE 09835		<i>fruB</i>	771340	772260	771605			
ΦNE 15260	SAV0700	<i>fruA</i>	772266	774224	772790	+		fructose specific permease
ΦNE 07862		<i>fruA</i>	772266	774224	773210			
ΦNE 07866		<i>fruA</i>	772266	774224	773210			
ΦNE 09792		<i>fruA</i>	772266	774224	773664			
ΦNE 04930		<i>fruA</i>	772266	774224	773713			
ΦNE 13355		<i>fruA</i>	772266	774224	773921			
ΦNE 01714		<i>fruA</i>	772266	774224	774132			
ΦNE 00659	SAV0701	<i>nagA</i>	774532	775713	774828	+		probable N-acetylglucosamine-6-phosphate deacetylase
ΦNE 10016		<i>nagA</i>	774532	775713	775011			
ΦNE 14408		<i>nagA</i>	774532	775713	775161			
ΦNE 09968		<i>nagA</i>	774532	775713	775362			
ΦNE 13343	SAV0702		775934	777283	775971	+		hypothetical protein

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 05064			775934	777283	776087			
ΦNE 06952			775934	777283	776254			
ΦNE 06436			775934	777283	776898			
ΦNE 09643			775934	777283	777005			
ΦNE 09837	SAV0703		777505	778344	777578	+		hypothetical protein
ΦNE 10218			777505	778344	777682			
ΦNE 10069			777505	778344	777851			
ΦNE 10602			777505	778344	778233			
ΦNE 04645	SAV0704		778476	779459	778605	+		hypothetical protein
ΦNE 12955			778476	779459	778711			
ΦNE 11490			778476	779459	778855			
ΦNE 09783			778476	779459	779125			
ΦNE 10443			778476	779459	779125			
ΦNE 07659			778476	779459	779195			
ΦNE 09808			778476	779459	779204			
ΦNE 07936			778476	779459	779344			
ΦNE 08978			778476	779459	779345			
ΦNE 12334	SAV0705	<i>saeS</i>	779531	780586	779584	-		histidine protein kinase
ΦNE 06298		<i>saeS</i>	779531	780586	779587			
ΦNE 08696		<i>saeS</i>	779531	780586	779596			
ΦNE 09887		<i>saeS</i>	779531	780586	779645			
ΦNE 09810		<i>saeS</i>	779531	780586	779674			
ΦNE 09885		<i>saeS</i>	779531	780586	779679			
ΦNE 08778		<i>saeS</i>	779531	780586	779712			
ΦNE 09752		<i>saeS</i>	779531	780586	779723			
ΦNE 09755		<i>saeS</i>	779531	780586	779755			
ΦNE 05467		<i>saeS</i>	779531	780586	779799			
ΦNE 11987		<i>saeS</i>	779531	780586	779799			
ΦNE 09734		<i>saeS</i>	779531	780586	779923			
ΦNE 07762		<i>saeS</i>	779531	780586	779957			
ΦNE 09754		<i>saeS</i>	779531	780586	779979			
ΦNE 13260		<i>saeS</i>	779531	780586	780091			
ΦNE 07904		<i>saeS</i>	779531	780586	780162			
ΦNE 12384		<i>saeS</i>	779531	780586	780375			
ΦNE 09725		<i>saeS</i>	779531	780586	780399			
ΦNE 11179		<i>saeS</i>	779531	780586	780421			
ΦNE 02321		<i>saeS</i>	779531	780586	780445			
ΦNE 10567		<i>saeS</i>	779531	780586	780504			
ΦNE 08853		<i>saeS</i>	779531	780586	780519			
ΦNE 12661		<i>saeS</i>	779531	780586	780540			
ΦNE 12747	SAV0706	<i>saeR</i>	780586	781272	780605	-		response regulator
ΦNE 08517		<i>saeR</i>	780586	781272	780627			
ΦNE 02945		<i>saeR</i>	780586	781272	780638			
ΦNE 09648		<i>saeR</i>	780586	781272	780676			
ΦNE 09655		<i>saeR</i>	780586	781272	780676			
ΦNE 09778		<i>saeR</i>	780586	781272	780676			
ΦNE 11354		<i>saeR</i>	780586	781272	780704			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 07103		<i>saeR</i>	780586	781272	780758			
ΦNE 02564		<i>saeR</i>	780586	781272	780852			
ΦNE 01594		<i>saeR</i>	780586	781272	780870			
ΦNE 12583		<i>saeR</i>	780586	781272	780910			
ΦNE 14421	SAV0707		781247	781429	781311	-		hypothetical protein
ΦNE 02705			781247	781429	781395			
ΦNE 13902			781247	781429	781416			
ΦNE 13878			781247	781429	781423			
ΦNE 12351			781247	781429	781428			
ΦNE 11666	SAV0708		782063	782503	782126	-		hypothetical protein
ΦNE 03947			782063	782503	782231			
ΦNE 07547			782063	782503	782231			
ΦNE 06932			782063	782503	782239			
ΦNE 09654			782063	782503	782359			
ΦNE 01776	SAV0709		782783	783367	783213	-		hypothetical protein
ΦNE 03711	SAV0711		784183	784602	784362	-		6-pyruvoyl tetrahydrobiopterin synthase homologue
ΦNE 09059	SAV0712		784604	785272	784996	-		conserved hypothetical protein
ΦNE 11117	SAV0713		785623	786216	785657	+		hypothetical protein
ΦNE 06611			785623	786216	785673			
ΦNE 12284			785623	786216	785845			
ΦNE 06730			785623	786216	785936			
ΦNE 07478			785623	786216	786175			
ΦNE 02930	SAV0714		786200	787351	786289	+		hypothetical protein
ΦNE 11500			786200	787351	786289			
ΦNE 08783			786200	787351	786441			
ΦNE 14279			786200	787351	786697			
ΦNE 09306			786200	787351	787346			
ΦNE 04472	SAV0715		787351	787959	787351	+		hypothetical protein
ΦNE 00549			787351	787959	787503			
ΦNE 10837			787351	787959	787520			
ΦNE 06655			787351	787959	787702			
ΦNE 03503			787351	787959	787883			
ΦNE 05377	SAV0717		788319	789029	788486	+		hypothetical protein
ΦNE 13126	SAV0718		789013	790017	789206	+		conserved hypothetical protein
ΦNE 04130			789013	790017	789274			
ΦNE 13658			789013	790017	789984			
ΦNE 04390			789013	790017	789988			
ΦNE 10194	SAV0720		792707	794584	792734	+		hypothetical protein
ΦNE 04908			792707	794584	792818			
ΦNE 14663			792707	794584	792989			
ΦNE 06242			792707	794584	793396			
ΦNE 06521			792707	794584	793496			
ΦNE 03480			792707	794584	793606			
ΦNE 13091			792707	794584	793670			
ΦNE 09483	SAV0721	<i>recQ</i>	794596	796377	794717	+		probable DNA helicase
ΦNE 06980		<i>recQ</i>	794596	796377	794948			
ΦNE 06308		<i>recQ</i>	794596	796377	795914			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 09880	SAV0722		796599	797576	796620	+		hypothetical protein
ΦNE 11507			796599	797576	796808			
ΦNE 05542	SAV0723		797569	799083	798112	+		hypothetical protein
ΦNE 13814			797569	799083	798163			
ΦNE 03050			797569	799083	798665			
ΦNE 01575			797569	799083	798742			
ΦNE 02726			797569	799083	798758			
ΦNE 05084			797569	799083	798808			
ΦNE 12500	SAV0724		799323	800381	799548	+		hypothetical protein
ΦNE 02266			799323	800381	799713			
ΦNE 09356			799323	800381	799816			
ΦNE 05002	SAV0725		800720	801262	800766	+		conserved hypothetical protein
ΦNE 13026			800720	801262	800978			
ΦNE 07217			800720	801262	800982			
ΦNE 00328	SAV0726		802085	803002	802516	-		hypothetical protein
ΦNE 09786			802085	803002	803006			
ΦNE 10568	SAV0727		803272	804777	803476	-		hypothetical protein
ΦNE 10444			803272	804777	803724			
ΦNE 10634			803272	804777	804077			
ΦNE 09563			803272	804777	804314			
ΦNE 09164			803272	804777	804317			
ΦNE 11758			803272	804777	804438			
ΦNE 12450			803272	804777	804449			
ΦNE 13087			803272	804777	804541			
ΦNE 08154			803272	804777	804624			
ΦNE 04880			803272	804777	804625			
ΦNE 10566			803272	804777	804780			
ΦNE 13548	SAV0728		805118	805618	805115	-		conserved hypothetical protein
ΦNE 10400			805118	805618	805189			
ΦNE 10547			805118	805618	805503			
ΦNE 02913	SAV0729		805638	806504	806071	-		conserved hypothetical protein
ΦNE 14605			805638	806504	806227			
ΦNE 02988	SAV0733		811235	812206	811562	+		hypothetical protein
ΦNE 02275			811235	812206	811949			
ΦNE 02670			811235	812206	812087			
ΦNE 13846	SAV0734		812193	813149	812255	+		hypothetical protein
ΦNE 02772			812193	813149	812511			
ΦNE 08763			812193	813149	812644			
ΦNE 09241			812193	813149	812692			
ΦNE 13262			812193	813149	812754			
ΦNE 02619			812193	813149	812792			
ΦNE 13566			812193	813149	813024			
ΦNE 14644			812193	813149	813084			
ΦNE 08880	SAV0735		813146	813907	813284	+		hypothetical protein
ΦNE 12408			813146	813907	813639			
ΦNE 14654	SAV0736		814026	815054	814695	+		lipoprotein
ΦNE 00012			814026	815054	815008			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 01999	SAV0737		815371	815685	815448	-		conserved hypothetical protein
ΦNE 13315			815371	815685	815684			
ΦNE 10613	SAV0740		817391	818269	817439	+		hypothetical protein
ΦNE 05052			817391	818269	817665			
ΦNE 02004			817391	818269	817725			
ΦNE 05187			817391	818269	818130			
ΦNE 07067	SAV0742		819167	820291	819466	+		hypothetical protein
ΦNE 09297			819167	820291	819775			
ΦNE 06060	SAV0743	<i>pepT</i>	820478	821704	821055	-		aminotripeptidase
ΦNE 00601		<i>pepT</i>	820478	821704	821118			
ΦNE 02418		<i>pepT</i>	820478	821704	821121			
ΦNE 04725		<i>pepT</i>	820478	821704	821634			
ΦNE 05140		<i>pepT</i>	820478	821704	821672			
ΦNE 09363	SAV0744		821718	822212	821799	-		conserved hypothetical protein
ΦNE 14757	SAV0745		822230	822991	822361	-		conserved hypothetical protein
ΦNE 05370			822230	822991	822940			
ΦNE 01804	SAV0746		823187	824257	823885	-		conserved hypothetical protein
ΦNE 01849			823187	824257	823885			
ΦNE 14380			823187	824257	824244			
ΦNE 13309	SAV0748		825795	826436	826294	-		conserved hypothetical protein
ΦNE 13833	SAV0749		826580	827446	826605	+		conserved hypothetical protein
ΦNE 12261			826580	827446	826868			
ΦNE 11101	SAV0750		827990	828892	828122	+		hypothetical protein
ΦNE 00670			827990	828892	828323			
ΦNE 01492			827990	828892	828534			
ΦNE 14691			827990	828892	828562			
ΦNE 13522	SAV0751		828885	829559	828940	+		hypothetical protein
ΦNE 11533			828885	829559	829009			
ΦNE 07108			828885	829559	829468			
ΦNE 08563	SAV0755		834971	835810	835126	+		conserved hypothetical protein
ΦNE 12918			834971	835810	835129			
ΦNE 08563			834971	835810	835139			
ΦNE 03632			834971	835810	835153			
ΦNE 00872			834971	835810	835356			
ΦNE 00148			834971	835810	835553			
ΦNE 00513			834971	835810	835553			
ΦNE 03587			834971	835810	835625			
ΦNE 11364	SAV0758	<i>uvrB</i>	837130	839121	837128	+	*	exinuclease ABC subunit B
ΦNE 11672		<i>uvrB</i>	837130	839121	837361			
ΦNE 06591		<i>uvrB</i>	837130	839121	837362			
ΦNE 13361		<i>uvrB</i>	837130	839121	837547			
ΦNE 09516		<i>uvrB</i>	837130	839121	838194			
ΦNE 13867		<i>uvrB</i>	837130	839121	838886			
ΦNE 12378	SAV0759	<i>uvrA</i>	839129	841975	839390	+		exinuclease ABC subunit A
ΦNE 14666		<i>uvrA</i>	839129	841975	839660			
ΦNE 07896		<i>uvrA</i>	839129	841975	840308			
ΦNE 06628		<i>uvrA</i>	839129	841975	840391			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 09244		<i>uvrA</i>	839129	841975	840612			
ΦNE 05522		<i>uvrA</i>	839129	841975	840806			
ΦNE 02611		<i>uvrA</i>	839129	841975	841234			
ΦNE 13319		<i>uvrA</i>	839129	841975	841256			
ΦNE 08136		<i>uvrA</i>	839129	841975	841697			
ΦNE 00560		<i>uvrA</i>	839129	841975	841725			
ΦNE 00056		<i>uvrA</i>	839129	841975	841728			
ΦNE 11142		<i>uvrA</i>	839129	841975	841821			
ΦNE 04343		<i>uvrA</i>	839129	841975	841863			
ΦNE 04223	SAV0760	<i>hprK</i>	842639	843571	842678	+		HPr kinase/phosphatase
ΦNE 14025		<i>hprK</i>	842639	843571	842729			
ΦNE 13228		<i>hprK</i>	842639	843571	842741			
ΦNE 06976		<i>hprK</i>	842639	843571	842961			
ΦNE 15201	SAV0761	<i>lgt</i>	843577	844416	843594	+		prolipoprotein diacylglyceryl transferase
ΦNE 15206		<i>lgt</i>	843577	844416	843594			
ΦNE 15207		<i>lgt</i>	843577	844416	843596			
ΦNE 07358		<i>lgt</i>	843577	844416	843601			
ΦNE 13881		<i>lgt</i>	843577	844416	843601			
ΦNE 03114		<i>lgt</i>	843577	844416	843733			
ΦNE 00106		<i>lgt</i>	843577	844416	844079			
ΦNE 09213		<i>lgt</i>	843577	844416	844087			
ΦNE 03713		<i>lgt</i>	843577	844416	844321			
ΦNE 02399	SAV0762		844424	844909	844691	+		hypothetical protein
ΦNE 05151	SAV0763		844917	846356	845539	+		conserved hypothetical protein
ΦNE 11709			844917	846356	846007			
ΦNE 06055			844917	846356	846316			
ΦNE 06657			844917	846356	846319			
ΦNE 08114	SAV0765		848303	849214	848939	+		conserved hypothetical protein
ΦNE 13116	SAV0768	<i>clpP</i>	851825	852412	851966	+		ATP-dependent Clp protease proteolytic subunit homologue
ΦNE 07860	SAV0769		852655	853557	852998	-		hypothetical protein
ΦNE 11973			852655	853557	853241			
ΦNE 00650			852655	853557	853250			
ΦNE 00102			852655	853557	853349			
ΦNE 11836			852655	853557	853421			
ΦNE 03043			852655	853557	853423			
ΦNE 15277	SAV0770		854260	854889	854609	+		conserved hypothetical protein
ΦNE 03118	SAV0775	<i>pgm</i>	860104	861621	860211	+		2, 3-diphosphoglycerate-independent phosphoglycerate mutase
ΦNE 13775		<i>pgm</i>	860104	861621	860211			
ΦNE 06684		<i>pgm</i>	860104	861621	860551			
ΦNE 14656		<i>pgm</i>	860104	861621	860958			
ΦNE 05319		<i>pgm</i>	860104	861621	860976			
ΦNE 09208		<i>pgm</i>	860104	861621	861249			
ΦNE 14436	SAV0779		864268	865008	864370	+		carboxyesterase precursor homologue
ΦNE 04111	SAV0800		878067	878636	878221	+		hypothetical protein
ΦNE 06708	SAV0803		880845	881759	881232	+		hypothetical protein
ΦNE 12006			880845	881759	881232			
ΦNE 03793			880845	881759	881412			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 12000	SAV0804		881817	882665	882068	+		hypothetical protein
ΦNE 06738			881817	882665	882130			
ΦNE 02513			881817	882665	882190			
ΦNE 10493	SAV0805		883041	883181	883071	+		hypothetical protein
ΦNE 02360			883041	883181	883140			
ΦNE 02656			883041	883181	883140			
ΦNE 12858	SAV0808		884407	885135	885101	-		conserved hypothetical protein
ΦNE 11273	SAV0809		885733	886254	885927	+		hypothetical protein
ΦNE 09646			885733	886254	886092			
ΦNE 06882	SAV0810		886393	886923	886892	+		conserved hypothetical protein
ΦNE 07401	SAV0811	<i>fnb</i>	887186	889993	888251	+		fibrinogen-binding protein
ΦNE 08738		<i>fnb</i>	887186	889993	888255			
ΦNE 07317		<i>fnb</i>	887186	889993	888481			
ΦNE 05280		<i>fnb</i>	887186	889993	888645			
ΦNE 06933	SAV0812		890214	891716	891568	+		hypothetical protein
ΦNE 07970	SAV0813	<i>ssp</i>	892069	893091	892618	+		extracellular ECM and plasma binding protein
ΦNE 00036		<i>ssp</i>	892069	893091	892625			
ΦNE 09415		<i>ssp</i>	892069	893091	892652			
ΦNE 12513		<i>ssp</i>	892069	893091	893049			
ΦNE 09823	SAV0815	<i>nuc</i>	894288	894974	894306	+		staphylococcal nuclease
ΦNE 10057		<i>nuc</i>	894288	894974	894340			
ΦNE 03877		<i>nuc</i>	894288	894974	894342			
ΦNE 14464		<i>nuc</i>	894288	894974	894521			
ΦNE 11524		<i>nuc</i>	894288	894974	894523			
ΦNE 12201		<i>nuc</i>	894288	894974	894776			
ΦNE 09519	SAV0819		896675	897244	896675	-		conserved hypothetical protein
ΦNE 07534	SAV0822		898250	898453	898341	+		hypothetical protein
ΦNE 11151	SAV0825		899565	900182	899928	-		conserved hypothetical protein
ΦNE 11590			899565	900182	900005			
ΦNE 11279			899565	900182	900072			
ΦNE 06610	SAV0826		900337	900831	900384	-		hypothetical protein
ΦNE 12871	SAV0830		902599	903138	902608	+		conserved hypothetical protein
ΦNE 15355			902599	903138	902695			
ΦNE 06050			902599	903138	903069			
ΦNE 07446			902599	903138	903121			
ΦNE 06228			902599	903138	903142		*	
ΦNE 02894	SAV0835		906501	906887	906612	+		conserved hypothetical protein
ΦNE 05142	SAV0837		907426	908451	907633	+		ABC transporter ATP-binding protein homologue
ΦNE 08443			907426	908451	908213			
ΦNE 02404	SAV0838		908444	909139	908741	+		conserved hypothetical protein
ΦNE 00555			908444	909139	909016			
ΦNE 12909	SAV0839		909157	909978	909416	+		conserved hypothetical protein
ΦNE 04279	SAV0841		910760	911611	911069	-		conserved hypothetical protein
ΦNE 03788	SAV0845		915451	915915	915875	+		hypothetical protein
ΦNE 09814	SAV0848	<i>int</i>	918692	918871	918712	+		excisionase
ΦNE 11204		<i>int</i>	918692	918871	918724			
ΦNE 13398		<i>int</i>	918692	918871	918724			



Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 11204		<i>int</i>	918692	918871	918724			
ΦNE 09031		<i>int</i>	918692	918871	918753			
ΦNE 08829		<i>int</i>	918692	918871	918864			
ΦNE 08829	SAV0849		918851	919783	918864	-		hypothetical protein
ΦNE 06091			918851	919783	918984			
ΦNE 12286			918851	919783	919060			
ΦNE 12689			918851	919783	919144			
ΦNE 10197			918851	919783	919217			
ΦNE 01443			918851	919783	919338			
ΦNE 07294			918851	919783	919469			
ΦNE 09514			918851	919783	919505			
ΦNE 00029			918851	919783	919507			
ΦNE 00225			918851	919783	919578			
ΦNE 07262			921461	922240	921524			
ΦNE 03416	SAV0855		921461	922240	921803	+		hypothetical protein
ΦNE 05572			921461	922240	921890			
ΦNE 00340			921461	922240	921935			
ΦNE 02139			921461	922240	922032			
ΦNE 15272			921461	922240	922212			
ΦNE 12671	SAV0858		922670	923317	923315	-		hypothetical protein
ΦNE 04000	SAV0861		924300	924434	924295	-	*	hypothetical protein
ΦNE 09143			924300	924434	924359			
ΦNE 12478	SAV0862		924433	924654	924542	+		hypothetical protein
ΦNE 06544			924433	924654	924654			
ΦNE 06544	SAV0863		924647	924769	924654	+		hypothetical protein
ΦNE 12038	SAV0866		926259	926933	926732	+		hypothetical protein
ΦNE 08772			926259	926933	926793			
ΦNE 07325	SAV0868		927419	928150	927412	+	*	hypothetical protein
ΦNE 12985			927419	928150	927412		*	
ΦNE 06487	SAV0874		930315	930563	930509	+		hypothetical protein
ΦNE 04743	SAV0875		930575	930826	930676	+		hypothetical protein
ΦNE 06711	SAV0876		930819	931355	930895	+		hypothetical protein
ΦNE 03004			930819	931355	931262			
ΦNE 01478	SAV0877		931392	931598	931450	+		hypothetical protein
ΦNE 12253	SAV0881		932208	932594	932330	+		hypothetical protein
ΦNE 09411			932208	932594	932405			
ΦNE 08472			932208	932594	932427			
ΦNE 04372			932208	932594	932448			
ΦNE 14628			932208	932594	932481			
ΦNE 12793			932208	932594	932499			
ΦNE 09388			932208	932594	932530			
ΦNE 05470			932208	932594	932536			
ΦNE 03184			932208	932594	932553			
ΦNE 11073	SAV0882		932594	932767	932640	+		int gene activator RinB
ΦNE 03060			932594	932767	932673			
ΦNE 01698			932594	932767	932699			
ΦNE 00024	SAV0883		932825	932914	932879	+		hypothetical protein

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 05312	SAV0885		933535	933975	933567	+		hypothetical protein
ΦNE 08673			933535	933975	933567			
ΦNE 08726			933535	933975	933680			
ΦNE 11632			933535	933975	933837			
ΦNE 10789			933535	933975	933889			
ΦNE 06264	SAV0886		933962	935239	934232	+		hypothetical protein
ΦNE 08868			933962	935239	934289			
ΦNE 06516			933962	935239	934434			
ΦNE 00046			933962	935239	934485			
ΦNE 14674			933962	935239	934539			
ΦNE 08440			933962	935239	934793			
ΦNE 08764			933962	935239	934824			
ΦNE 08843			933962	935239	934870			
ΦNE 12881			933962	935239	934881			
ΦNE 04036			933962	935239	935128			
ΦNE 05193	SAV0887		935250	936785	935339	+		hypothetical protein
ΦNE 10805			935250	936785	935428			
ΦNE 14481			935250	936785	935458			
ΦNE 03820			935250	936785	935528			
ΦNE 01646			935250	936785	935540			
ΦNE 08108			935250	936785	935624			
ΦNE 01676			935250	936785	935659			
ΦNE 06181			935250	936785	935775			
ΦNE 06090			935250	936785	935797			
ΦNE 13389			935250	936785	935800			
ΦNE 03684			935250	936785	935878			
ΦNE 01869			935250	936785	935903			
ΦNE 03001			935250	936785	935980			
ΦNE 01729			935250	936785	936012			
ΦNE 12852			935250	936785	936080			
ΦNE 01827			935250	936785	936257			
ΦNE 03204			935250	936785	936260			
ΦNE 02736			935250	936785	936621			
ΦNE 08106			935250	936785	936713			
ΦNE 00084	SAV0888		936792	937787	937091	+		hypothetical protein
ΦNE 10573			936792	937787	937094			
ΦNE 10565			936792	937787	937096			
ΦNE 06149			936792	937787	937125			
ΦNE 02714			936792	937787	937278			
ΦNE 01533			936792	937787	937282			
ΦNE 07483			936792	937787	937480			
ΦNE 02251			936792	937787	937568			
ΦNE 11790			936792	937787	937568			
ΦNE 06287			936792	937787	937571			
ΦNE 06600			936792	937787	937571			
ΦNE 04423			936792	937787	937587			
ΦNE 03685	SAV0889		937860	938030	937893	+		hypothetical protein

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 00176			937860	938030	938011			
ΦNE 00294	SAV0890		938165	938779	938229	+		hypothetical protein
ΦNE 00497			938165	938779	938483			
ΦNE 09919	SAV0891		938793	939101	938973	+		hypothetical protein
ΦNE 08474			938793	939101	939096			
ΦNE 08478			938793	939101	939096			
ΦNE 08479			938793	939101	939096			
ΦNE 08480			938793	939101	939096			
ΦNE 08483			938793	939101	939096			
ΦNE 08484			938793	939101	939096			
ΦNE 08485			938793	939101	939096			
ΦNE 08486			938793	939101	939096			
ΦNE 08487			938793	939101	939096			
ΦNE 08488			938793	939101	939096			
ΦNE 08489			938793	939101	939096			
ΦNE 08493			938793	939101	939096			
ΦNE 08497			938793	939101	939096			
ΦNE 08498			938793	939101	939096			
ΦNE 08501			938793	939101	939096			
ΦNE 08502			938793	939101	939096			
ΦNE 08503			938793	939101	939096			
ΦNE 08505			938793	939101	939096			
ΦNE 08507			938793	939101	939096			
ΦNE 08511			938793	939101	939096			
ΦNE 08512			938793	939101	939096			
ΦNE 08513			938793	939101	939096			
ΦNE 08516			938793	939101	939096			
ΦNE 08519			938793	939101	939096			
ΦNE 08520			938793	939101	939096			
ΦNE 08521			938793	939101	939096			
ΦNE 08499	SAV0892		939233	939766	939291	+		hypothetical protein
ΦNE 15214			939233	939766	939441			
ΦNE 00667			939233	939766	939470			
ΦNE 04129			939233	939766	939675			
ΦNE 11287	SAV0893		939788	940075	939853	+		hypothetical protein
ΦNE 14537			939788	940075	940083		*	
ΦNE 14537	SAV0894		940084	940416	940083	+	*	hypothetical protein
ΦNE 02185			940084	940416	940238			
ΦNE 03655	SAV0895		940413	940715	940515	+		hypothetical protein
ΦNE 06496	SAV0896		940715	941062	940751	+		hypothetical protein
ΦNE 06748			940715	941062	940897			
ΦNE 02232			940715	941062	941008			
ΦNE 06484	SAV0897		941074	941457	941141	+		hypothetical protein
ΦNE 12160			941074	941457	941393			
ΦNE 03687			941074	941457	941399			
ΦNE 10971	SAV0898		941476	942057	941507	+		hypothetical protein
ΦNE 04734			941476	942057	941843			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 06680			941476	942057	942041			
ΦNE 09552	SAV0900		942604	942858	942764	+		hypothetical protein
ΦNE 14560			942604	942858	942833			
ΦNE 09067			942604	942858	942869		*	
ΦNE 10046	SAV0901		942875	946339	943089	+		hypothetical protein
ΦNE 10062			942875	946339	943089			
ΦNE 03708			942875	946339	943127			
ΦNE 06253			942875	946339	943356			
ΦNE 12796			942875	946339	943458			
ΦNE 13838			942875	946339	943473			
ΦNE 06620			942875	946339	943622			
ΦNE 14523			942875	946339	943626			
ΦNE 09458			942875	946339	943817			
ΦNE 01917			942875	946339	944127			
ΦNE 07916			942875	946339	944310			
ΦNE 12335			942875	946339	944461			
ΦNE 14047			942875	946339	944461			
ΦNE 13605			942875	946339	944508			
ΦNE 14483			942875	946339	944673			
ΦNE 14818			942875	946339	944673			
ΦNE 14850			942875	946339	944673			
ΦNE 14858			942875	946339	944673			
ΦNE 00064			942875	946339	944681			
ΦNE 13611			942875	946339	944694			
ΦNE 14100			942875	946339	944694			
ΦNE 10885			942875	946339	944862			
ΦNE 03865			942875	946339	944936			
ΦNE 03873			942875	946339	944936			
ΦNE 13581			942875	946339	945173			
ΦNE 11192			942875	946339	945311			
ΦNE 14524			942875	946339	945348			
ΦNE 06240			942875	946339	945534			
ΦNE 08008			942875	946339	945656			
ΦNE 04159			942875	946339	945741			
ΦNE 08089			942875	946339	946111			
ΦNE 10887			942875	946339	946134			
ΦNE 00607			942875	946339	946161			
ΦNE 13200			942875	946339	946196			
ΦNE 07920			942875	946339	946349		*	
ΦNE 07920	SAV0902		946352	947299	946349	+	*	hypothetical protein
ΦNE 07215			946352	947299	946381			
ΦNE 00226			946352	947299	946394			
ΦNE 12885			946352	947299	946430			
ΦNE 02791			946352	947299	946614			
ΦNE 06112			946352	947299	946614			
ΦNE 00465			946352	947299	946615			
ΦNE 07271			946352	947299	946694			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 09632			946352	947299	946794			
ΦNE 06860			946352	947299	946855			
ΦNE 04745			946352	947299	947007			
ΦNE 06483			946352	947299	947013			
ΦNE 11378	SAV0903		947308	949209	947317	+		hypothetical protein
ΦNE 08824			947308	949209	947359			
ΦNE 10528			947308	949209	947372			
ΦNE 10630			947308	949209	947423			
ΦNE 02017			947308	949209	947506			
ΦNE 12635			947308	949209	947510			
ΦNE 07759			947308	949209	947813			
ΦNE 03000			947308	949209	948187			
ΦNE 12740			947308	949209	948200			
ΦNE 06191			947308	949209	948238			
ΦNE 12823			947308	949209	948260			
ΦNE 02845			947308	949209	948318			
ΦNE 00701			947308	949209	948497			
ΦNE 05339			947308	949209	948497			
ΦNE 13033			947308	949209	948766			
ΦNE 03165			947308	949209	948785			
ΦNE 11107			947308	949209	948993			
ΦNE 11438			947308	949209	949095			
ΦNE 01552	SAV0904		949224	951134	949278	+		hypothetical protein
ΦNE 07940			949224	951134	949302			
ΦNE 12916			949224	951134	949302			
ΦNE 01705			949224	951134	949372			
ΦNE 08825			949224	951134	949425			
ΦNE 03093			949224	951134	949439			
ΦNE 07500			949224	951134	949524			
ΦNE 13428			949224	951134	949699			
ΦNE 02959			949224	951134	949702			
ΦNE 11185			949224	951134	949784			
ΦNE 06128			949224	951134	949804			
ΦNE 07585			949224	951134	949887			
ΦNE 07585			949224	951134	949887			
ΦNE 06299			949224	951134	949967			
ΦNE 03953			949224	951134	950001			
ΦNE 05531			949224	951134	950001			
ΦNE 04146			949224	951134	950020			
ΦNE 05044			949224	951134	950020			
ΦNE 12313			949224	951134	950041			
ΦNE 03621			949224	951134	950160			
ΦNE 03900			949224	951134	950240			
ΦNE 03908			949224	951134	950240			
ΦNE 03910			949224	951134	950240			
ΦNE 06261			949224	951134	950240			
ΦNE 14057			949224	951134	950251			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 06231			949224	951134	950286			
ΦNE 14603			949224	951134	950588			
ΦNE 10647			949224	951134	950620			
ΦNE 03625			949224	951134	950872			
ΦNE 03987			949224	951134	950913			
ΦNE 00864			949224	951134	950994			
ΦNE 09341			949224	951134	951013			
ΦNE 00876			949224	951134	951040			
ΦNE 08710			949224	951134	951136		*	
ΦNE 08710	SAV0905		951134	952957	951136	+		hypothetical protein
ΦNE 15350			951134	952957	951173			
ΦNE 00637			951134	952957	951287			
ΦNE 13676			951134	952957	951506			
ΦNE 08704			951134	952957	951905			
ΦNE 12354			951134	952957	951967			
ΦNE 12973			951134	952957	952148			
ΦNE 14658			951134	952957	952244			
ΦNE 11593			951134	952957	952310			
ΦNE 12458			951134	952957	952310			
ΦNE 03445			951134	952957	952371			
ΦNE 01775			951134	952957	952411			
ΦNE 14782			951134	952957	952418			
ΦNE 09194			951134	952957	952484			
ΦNE 07080	SAV0906		952957	953334	953038	+		hypothetical protein
ΦNE 11792	SAV0908		953552	953851	953550	+	*	hypothetical protein
ΦNE 06695			953552	953851	953763			
ΦNE 11543			953552	953851	953774			
ΦNE 04015			953988	955886	954056		*	
ΦNE 06554	SAV0909		953988	955886	954074			hypothetical protein
ΦNE 12488			953988	955886	954550			
ΦNE 11630			953988	955886	954552			
ΦNE 03088			953988	955886	954694			
ΦNE 11535			953988	955886	954777			
ΦNE 02487			953988	955886	954816			
ΦNE 02254			953988	955886	954891			
ΦNE 06371			953988	955886	955045			
ΦNE 15334			953988	955886	955341			
ΦNE 01519			953988	955886	955360			
ΦNE 08047			953988	955886	955590			
ΦNE 11325			953988	955886	955648			
ΦNE 08591			953988	955886	955848			
ΦNE 03217	SAV0910		955899	957137	955950	+		hypothetical protein
ΦNE 11143			955899	957137	955990			
ΦNE 06328			955899	957137	955999			
ΦNE 04887			955899	957137	956124			
ΦNE 10617			955899	957137	956156			
ΦNE 06522			955899	957137	956302			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 00672			955899	957137	956446			
ΦNE 11311			955899	957137	956551			
ΦNE 09475			955899	957137	956701			
ΦNE 11165			955899	957137	956781			
ΦNE 06135			955899	957137	957092			
ΦNE 02505			955899	957137	957094			
ΦNE 07062			955899	957137	957096			
ΦNE 11362			955899	957137	957096			
ΦNE 06173			955899	957137	957098			
ΦNE 07722			955899	957137	957105			
ΦNE 01580	SAV0911		957143	957538	957198	+		hypothetical protein
ΦNE 00455			957143	957538	957206			
ΦNE 00487			957143	957538	957290			
ΦNE 00559			957143	957538	957290			
ΦNE 06996			957143	957538	957290			
ΦNE 07058			957143	957538	957290			
ΦNE 13651			957143	957538	957487			
ΦNE 06605	SAV0912		957594	958031	957757	+		hypothetical protein
ΦNE 00479	SAV0913		958012	959457	958121	+		amidase
ΦNE 10896			958012	959457	958630			
ΦNE 06570			958012	959457	959193			
ΦNE 12527	SAV0920		964008	965075	964247	+		hypothetical protein
ΦNE 14315	SAV0921		965460	966308	965459	+	*	conserved hypothetical protein
ΦNE 04333			965460	966308	965514			
ΦNE 00488			965460	966308	965743			
ΦNE 06241			965460	966308	966264			
ΦNE 06690	SAV0922		966321	967148	966450	+		conserved hypothetical protein
ΦNE 11244			966321	967148	966457			
ΦNE 11604			966321	967148	966781			
ΦNE 08672			966321	967148	966829			
ΦNE 11612			966321	967148	966925			
ΦNE 03068			966321	967148	967121			
ΦNE 11050			966321	967148	967122			
ΦNE 01629			966321	967148	967122			
ΦNE 06165			966321	967148	967127			
ΦNE 11053			966321	967148	967137			
ΦNE 11056			966321	967148	967145			
ΦNE 09216	SAV0923		967175	968494	967220	+		conserved hypothetical protein
ΦNE 01811			967175	968494	967635			
ΦNE 13174			967175	968494	967878			
ΦNE 03980			967175	968494	967880			
ΦNE 04926			967175	968494	968055			
ΦNE 14624			967175	968494	968166			
ΦNE 14703			967175	968494	968271			
ΦNE 04030			967175	968494	968376			
ΦNE 12149	SAV0924	<i>lipA</i>	968578	969495	968810	+		lipoic acid synthetase
ΦNE 00703		<i>lipA</i>	968578	969495	969268			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 12210		<i>lipA</i>	968578	969495	969268			
ΦNE 10729		<i>lipA</i>	968578	969495	969308			
ΦNE 02013		<i>lipA</i>	968578	969495	969420			
ΦNE 11001	SAV0927		971607	971873	971660	-		conserved hypothetical protein
ΦNE 00769			971607	971873	971685			
ΦNE 05344	SAV0928		971971	972405	972012	+		conserved hypothetical protein
ΦNE 01968	SAV0929		972405	973184	972672	+		hypothetical protein
ΦNE 05388			972405	973184	972672			
ΦNE 03519			972405	973184	973062			
ΦNE 12314			972405	973184	973092			
ΦNE 00653	SAV0930		973217	974176	973631	+		hypothetical protein
ΦNE 11315			973217	974176	973670			
ΦNE 11221			973217	974176	973743			
ΦNE 01709			973217	974176	974060			
ΦNE 05246			973217	974176	974128			
ΦNE 12076	SAV0933	<i>dltB</i>	976210	977424	976498	+		DltB membrane protein
ΦNE 14377		<i>dltB</i>	976210	977424	976940			
ΦNE 09346	SAV0935	<i>dltD</i>	977675	978850	977907	+		poly (glycerophosphate chain) D-alanine transfer protein
ΦNE 09243			979471	979779	979533			
ΦNE 10387	SAV0937		979471	979779	979600	+		conserved hypothetical protein
ΦNE 04728			979471	979779	979603			
ΦNE 12008			979471	979779	979724			
ΦNE 00231	SAV0938		979838	980902	979857	-		hypothetical protein
ΦNE 07367			979838	980902	979990			
ΦNE 12404			979838	980902	980396			
ΦNE 12434			979838	980902	980455			
ΦNE 13773			979838	980902	980541			
ΦNE 10221			979838	980902	980629			
ΦNE 10223			979838	980902	980629			
ΦNE 10235			979838	980902	980629			
ΦNE 13667			979838	980902	980665			
ΦNE 09301	SAV0939		981219	981455	981207	+	*	conserved hypothetical protein
ΦNE 13891			981219	981455	981422			
ΦNE 10876	SAV0940		981468	981827	981503	+		conserved hypothetical protein
ΦNE 01739	SAV0941		982281	983489	982281	+		hypothetical protein
ΦNE 05012	SAV0942	<i>ampA</i>	983620	985095	984403	+		probable cytosol aminopeptidase
ΦNE 05015		<i>ampA</i>	983620	985095	984403			
ΦNE 08115		<i>ampA</i>	983620	985095	984808			
ΦNE 02308		<i>ampA</i>	983620	985095	984911			
ΦNE 11584	SAV0943		985506	986822	986523	+		conserved hypothetical protein
ΦNE 10576	SAV0944		986841	987215	986853	+		conserved hypothetical protein
ΦNE 05437			986841	987215	986926			
ΦNE 04008	SAV0945		987271	988425	987690	-		hypothetical protein
ΦNE 08972			987271	988425	988239			
ΦNE 07555	SAV0956		996763	997890	996759	+	*	hypothetical protein
ΦNE 07359			996763	997890	996841			
ΦNE 09242			996763	997890	997300			



Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 12501			996763	997890	997432			
ΦNE 11078			996763	997890	997678			
ΦNE 12260			996763	997890	997886			
ΦNE 03954	SAV0957	<i>rocD</i>	998198	999388	998589	+		ornithine aminotransferase
ΦNE 11547		<i>rocD</i>	998198	999388	998726			
ΦNE 07736	SAV0958	<i>gudB</i>	999497	1000741	999884	+		NAD-specific glutamate dehydrogenase
ΦNE 14019		<i>gudB</i>	999497	1000741	1000080			
ΦNE 02830		<i>gudB</i>	999497	1000741	1000428			
ΦNE 10720		<i>gudB</i>	999497	1000741	1000449			
ΦNE 00026	SAV0959	<i>glpQ</i>	1001078	1002007	1001197	-		glycerophosphoryl diester phosphodiesterase
ΦNE 00806		<i>glpQ</i>	1001078	1002007	1001706			
ΦNE 11755	SAV0960	<i>argH</i>	1002249	1003628	1002446	-		argininosuccinate lyase
ΦNE 03785		<i>argH</i>	1002249	1003628	1002716			
ΦNE 13726		<i>argH</i>	1002249	1003628	1002745			
ΦNE 04599		<i>argH</i>	1002249	1003628	1002927			
ΦNE 08885	SAV0962	<i>pgi</i>	1005174	1006505	1006452	+		glucose-6-phosphate isomerase A
ΦNE 00327	SAV0963		1006830	1007405	1007280	+		conserved hypothetical protein
ΦNE 02078	SAV0968		1015981	1016883	1016366	+		hypothetical protein
ΦNE 08749			1015981	1016883	1016410			
ΦNE 09319			1015981	1016883	1016871			
ΦNE 02923	SAV0969		1017212	1017601	1017218	+		conserved hypothetical protein
ΦNE 08231			1017212	1017601	1017226			
ΦNE 09429			1017212	1017601	1017227			
ΦNE 05804			1017212	1017601	1017228			
ΦNE 10802			1017212	1017601	1017420			
ΦNE 09957			1017212	1017601	1017422			
ΦNE 08996			1017212	1017601	1017548			
ΦNE 09924			1017212	1017601	1017550			
ΦNE 04039			1017212	1017601	1017551			
ΦNE 06962	SAV0970	<i>cdr</i>	1017773	1019089	1018098	-		coenzyme A disulfide reductase
ΦNE 03101		<i>cdr</i>	1017773	1019089	1018179			
ΦNE 11697		<i>cdr</i>	1017773	1019089	1018392			
ΦNE 12928	SAV0974		1020935	1022749	1020976	+		hypothetical protein
ΦNE 06647			1020935	1022749	1021193			
ΦNE 05620			1020935	1022749	1021202			
ΦNE 02941			1020935	1022749	1021620			
ΦNE 06916			1020935	1022749	1021649			
ΦNE 00524			1020935	1022749	1021670			
ΦNE 11337			1020935	1022749	1021901			
ΦNE 11403			1020935	1022749	1021915			
ΦNE 02991			1020935	1022749	1021936			
ΦNE 12060			1020935	1022749	1021939			
ΦNE 11662			1020935	1022749	1022544			
ΦNE 07833	SAV0975	<i>clpB</i>	1022952	1025561	1023086	+		ClpB chaperone homologue
ΦNE 08275		<i>clpB</i>	1022952	1025561	1023099			
ΦNE 14455		<i>clpB</i>	1022952	1025561	1024434			
ΦNE 05214	SAV0976		1025620	1026489	1025701	-		hypothetical protein

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 03545			1025620	1026489	1025777			
ΦNE 06935			1025620	1026489	1025844			
ΦNE 06518			1025620	1026489	1025978			
ΦNE 11614			1025620	1026489	1026398			
ΦNE 00694	SAV0977		1026599	1027744	1026902	+		hypothetical protein
ΦNE 12509	SAV0978		1026599	1027744	1027045	+		conserved hypothetical protein
ΦNE 06247			1027728	1028369	1028056			
ΦNE 05299			1027728	1028369	1028149			
ΦNE 02143			1027728	1028369	1028222			
ΦNE 12884	SAV0979		1028362	1029483	1028460	+		hypothetical protein
ΦNE 05409			1028362	1029483	1028526			
ΦNE 14611			1028362	1029483	1028614			
ΦNE 07415			1028362	1029483	1028791			
ΦNE 09008			1028362	1029483	1029179			
ΦNE 12613			1028362	1029483	1029182			
ΦNE 03567			1028362	1029483	1029185			
ΦNE 05568			1028362	1029483	1029305			
ΦNE 11791			1028362	1029483	1029350			
ΦNE 01532	SAV0981		1030287	1030721	1030506	+		hypothetical protein
ΦNE 04633	SAV0982		1030978	1031163	1031099	-		hypothetical protein
ΦNE 04047	SAV0985		1033710	1034081	1033786	-		hypothetical protein
ΦNE 13898	SAV0986	<i>oppB</i>	1034324	1035250	1034398	+		oligopeptide transport system permease protein
ΦNE 02880		<i>oppB</i>	1034324	1035250	1034988			
ΦNE 08460	SAV0987		1035250	1036320	1035559	+		hypothetical protein
ΦNE 02280			1035250	1036320	1036180			
ΦNE 06450			1035250	1036320	1036261			
ΦNE 14304	SAV0988	<i>oppD</i>	1036336	1037418	1037092	+		oligopeptide transport system ATP-binding protein OppD homologue
ΦNE 08680	SAV0989	<i>oppF</i>	1037408	1038349	1037633	+		oligopeptide transport system ATP-binding protein OppF homologue
ΦNE 04084		<i>oppF</i>	1037408	1038349	1037806			
ΦNE 11394		<i>oppF</i>	1037408	1038349	1038263			
ΦNE 10397	SAV0990		1038368	1040023	1038541	+		hypothetical protein
ΦNE 10486			1038368	1040023	1038654			
ΦNE 02040			1038368	1040023	1038798			
ΦNE 08760			1038368	1040023	1039040			
ΦNE 09596			1038368	1040023	1039135			
ΦNE 06703			1038368	1040023	1039910			
ΦNE 12419			1038368	1040023	1039969			
ΦNE 11494			1038368	1040023	1039976			
ΦNE 00303	SAV0991		1040235	1041950	1040382	+		hypothetical protein
ΦNE 03536			1040235	1041950	1040428			
ΦNE 10854			1040235	1041950	1041368			
ΦNE 06577	SAV0992		1042001	1042987	1042242	+		oligopeptide ABC transporter ATP-binding protein homologue
ΦNE 01951			1042001	1042987	1042753			
ΦNE 05621	SAV0993	<i>appF</i>	1042990	1043970	1043347	+		oligopeptide transport system ATP-binding protein AppF homologue
ΦNE 03178		<i>appF</i>	1042990	1043970	1043416			
ΦNE 04918		<i>appF</i>	1042990	1043970	1043435			
ΦNE 05606		<i>appF</i>	1042990	1043970	1043530			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 13365		<i>appF</i>	1042990	1043970	1043614			
ΦNE 04720		<i>appF</i>	1042990	1043970	1043638			
ΦNE 00272		<i>appF</i>	1042990	1043970	1043650			
ΦNE 03960		<i>appF</i>	1042990	1043970	1043686			
ΦNE 01992		<i>appF</i>	1042990	1043970	1043777			
ΦNE 06455	SAV0994	<i>oppB</i>	1043963	1044925	1043982	+		probable oligopeptide transport system permease protein
ΦNE 13513		<i>oppB</i>	1043963	1044925	1044185			
ΦNE 14170		<i>oppB</i>	1043963	1044925	1044185			
ΦNE 03876		<i>oppB</i>	1043963	1044925	1044292			
ΦNE 14776		<i>oppB</i>	1043963	1044925	1044373			
ΦNE 03912		<i>oppB</i>	1043963	1044925	1044514			
ΦNE 08776		<i>oppB</i>	1043963	1044925	1044800			
ΦNE 10014		<i>oppB</i>	1043963	1044925	1044893			
ΦNE 10629	SAV0995		1044937	1045818	1045409	+		hypothetical protein
ΦNE 11596			1044937	1045818	1045462			
ΦNE 05436	SAV0998		1047909	1408628	1047961	+		hypothetical protein
ΦNE 00680			1047909	1408628	1048424			
ΦNE 03907	SAV1000		1049783	1051591	1049781	+	*	thimet oligopeptidase homologue
ΦNE 04804			1049783	1051591	1049817			
ΦNE 13731			1049783	1051591	1050013			
ΦNE 11452			1049783	1051591	1050400			
ΦNE 11270			1049783	1051591	1050462			
ΦNE 12448			1049783	1051591	1050689			
ΦNE 08998			1049783	1051591	1050723			
ΦNE 13237			1049783	1051591	1050924			
ΦNE 00315			1049783	1051591	1050944			
ΦNE 05368	SAV1001	<i>yjbM</i>	1052051	1052605	1052187	-		GTP pyrophosphokinase
ΦNE 06682	SAV1002		1052541	1052867	1052612	-		conserved hypothetical protein
ΦNE 07348	SAV1004		1053353	1053946	1053766	-		conserved hypothetical protein
ΦNE 02696			1053353	1053946	1053824			
ΦNE 11970			1053353	1053946	1053955		*	
ΦNE 04841	SAV1008		1055954	1056808	1056345	+		conserved hypothetical protein
ΦNE 06475			1055954	1056808	1056609			
ΦNE 11935	SAV1009		1056829	1058214	1057061	+		hypothetical protein
ΦNE 04961			1056829	1058214	1057110			
ΦNE 12106			1056829	1058214	1057284			
ΦNE 11226			1056829	1058214	1057441			
ΦNE 11218			1056829	1058214	1057451			
ΦNE 02703			1056829	1058214	1058165			
ΦNE 10401	SAV1010		1058224	1060068	1058362	+		Na <sup>+</sup> /H <sup>+</sup> antiporter homologue
ΦNE 00142			1058224	1060068	1058581			
ΦNE 12609			1058224	1060068	1058810			
ΦNE 15202			1058224	1060068	1058847			
ΦNE 01921			1058224	1060068	1059508			
ΦNE 13330			1058224	1060068	1059881			
ΦNE 10818			1058224	1060068	1059882			
ΦNE 14708	SAV1012		1061313	1062398	1061585	-		conserved hypothetical protein

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 14573			1061313	1062398	1061618			
ΦNE 09644			1061313	1062398	1061637			
ΦNE 00126			1061313	1062398	1061710			
ΦNE 07981			1061313	1062398	1061842			
ΦNE 13832	SAV1013		1062803	1064308	1062802	+	*	hypothetical protein
ΦNE 11732			1062803	1064308	1063340			
ΦNE 02794			1062803	1064308	1063387			
ΦNE 15262			1062803	1064308	1063696			
ΦNE 14646			1062803	1064308	1063810			
ΦNE 10663			1062803	1064308	1064148			
ΦNE 08774	SAV1014		1064453	1065211	1064563	+		conserved hypothetical protein
ΦNE 08458			1064453	1065211	1065088			
ΦNE 06998	SAV1019		1070277	1070528	1070510	+		hypothetical protein
ΦNE 11246			1070277	1070528	1070537		*	
ΦNE 04654	SAV1021		1070918	1072135	1070988	+		peptide chain release factor 3
ΦNE 13507			1070918	1072135	1071005			
ΦNE 12678			1070918	1072135	1071655			
ΦNE 12188			1070918	1072135	1071656			
ΦNE 08059			1070918	1072135	1071714			
ΦNE 06388			1070918	1072135	1071838			
ΦNE 12561	SAV1023	<i>htrA</i>	1073474	1075783	1074247	+		serine protease HtrA
ΦNE 13714		<i>htrA</i>	1073474	1075783	1074690			
ΦNE 09232		<i>htrA</i>	1073474	1075783	1074783			
ΦNE 04400		<i>htrA</i>	1073474	1075783	1074999			
ΦNE 09181	SAV1024		1075800	1077158	1075859	+		hypothetical protein
ΦNE 13301			1075800	1077158	1075862			
ΦNE 10850			1075800	1077158	1076319			
ΦNE 07776			1075800	1077158	1076464			
ΦNE 02935			1075800	1077158	1076878			
ΦNE 10003			1075800	1077158	1077128			
ΦNE 14045	SAV1025		1077294	1078808	1077349	+		hypothetical protein
ΦNE 07756			1077294	1078808	1077821			
ΦNE 05509			1077294	1078808	1078181			
ΦNE 12367			1077294	1078808	1078334			
ΦNE 11551			1077294	1078808	1078335			
ΦNE 07277			1077294	1078808	1078468			
ΦNE 05273			1077294	1078808	1078471			
ΦNE 07536			1077294	1078808	1078510			
ΦNE 10599			1077294	1078808	1078657			
ΦNE 15349			1077294	1078808	1078718			
ΦNE 03801	SAV1028		1080372	1081358	1080677	-		lipoate-protein ligase homolog
ΦNE 11919			1080372	1081358	1080742			
ΦNE 10696	SAV1029		1081557	1081733	1081552	+	*	conserved hypothetical protein
ΦNE 00658			1080372	1081358	1081555		*	
ΦNE 13251	SAV1030		1081748	1082350	1081818	+		hypothetical protein
ΦNE 04348			1081748	1082350	1081853			
ΦNE 06826			1081748	1082350	1081863			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 14485			1081748	1082350	1081967			
ΦNE 02390			1081748	1082350	1082193			
ΦNE 12523			1081748	1082350	1082291			
ΦNE 02382			1081748	1082350	1082324			
ΦNE 07020			1081748	1082350	1082327			
ΦNE 05080	SAV1031		1082559	1082720	1082588	+		hypothetical protein
ΦNE 02673	SAV1032		1083377	1083649	1083634	+		hypothetical protein
ΦNE 00554	SAV1033		1083693	1085657	1083753	+		hypothetical protein
ΦNE 14601			1083693	1085657	1083760			
ΦNE 11250			1083693	1085657	1083942			
ΦNE 02898			1083693	1085657	1083943			
ΦNE 04931			1083693	1085657	1083943			
ΦNE 12762			1083693	1085657	1084131			
ΦNE 09504			1083693	1085657	1084389			
ΦNE 10255			1083693	1085657	1084518			
ΦNE 13829			1083693	1085657	1085122			
ΦNE 01790			1083693	1085657	1085125			
ΦNE 13563			1083693	1085657	1085309			
ΦNE 08413			1083693	1085657	1085400			
ΦNE 05363			1083693	1085657	1085499			
ΦNE 06660			1083693	1085657	1085500			
ΦNE 13234	SAV1034		1085660	1085980	1085945	+		conserved hypothetical protein
ΦNE 03633	SAV1035		1085977	1086618	1086113	+		conserved hypothetical protein
ΦNE 13696	SAV1037		1087363	1087719	1087706	-		conserved hypothetical protein
ΦNE 13696			1087363	1087719	1087706			
ΦNE 07906	SAV1038		1088207	1089166	1088926	+		hypothetical protein
ΦNE 00261	SAV1039		1089407	1089622	1089571	-		hypothetical protein
ΦNE 03175			1089407	1089622	1089612			
ΦNE 05328	SAV1040		1089787	1090338	1089982	+		conserved hypothetical protein
ΦNE 12607			1089787	1090338	1090002			
ΦNE 03688			1089787	1090338	1090205			
ΦNE 11267	SAV1043	<i>menD</i>	1092858	1094531	1093227	+		menaquinone biosynthesis protein
ΦNE 08028	SAV1044		1094518	1095321	1094882	+		hypothetical protein
ΦNE 09687			1094518	1095321	1095210			
ΦNE 07533			1094518	1095321	1095216			
ΦNE 12636	SAV1046	<i>sspC</i>	1096373	1096702	1096475	-		cysteine protease
ΦNE 04732		<i>sspC</i>	1096373	1096702	1096648			
ΦNE 01572	SAV1047	<i>sspB</i>	1096740	1097921	1096796	-		cysteine protease precursor
ΦNE 10512		<i>sspB</i>	1096740	1097921	1097641			
ΦNE 13070	SAV1048	<i>sspA</i>	1098003	1099031	1098494	-		serine protease
ΦNE 03465	SAV1049		1099559	1100713	1099837	-		HisC homolog
ΦNE 09873			1099559	1100713	1099935			
ΦNE 12250			1099559	1100713	1100562			
ΦNE 13484	SAV1050		1100909	1101919	1101113	-		conserved hypothetical protein
ΦNE 13489			1100909	1101919	1101113			
ΦNE 02963			1100909	1101919	1101137			
ΦNE 08146			1100909	1101919	1101216			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 12951			1100909	1101919	1101384			
ΦNE 02744			1100909	1101919	1101716			
ΦNE 12102	SAV1052	<i>truncated-atl</i>	1102698	1103504	1102803	-		partial autolysin
ΦNE 12110		<i>truncated-atl</i>	1102698	1103504	1102803			
ΦNE 12112		<i>truncated-atl</i>	1102698	1103504	1102803			
ΦNE 12121		<i>truncated-atl</i>	1102698	1103504	1102803			
ΦNE 12103		<i>truncated-atl</i>	1102698	1103504	1102805			
ΦNE 07710		<i>truncated-atl</i>	1102698	1103504	1102903			
ΦNE 06238		<i>truncated-atl</i>	1102698	1103504	1103419			
ΦNE 03732	SAV1053	<i>atl</i>	1103624	1106455	1104246	-		autolysin
ΦNE 11530		<i>atl</i>	1103624	1106455	1104698			
ΦNE 10038		<i>atl</i>	1103624	1106455	1105626			
ΦNE 04043		<i>atl</i>	1103624	1106455	1105876			
ΦNE 04970		<i>atl</i>	1103624	1106455	1106091			
ΦNE 06233	SAV1054		1106662	1107096	1106723	-		conserved hypothetical protein
ΦNE 10201			1106662	1107096	1107031			
ΦNE 10442	SAV1057	<i>fmt</i>	1109437	1110630	1109757	+		autolysis and methicillin resistant-related protein
ΦNE 06459		<i>fmt</i>	1109437	1110630	1109972			
ΦNE 13704		<i>fmt</i>	1109437	1110630	1110340			
ΦNE 05261		<i>fmt</i>	1109437	1110630	1110435			
ΦNE 02055	SAV1060	<i>qoxB</i>	1112049	1114037	1112432	-		Quinol oxidase polypeptide I
ΦNE 02302		<i>qoxB</i>	1112049	1114037	1112818			
ΦNE 00741	SAV1062		1115708	1116025	1115721	-		hypothetical protein
ΦNE 05543			1115708	1116025	1115726			
ΦNE 02380	SAV1064		1117950	1118432	1118021	+		hypothetical protein
ΦNE 14653			1117950	1118432	1118164			
ΦNE 05091	SAV1065	<i>purK</i>	1118419	1119543	1118592	+		phosphoribosylaminoimidazole carboxylase carbon dioxide-fixation chain PurK homolog
ΦNE 04806		<i>purK</i>	1118419	1119543	1118948			
ΦNE 02006		<i>purK</i>	1118419	1119543	1119008			
ΦNE 12746		<i>purK</i>	1118419	1119543	1119425			
ΦNE 02393		<i>purK</i>	1118419	1119543	1119496			
ΦNE 03769		<i>purK</i>	1118419	1119543	1119515			
ΦNE 02924	SAV1066	<i>purC</i>	1119547	1120251	1119556	+		phosphoribosylaminoimidazolesuccinocarboxamide synthetase homolog
ΦNE 06530		<i>purC</i>	1119547	1120251	1119556			
ΦNE 01626		<i>purC</i>	1119547	1120251	1119707			
ΦNE 08758		<i>purC</i>	1119547	1120251	1120043			
ΦNE 01946		<i>purC</i>	1119547	1120251	1120127			
ΦNE 07718		<i>purC</i>	1119547	1120251	1120180			
ΦNE 02602		<i>purC</i>	1119547	1120251	1120181			
ΦNE 12894	SAV1067		1120251	1120514	1120335	+		conserved hypothetical protein
ΦNE 05399	SAV1068	<i>purQ</i>	1120516	1121187	1120616	+		phosphoribosylformylglycinamide synthase I
ΦNE 06147		<i>purQ</i>	1120516	1121187	1121074			
ΦNE 02002	SAV1069	<i>purL</i>	1121180	1123369	1122317	+		phosphoribosylformylglycinamide synthetase
ΦNE 08158		<i>purL</i>	1121180	1123369	1122385			
ΦNE 05314		<i>purL</i>	1121180	1123369	1122420			
ΦNE 10940		<i>purL</i>	1121180	1123369	1122429			
ΦNE 07153		<i>purL</i>	1121180	1123369	1122782			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 03227		<i>purL</i>	1121180	1123369	1123314			
ΦNE 09570		<i>purL</i>	1121180	1123369	1123328			
ΦNE 04992	SAV1070	<i>purF</i>	1123348	1124832	1123425	+		phosphoribosylpyrophosphate amidotransferase
ΦNE 12566		<i>purF</i>	1123348	1124832	1123425			
ΦNE 03038		<i>purF</i>	1123348	1124832	1123428			
ΦNE 13190		<i>purF</i>	1123348	1124832	1124030			
ΦNE 09228		<i>purF</i>	1123348	1124832	1124063			
ΦNE 05294		<i>purF</i>	1123348	1124832	1124102			
ΦNE 03419		<i>purF</i>	1123348	1124832	1124321			
ΦNE 10821		<i>purF</i>	1123348	1124832	1124641			
ΦNE 00869		<i>purF</i>	1123348	1124832	1124676			
ΦNE 06381	SAV1071	<i>purM</i>	1124825	1125853	1125171	+		phosphoribosylformylglycinamide cyclo-ligase
ΦNE 03863		<i>purM</i>	1124825	1125853	1125468			
ΦNE 07785	SAV1072	<i>purN</i>	1125856	1126422	1126030	+		phosphoribosylglycinamide formyltransferase
ΦNE 07721		<i>purN</i>	1125856	1126422	1126066			
ΦNE 12649	SAV1073	<i>purH</i>	1126434	1127915	1126431	+	*	bifunctional purine biosynthesis protein
ΦNE 04103		<i>purH</i>	1126434	1127915	1126528			
ΦNE 10455		<i>purH</i>	1126434	1127915	1126546			
ΦNE 11708		<i>purH</i>	1126434	1127915	1126710			
ΦNE 02356		<i>purH</i>	1126434	1127915	1126902			
ΦNE 02573		<i>purH</i>	1126434	1127915	1126930			
ΦNE 02443		<i>purH</i>	1126434	1127915	1127238			
ΦNE 02394		<i>purH</i>	1126434	1127915	1127394			
ΦNE 10721	SAV1074	<i>purD</i>	1128045	1129184	1128409	+		phosphoribosylamine-glycine ligase
ΦNE 09084		<i>purD</i>	1128045	1129184	1128571			
ΦNE 03896		<i>purD</i>	1128045	1129184	1128966			
ΦNE 06507		<i>purD</i>	1128045	1129184	1128966			
ΦNE 11668	SAV1075		1129452	1130258	1129567	-		conserved hypothetical protein
ΦNE 12839			1129452	1130258	1129682			
ΦNE 12178			1129452	1130258	1129685			
ΦNE 03789			1129452	1130258	1130162			
ΦNE 06360			1129452	1130258	1130209			
ΦNE 11127	SAV1076		1130251	1131651	1130672	-		hypothetical protein
ΦNE 12840			1130251	1131651	1130992			
ΦNE 05649			1130251	1131651	1131043			
ΦNE 13746	SAV1077		1131666	1132241	1131846	-		conserved hypothetical protein
ΦNE 07237	SAV1081		1135082	1136254	1135421	+		conserved hypothetical protein
ΦNE 12731			1135082	1136254	1135935			
ΦNE 00570			1135082	1136254	1136066			
ΦNE 03266			1135082	1136254	1136089			
ΦNE 09129			1135082	1136254	1136115			
ΦNE 00870	SAV1084	<i>ptsI</i>	1137273	1138991	1137354	+		phosphoenolpyruvate-protein phosphatase
ΦNE 13743	SAV1086		1139659	1141020	1139801	+		cytochrome D ubiquinol oxidase subunit 1 homolog
ΦNE 07264			1139659	1141020	1140004			
ΦNE 14450			1139659	1141020	1140055			
ΦNE 06439			1139659	1141020	1140161			
ΦNE 14445			1139659	1141020	1140548			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 10388			1139659	1141020	1140997			
ΦNE 07732			1139659	1141020	1141027		*	
ΦNE 07732	SAV1087		1141017	1142036	1141027	+		cytochrome D ubiquinol oxidase subunit II homolog
ΦNE 08761			1141017	1142036	1141414			
ΦNE 13858			1141017	1142036	1141422			
ΦNE 13642			1141017	1142036	1141426			
ΦNE 02588			1141017	1142036	1141444			
ΦNE 10071			1141017	1142036	1141665			
ΦNE 09898			1141017	1142036	1141671			
ΦNE 07272			1141017	1142036	1141901			
ΦNE 09917	SAV1088		1142169	1142831	1142405	+		conserved hypothetical protein
ΦNE 11316			1142169	1142831	1142689			
ΦNE 01837	SAV1089		1143077	1144774	1143081	-		conserved hypothetical protein
ΦNE 01838			1143077	1144774	1143081			
ΦNE 06252	SAV1092		1146390	1147016	1146420	+		conserved hypothetical protein
ΦNE 04761			1146390	1147016	1146826			
ΦNE 08841			1146390	1147016	1146899			
ΦNE 02453			1146390	1147016	1146952			
ΦNE 10868	SAV1094	<i>phdB</i>	1148303	1149280	1148326	+		pyruvate dehydrogenase E1 component beta subunit
ΦNE 14671	SAV1096	<i>pdhD</i>	1150667	1152073	1151889	+		dihydrolipoamide dehydrogenase component of pyruvate dehydrogenase E3
ΦNE 04312	SAV1098		1152660	1153199	1152673	+		conserved hypothetical protein
ΦNE 11380			1152660	1153199	1153045			
ΦNE 08945			1152660	1153199	1153174			
ΦNE 11872	SAV1100	<i>potB</i>	1154299	1155096	1154309	+		spermidine/putrescine ABC transporter homolog
ΦNE 13250		<i>potB</i>	1154299	1155096	1154351			
ΦNE 11647		<i>potB</i>	1154299	1155096	1154357			
ΦNE 12516		<i>potB</i>	1154299	1155096	1155032			
ΦNE 12133	SAV1101	<i>potC</i>	1155102	1155911	1155531	+		spermidine/putrescine ABC transporter homolog
ΦNE 13079	SAV1102	<i>potD</i>	1155911	1156984	1155989	+		spermidine/putrescine-binding protein precursor homolog
ΦNE 02669		<i>potD</i>	1155911	1156984	1156344			
ΦNE 06164	SAV1104		1158360	1158779	1158409	+		hypothetical protein
ΦNE 06070	SAV1105		1158858	1160210	1159058	-		hypothetical protein
ΦNE 03662			1158858	1160210	1159882			
ΦNE 08986	SAV1108		1162146	1162337	1162144	-	*	hypothetical protein
ΦNE 12645			1162146	1162337	1162219			
ΦNE 02729	SAV1109		1162439	1164286	1162970	+		GTP-binding elongation factor homologue
ΦNE 04029			1162439	1164286	1163027			
ΦNE 08961			1162439	1164286	1163361			
ΦNE 12684			1162439	1164286	1163565			
ΦNE 09092			1162439	1164286	1163754			
ΦNE 03460			1162439	1164286	1163975			
ΦNE 11571			1162439	1164286	1164012			
ΦNE 06499	SAV1110		1164426	1164593	1164481	-		conserved hypothetical protein
ΦNE 04166	SAV1111		1164595	1165077	1164615	-		conserved hypothetical protein
ΦNE 06069			1164595	1165077	1164615			
ΦNE 07725			1164595	1165077	1164720			
ΦNE 01941			1164595	1165077	1164732			



Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 09768	SAV1112		1165218	1165493	1165303	+		conserved hypothetical protein
ΦNE 12949	SAV1114	<i>pycA</i>	1167587	1171039	1167639	+		pyruvate carboxylase
ΦNE 03965		<i>pycA</i>	1167587	1171039	1168983			
ΦNE 04475		<i>pycA</i>	1167587	1171039	1169007			
ΦNE 02885		<i>pycA</i>	1167587	1171039	1169344			
ΦNE 07821		<i>pycA</i>	1167587	1171039	1169483			
ΦNE 03778		<i>pycA</i>	1167587	1171039	1169690			
ΦNE 06263		<i>pycA</i>	1167587	1171039	1169840			
ΦNE 06749		<i>pycA</i>	1167587	1171039	1170523			
ΦNE 14423	SAV1115		1171179	1172090	1171447	-		hypothetical protein
ΦNE 02477	SAV1117		1173466	1173927	1173740	+		conserved hypothetical protein
ΦNE 00441	SAV1118		1174254	1175291	1174272	+		conserved hypothetical protein
ΦNE 09283	SAV1121		1175802	1176728	1175912	-		hypothetical protein
ΦNE 01940			1175802	1176728	1176202			
ΦNE 04298			1175802	1176728	1176307			
ΦNE 03807			1175802	1176728	1176643			
ΦNE 04820	SAV1122		1176967	1177221	1176992	+		conserved hypothetical protein
ΦNE 05249			1176967	1177221	1176994			
ΦNE 07870			1176967	1177221	1177184			
ΦNE 12232	SAV1123		1177224	1177613	1177529	-		conserved hypothetical protein
ΦNE 07969	SAV1126		1178771	1179910	1179699	-		conserved hypothetical protein
ΦNE 11795			1178771	1179910	1179764			
ΦNE 06230	SAV1127		1180037	1180594	1180224	+		conserved hypothetical protein
ΦNE 11478			1180037	1180594	1180315			
ΦNE 06622			1180037	1180594	1180356			
ΦNE 10902			1180037	1180594	1180577			
ΦNE 06127	SAV1129		1181001	1182938	1181169	-		conserved hypothetical protein
ΦNE 02671			1181001	1182938	1181660			
ΦNE 06572			1181001	1182938	1181698			
ΦNE 05059			1181001	1182938	1181880			
ΦNE 04990			1181001	1182938	1181892			
ΦNE 12075			1181001	1182938	1182881			
ΦNE 12628	SAV1130		1183141	1184193	1183685	-		cell surface protein
ΦNE 01954			1183141	1184193	1184167			
ΦNE 09284	SAV1131		1184402	1185085	1184758	+		conserved hypothetical protein
ΦNE 09597			1184402	1185085	1185000			
ΦNE 12630			1184402	1185085	1185001			
ΦNE 03054	SAV1132		1185085	1186161	1185121	+		conserved hypothetical protein
ΦNE 04382			1185085	1186161	1185241			
ΦNE 03458	SAV1133		1186158	1187036	1186708	+		hypothetical protein
ΦNE 13865			1186158	1187036	1186776			
ΦNE 12849	SAV1134		1187193	1188014	1187628	+		hypothetical protein
ΦNE 03811	SAV1135		1188076	1188810	1188101	+		conserved hypothetical protein
ΦNE 01454			1188076	1188810	1188401			
ΦNE 11757			1188076	1188810	1188615			
ΦNE 06585	SAV1136		1188838	1189152	1188874	+		conserved hypothetical protein
ΦNE 13688			1188838	1189152	1189129			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 05067			1188838	1189152	1189143			
ΦNE 04124	SAV1137		1189536	1190276	1190143	+		hypothetical protein
ΦNE 06200	SAV1142		1196123	1196644	1196202	+		conserved hypothetical protein
ΦNE 11954			1196123	1196644	1196204			
ΦNE 04007			1196123	1196644	1196408			
ΦNE 11871	SAV1143		1196717	1198429	1196764	+		DNA-dependent DNA polymerase beta chain
ΦNE 11643			1196717	1198429	1197614			
ΦNE 00668			1196717	1198429	1197690			
ΦNE 06925			1196717	1198429	1197704			
ΦNE 05571			1196717	1198429	1197903			
ΦNE 05516			1196717	1198429	1197947			
ΦNE 03259			1196717	1198429	1198100			
ΦNE 02361			1196717	1198429	1198392			
ΦNE 09072	SAV1144	<i>mutS2</i>	1198439	1200787	1198756	+		MutS-like protein
ΦNE 05614		<i>mutS2</i>	1198439	1200787	1199207			
ΦNE 06846		<i>mutS2</i>	1198439	1200787	1199667			
ΦNE 06694		<i>mutS2</i>	1198439	1200787	1199670			
ΦNE 14509		<i>mutS2</i>	1198439	1200787	1200027			
ΦNE 10908		<i>mutS2</i>	1198439	1200787	1200210			
ΦNE 05356	SAV1146	<i>uvrC</i>	1201598	1203379	1201647	+		excinuclease ABC subunit C
ΦNE 04650		<i>uvrC</i>	1201598	1203379	1201693			
ΦNE 01981		<i>uvrC</i>	1201598	1203379	1201787			
ΦNE 12597		<i>uvrC</i>	1201598	1203379	1201873			
ΦNE 05099		<i>uvrC</i>	1201598	1203379	1202033			
ΦNE 03025		<i>uvrC</i>	1201598	1203379	1203080			
ΦNE 06914	SAV1147	<i>sdhC</i>	1203703	1204317	1203326	+	*	succinate dehydrogenase cytochrome b-558
ΦNE 02502		<i>sdhC</i>	1203703	1204317	1203845			
ΦNE 10669		<i>sdhC</i>	1203703	1204317	1203886			
ΦNE 09169	SAV1148	<i>sdhA</i>	1204369	1206135	1204726	+		succinate dehydrogenase flavoprotein subunit
ΦNE 12329		<i>sdhA</i>	1204369	1206135	1204774			
ΦNE 12873		<i>sdhA</i>	1204369	1206135	1204777			
ΦNE 02471		<i>sdhA</i>	1204369	1206135	1205102			
ΦNE 01442		<i>sdhA</i>	1204369	1206135	1205296			
ΦNE 07394	SAV1150	<i>sdhB</i>	1206150	1206455	1206402	+		iron-sulphur subunit of succinate dehydrogenase
ΦNE 04085	SAV1150	<i>sdhB</i>	1206359	1206949	1206782	+		iron-sulphur subunit of succinate dehydrogenase
ΦNE 02844	SAV1152		1207997	1208584	1208243	+		conserved hypothetical protein
ΦNE 11877	SAV1153		1208577	1209080	1208843	+		conserved hypothetical protein
ΦNE 05369			1208577	1209080	1208896			
ΦNE 13803	SAV1157		1211338	1211844	1211576	+		hypothetical protein
ΦNE 03597	SAV1158		1212104	1212601	1212282	+		hypothetical protein
ΦNE 11961	SAV1159		1212751	1213101	1212934	+		hypothetical protein
ΦNE 11602	SAV1163		1216904	1217863	1217039	-		alpha-hemolysin precursor
ΦNE 02140			1216904	1217863	1217218			
ΦNE 11832			1216904	1217863	1217451			
ΦNE 11217			1216904	1217863	1217666			
ΦNE 11568			1216904	1217863	1217751			
ΦNE 01440	SAV1166		1219400	1220116	1219631	-		hypothetical protein

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 10229	SAV1168		1221044	1221769	1221223	-		hypothetical protein
ΦNE 11955			1221044	1221769	1221552			
ΦNE 11698			1221044	1221769	1221633			
ΦNE 05014	SAV1169	<i>argF</i>	1222207	1223208	1222304	+		ornithine carbamoyltransferase
ΦNE 05018		<i>argF</i>	1222207	1223208	1222304			
ΦNE 05048		<i>argF</i>	1222207	1223208	1222304			
ΦNE 05050		<i>argF</i>	1222207	1223208	1222304			
ΦNE 04450		<i>argF</i>	1222207	1223208	1222683			
ΦNE 12097		<i>argF</i>	1222207	1223208	1222967			
ΦNE 12598	SAV1170		1223231	1224163	1223473	+		hypothetical protein
ΦNE 11736			1223231	1224163	1223799			
ΦNE 11300			1223231	1224163	1223852			
ΦNE 12554	SAV1171		1224335	1225891	1224728	+		conserved hypothetical protein
ΦNE 04829			1224335	1225891	1225356			
ΦNE 04830			1224335	1225891	1225356			
ΦNE 06689			1224335	1225891	1225875			
ΦNE 04507	SAV1172		1226198	1226425	1226286	+		hypothetical protein
ΦNE 07029	SAV1173		1226731	1227678	1226742	-		conserved hypothetical protein
ΦNE 00372			1226731	1227678	1226763			
ΦNE 06420			1226731	1227678	1227038			
ΦNE 06204			1226731	1227678	1227064			
ΦNE 12273			1226731	1227678	1227067			
ΦNE 11641	SAV1174		1227927	1228115	1227948	+		hypothetical protein
ΦNE 07267			1227927	1228115	1227976			
ΦNE 08529			1227927	1228115	1227976			
ΦNE 08918	SAV1175		1229478	1230164	1229836	+		conserved hypothetical protein
ΦNE 08919			1229478	1230164	1229836			
ΦNE 08920			1229478	1230164	1229836			
ΦNE 08928			1229478	1230164	1229836			
ΦNE 08929			1229478	1230164	1229836			
ΦNE 08931			1229478	1230164	1229836			
ΦNE 08932			1229478	1230164	1229836			
ΦNE 08933			1229478	1230164	1229836			
ΦNE 08934			1229478	1230164	1229836			
ΦNE 08935			1229478	1230164	1229836			
ΦNE 08936			1229478	1230164	1229836			
ΦNE 08938			1229478	1230164	1229836			
ΦNE 08939			1229478	1230164	1229836			
ΦNE 08940			1229478	1230164	1229836			
ΦNE 08941			1229478	1230164	1229836			
ΦNE 08943			1229478	1230164	1229836			
ΦNE 08944			1229478	1230164	1229836			
ΦNE 08946			1229478	1230164	1229836			
ΦNE 08947			1229478	1230164	1229836			
ΦNE 08949			1229478	1230164	1229836			
ΦNE 08950			1229478	1230164	1229836			
ΦNE 08951			1229478	1230164	1229836			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 08952			1229478	1230164	1229836			
ΦNE 08954			1229478	1230164	1229836			
ΦNE 08955			1229478	1230164	1229836			
ΦNE 08956			1229478	1230164	1229836			
ΦNE 08957			1229478	1230164	1229836			
ΦNE 08958			1229478	1230164	1229836			
ΦNE 08959			1229478	1230164	1229836			
ΦNE 09081			1229478	1230164	1229836			
ΦNE 09082			1229478	1230164	1229836			
ΦNE 09083			1229478	1230164	1229836			
ΦNE 09091			1229478	1230164	1229836			
ΦNE 09093			1229478	1230164	1229836			
ΦNE 09095			1229478	1230164	1229836			
ΦNE 09096			1229478	1230164	1229836			
ΦNE 09097			1229478	1230164	1229836			
ΦNE 09100			1229478	1230164	1229836			
ΦNE 09101			1229478	1230164	1229836			
ΦNE 09102			1229478	1230164	1229836			
ΦNE 09103			1229478	1230164	1229836			
ΦNE 09104			1229478	1230164	1229836			
ΦNE 09105			1229478	1230164	1229836			
ΦNE 09106			1229478	1230164	1229836			
ΦNE 09109			1229478	1230164	1229836			
ΦNE 06915			1229478	1230164	1230042			
ΦNE 07410	SAV1176		1230268	1230714	1230612	-		conserved hypothetical protein
ΦNE 10530			1230268	1230714	1230726		*	
ΦNE 12322	SAV1177		1230909	1232522	1231486	+		conserved hypothetical protein
ΦNE 07527			1230909	1232522	1231768			
ΦNE 13027			1230909	1232522	1231838			
ΦNE 04044			1230909	1232522	1231995			
ΦNE 10949	SAV1190		1245659	1245949	1245660	+		conserved hypothetical protein
ΦNE 14291	SAV1191		1246200	1246838	1246431	+		hypothetical protein
ΦNE 12315			1246200	1246838	1246830			
ΦNE 00715	SAV1194		1250744	1251541	1251295	+		conserved hypothetical protein
ΦNE 00857			1250744	1251541	1251433			
ΦNE 02459	SAV1196	<i>lsp</i>	1252365	1252856	1252794	+		lipoprotein signal peptidase
ΦNE 00656	SAV1201	<i>pyrC</i>	1257152	1258426	1257410	+		dihydroorotase
ΦNE 02980		<i>pyrC</i>	1257152	1258426	1258344			
ΦNE 00609		<i>pyrC</i>	1257152	1258426	1258423			
ΦNE 11122	SAV1202	<i>pyrAA</i>	1258428	1259528	1259074	+		carbamoyl-phosphate synthase small chain
ΦNE 00678		<i>pyrAA</i>	1258428	1259528	1259466			
ΦNE 02887	SAV1203	<i>pyrAB</i>	1259521	1262694	1259715	+		carbamoyl-phosphate synthase large chain
ΦNE 04659		<i>pyrAB</i>	1259521	1262694	1259715			
ΦNE 05220		<i>pyrAB</i>	1259521	1262694	1259715			
ΦNE 03401		<i>pyrAB</i>	1259521	1262694	1260071			
ΦNE 04640		<i>pyrAB</i>	1259521	1262694	1260211			
ΦNE 02298		<i>pyrAB</i>	1259521	1262694	1260215			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 13691		<i>pyrAB</i>	1259521	1262694	1260327			
ΦNE 10041		<i>pyrAB</i>	1259521	1262694	1260470			
ΦNE 05726		<i>pyrAB</i>	1259521	1262694	1261633			
ΦNE 05191		<i>pyrAB</i>	1259521	1262694	1261835			
ΦNE 08897		<i>pyrAB</i>	1259521	1262694	1262037			
ΦNE 12249	SAV1204	<i>pyrF</i>	1262804	1263496	1262800	+	*	orotidine-5-phosphate decarboxylase
ΦNE 02904	SAV1205	<i>pyrE</i>	1263496	1264107	1263564	+		orotate phosphoribosyltransferase
ΦNE 12091	SAV1206		1264137	1264349	1264167	+		hypothetical protein
ΦNE 03984			1264137	1264349	1264282			
ΦNE 04888	SAV1207		1264786	1265187	1264966	+		conserved hypothetical protein
ΦNE 05132	SAV1208		1265450	1267147	1265761	-		hypothetical protein
ΦNE 00463			1265450	1267147	1265800			
ΦNE 04917			1265450	1267147	1265955			
ΦNE 13392			1265450	1267147	1266144			
ΦNE 09798			1265450	1267147	1266753			
ΦNE 09735	SAV1213		1272592	1273545	1273265	+		hypothetical protein
ΦNE 10522			1272592	1273545	1273363			
ΦNE 00197	SAV1217		1275545	1276930	1275792	+		hypothetical protein
ΦNE 00392			1275545	1276930	1275792			
ΦNE 10603			1275545	1276930	1276244			
ΦNE 07201			1275545	1276930	1276466			
ΦNE 00032	SAV1218		1276933	1278027	1276936	+		conserved hypothetical protein
ΦNE 14673	SAV1219		1278034	1278777	1278278	+		conserved hypothetical protein
ΦNE 10712	SAV1220		1278774	1280768	1280320	+		protein kinase
ΦNE 06272			1278774	1280768	1280509			
ΦNE 03940			1278774	1280768	1280550			
ΦNE 12600	SAV1221		1280996	1281871	1281812	+		conserved hypothetical protein
ΦNE 06693	SAV1224	<i>rpmB</i>	1283545	1283733	1283538	-	*	50S ribosomal protein L28
ΦNE 12416		<i>rpmB</i>	1283545	1283733	1283647			
ΦNE 11428		<i>rpmB</i>	1283545	1283733	1283651			
ΦNE 00020	SAV1226		1284565	1286211	1284835	+		conserved hypothetical protein
ΦNE 11173	SAV1227	<i>recG</i>	1286401	1288461	1287281	+		ATP-dependent DNA helicase
ΦNE 10001	SAV1233	<i>rnC</i>	1292657	1293388	1293361	+		RNase III
ΦNE 10529	SAV1234	<i>smc</i>	1293535	1297101	1297053	+		chromosome segregation SMC protein
ΦNE 11999	SAV1240	<i>trmD</i>	1301464	1302201	1302184	+		tRNA-methyltransferase
ΦNE 09294	SAV1241	<i>rplS</i>	1302305	1302655	1302627	+		50S ribosomal protein L19
ΦNE 13189	SAV1242		1302899	1305505	1302963	-		conserved hypothetical protein
ΦNE 00744			1302899	1305505	1303982			
ΦNE 05179			1302899	1305505	1304880			
ΦNE 06465			1302899	1305505	1305335			
ΦNE 06435			1302899	1305505	1305460			
ΦNE 01541	SAV1244	<i>rnhB</i>	1306774	1307541	1306938	+		RNase HII
ΦNE 02806		<i>rnhB</i>	1306774	1307541	1307114			
ΦNE 02853		<i>rnhB</i>	1306774	1307541	1307391			
ΦNE 00594	SAV1247	<i>lytN</i>	1309974	1311092	1310749	+		LytN protein
ΦNE 10497		<i>lytN</i>	1309974	1311092	1310945			
ΦNE 11340	SAV1248	<i>fmhC(eprh)</i>	1311120	1312364	1311487	+		FmhC protein

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 12196		<i>fmhC(eprh)</i>	1311120	1312364	1311812			
ΦNE 11358		<i>fmhC(eprh)</i>	1311120	1312364	1311831			
ΦNE 12808		<i>fmhC(eprh)</i>	1311120	1312364	1311837			
ΦNE 02920		<i>fmhC(eprh)</i>	1311120	1312364	1311865			
ΦNE 12758		<i>fmhC(eprh)</i>	1311120	1312364	1311987			
ΦNE 10449		<i>fmhC(eprh)</i>	1311120	1312364	1312099			
ΦNE 06190	SAV1249		1312537	1313409	1312874	+		hypothetical protein
ΦNE 12222			1312537	1313409	1312917			
ΦNE 09503			1312537	1313409	1313153			
ΦNE 03537	SAV1250		1313589	1315658	1315620	+		DNA topoisomerase I topA homologue
ΦNE 03112			1313589	1315658	1315658			
ΦNE 03407	SAV1251	<i>gid</i>	1315814	1317121	1315967	+		glucose-inhibited division protein gid
ΦNE 01735		<i>gid</i>	1315814	1317121	1316731			
ΦNE 01736		<i>gid</i>	1315814	1317121	1316731			
ΦNE 09425	SAV1270	<i>rbfA</i>	1339660	1340010	1339993	+		ribosome-binding factor A
ΦNE 02315	SAV1271	<i>truB</i>	1340179	1341096	1340184	+		tRNA pseudouridine 5S synthase
ΦNE 13097		<i>truB</i>	1340179	1341096	1340762			
ΦNE 10021	SAV1274	<i>pnpA</i>	1342835	1344931	1343059	+		polyribonucleotide nucleotidyltransferase
ΦNE 05451		<i>pnpA</i>	1342835	1344931	1344453			
ΦNE 12736		<i>pnpA</i>	1342835	1344931	1344491			
ΦNE 05375		<i>pnpA</i>	1342835	1344931	1344627			
ΦNE 04554		<i>pnpA</i>	1342835	1344931	1344748			
ΦNE 10926	SAV1278		1350212	1351477	1350412	+		hypothetical protein
ΦNE 09580			1350212	1351477	1350748			
ΦNE 14030	SAV1279		1351477	1352763	1352044	+		hypothetical protein
ΦNE 04737	SAV1280		1352763	1353467	1352990	+		hypothetical protein
ΦNE 13632			1352763	1353467	1353336			
ΦNE 14742			1352763	1353467	1353336			
ΦNE 14747			1352763	1353467	1353336			
ΦNE 08750	SAV1281		1353572	1354399	1353917	+		conserved hypothetical protein
ΦNE 08622			1353572	1354399	1354117			
ΦNE 01812			1353572	1354399	1354355			
ΦNE 10468	SAV1284	<i>cinA</i>	1355646	1356797	1355941	+		competence-damage inducible protein
ΦNE 06397		<i>cinA</i>	1355646	1356797	1356288			
ΦNE 09773		<i>cinA</i>	1355646	1356797	1356424			
ΦNE 12157		<i>cinA</i>	1355646	1356797	1356458			
ΦNE 07371	SAV1289		1361541	1363301	1362828	+		hypothetical protein
ΦNE 07373			1361541	1363301	1362828			
ΦNE 07375			1361541	1363301	1362828			
ΦNE 07376			1361541	1363301	1362828			
ΦNE 07379			1361541	1363301	1362828			
ΦNE 00206	SAV1292		1364689	1366233	1365344	+		conserved hypothetical protein
ΦNE 09545	SAV1294		1366626	1367117	1366879	+		conserved hypothetical protein
ΦNE 09387			1366626	1367117	1366891			
ΦNE 04775	SAV1296	<i>mutS</i>	1367420	1370039	1367639	+		DNA mismatch repair protein
ΦNE 00866		<i>mutS</i>	1367420	1370039	1367872			
ΦNE 08510		<i>mutS</i>	1367420	1370039	1367953			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 09099		<i>mutS</i>	1367420	1370039	1368125			
ΦNE 12900		<i>mutS</i>	1367420	1370039	1368125			
ΦNE 06111		<i>mutS</i>	1367420	1370039	1368753			
ΦNE 02925		<i>mutS</i>	1367420	1370039	1368850			
ΦNE 06063		<i>mutS</i>	1367420	1370039	1369035			
ΦNE 02609	SAV1297	<i>mutL</i>	1370052	1372061	1370809	+		DNA mismatch repair protein
ΦNE 01512		<i>mutL</i>	1370052	1372061	1370908			
ΦNE 04409		<i>mutL</i>	1370052	1372061	1370928			
ΦNE 13276		<i>mutL</i>	1370052	1372061	1371239			
ΦNE 09150		<i>mutL</i>	1370052	1372061	1371642			
ΦNE 11299		<i>mutL</i>	1370052	1372061	1371814			
ΦNE 00722	SAV1298	<i>glpP</i>	1372076	1372609	1372217	+		glycerol uptake operon antiterminator regulatory protein
ΦNE 06061		<i>glpP</i>	1372076	1372609	1372311			
ΦNE 03936		<i>glpP</i>	1372076	1372609	1372454			
ΦNE 11481	SAV1300	<i>glpF</i>	1373084	1373902	1373099	+		glycerol uptake facilitator
ΦNE 11671		<i>glpF</i>	1373084	1373902	1373099			
ΦNE 10519	SAV1301	<i>glpK</i>	1374031	1375527	1374048	+		glycerol kinase
ΦNE 08840		<i>glpK</i>	1374031	1375527	1374822			
ΦNE 05496		<i>glpK</i>	1374031	1375527	1375475			
ΦNE 02025	SAV1302	<i>glpD</i>	1375637	1377358	1375894	+		aerobic glycerol-3-phosphate dehydrogenase
ΦNE 09995		<i>glpD</i>	1375637	1377358	1376256			
ΦNE 13128		<i>glpD</i>	1375637	1377358	1376580			
ΦNE 13156		<i>glpD</i>	1375637	1377358	1376580			
ΦNE 03791		<i>glpD</i>	1375637	1377358	1376626			
ΦNE 06177		<i>glpD</i>	1375637	1377358	1376647			
ΦNE 06192		<i>glpD</i>	1375637	1377358	1376647			
ΦNE 06197		<i>glpD</i>	1375637	1377358	1376647			
ΦNE 06199		<i>glpD</i>	1375637	1377358	1376647			
ΦNE 14027		<i>glpD</i>	1375637	1377358	1376778			
ΦNE 06537		<i>glpD</i>	1375637	1377358	1377026			
ΦNE 03553		<i>glpD</i>	1375637	1377358	1377286			
ΦNE 09695	SAV1303		1377508	1378422	1378047	+		hypothetical protein
ΦNE 09861			1377508	1378422	1378047			
ΦNE 09845			1377508	1378422	1378102			
ΦNE 06616	SAV1305		1379390	1379623	1379515	+		hypothetical protein
ΦNE 09936	SAV1306	<i>bsaA</i>	1379844	1380320	1379863	-		glutathione peroxidase
ΦNE 09947		<i>bsaA</i>	1379844	1380320	1379863			
ΦNE 10045		<i>bsaA</i>	1379844	1380320	1379863			
ΦNE 12421		<i>bsaA</i>	1379844	1380320	1380158			
ΦNE 01741		<i>bsaA</i>	1379844	1380320	1380256			
ΦNE 04164		<i>bsaA</i>	1379844	1380320	1380263			
ΦNE 11511	SAV1307		1380432	1381670	1380428	+	*	hypothetical protein
ΦNE 00270			1380432	1381670	1380589			
ΦNE 07320			1380432	1381670	1381621			
ΦNE 07044	SAV1308		1381689	1382927	1381830	+		hypothetical protein
ΦNE 02357			1381689	1382927	1382922			
ΦNE 01862	SAV1314		1390138	1390332	1390155	+		hypothetical protein

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 00442			1390138	1390332	1390287			
ΦNE 13465	SAV1315		1390876	1391901	1390898	-		conserved hypothetical protein
ΦNE 03189			1390876	1391901	1391019			
ΦNE 03808			1390876	1391901	1391298			
ΦNE 12629			1390876	1391901	1391394			
ΦNE 11842			1390876	1391901	1391480			
ΦNE 07019			1392389	1393906	1392412			
ΦNE 13732	SAV1317		1392389	1393906	1392510	+		cardiolipin synthetase homolog
ΦNE 00201			1392389	1393906	1392904			
ΦNE 04854	SAV1318		1394090	1394587	1394303	+		ABC transporter homolog
ΦNE 12468			1394090	1394587	1394569			
ΦNE 09053	SAV1319		1394612	1394989	1394776	+		ABC transporter homolog
ΦNE 12683			1394612	1394989	1394961			
ΦNE 12683	SAV1320		1394958	1395689	1394961	+		hypothetical protein
ΦNE 06285			1394958	1395689	1395112			
ΦNE 09497			1394958	1395689	1395570			
ΦNE 06746	SAV1321		1395693	1396784	1395800	+		hypothetical protein
ΦNE 11164			1395693	1396784	1395865			
ΦNE 08492			1395693	1396784	1396199			
ΦNE 01824			1395693	1396784	1396558			
ΦNE 11466	SAV1322		1396781	1397383	1396849	+		hypothetical protein
ΦNE 00021	SAV1323		1397496	1397684	1397665	-		hypothetical protein
ΦNE 03258	SAV1324	<i>nuc</i>	1397823	1398356	1397880	+		thermonuclease
ΦNE 06615		<i>nuc</i>	1397823	1398356	1397880			
ΦNE 12295		<i>nuc</i>	1397823	1398356	1398202			
ΦNE 14502	SAV1326		1399671	1400261	1399714	+		hypothetical protein
ΦNE 12506			1399671	1400261	1399885			
ΦNE 09502			1399671	1400261	1399955			
ΦNE 08589			1399671	1400261	1400029			
ΦNE 11769			1399671	1400261	1400035			
ΦNE 04891			1399671	1400261	1400121			
ΦNE 07790	SAV1327		1400315	1401697	1400366	-		aspartate kinase homolog
ΦNE 13143			1400315	1401697	1401124			
ΦNE 03196			1400315	1401697	1401127			
ΦNE 05492			1400315	1401697	1401128			
ΦNE 11351			1400315	1401697	1401223			
ΦNE 09599			1400315	1401697	1401352			
ΦNE 11942	SAV1328	<i>dhoM</i>	1401888	1403168	1401982	+		homoserine dehydrogenase
ΦNE 12625	SAV1329	<i>thrC</i>	1403174	1404235	1403597	+		threonine synthase
ΦNE 09336	SAV1330	<i>thrB</i>	1404237	1405151	1404938	+		homoserine kinase homolog
ΦNE 11455	SAV1331		1405209	1406012	1405348	+		conserved hypothetical protein
ΦNE 10079			1405209	1406012	1405960			
ΦNE 00210	SAV1332		1406305	1406619	1406361	-		hypothetical protein
ΦNE 03920	SAV1333		1406837	1408291	1407265	-		gamma-aminobutyrate permease
ΦNE 08285			1406837	1408291	1407275			
ΦNE 12837			1406837	1408291	1407499			
ΦNE 07353	SAV1334	<i>katA</i>	1408489	1410012	1409716	+		catalase



Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 12739	SAV1335	<i>rpmG</i>	1410103	1410252	1410230	+		50S ribosomal protein L33
ΦNE 06121	SAV1336	<i>rpsN</i>	1410706	1410975	1410784	+		30S ribosomal protein S14 homolog
ΦNE 10812		<i>rpsN</i>	1410706	1410975	1410914			
ΦNE 10673	SAV1337		1411132	1412109	1411162	+		hypothetical protein
ΦNE 03569			1411132	1412109	1411547			
ΦNE 05206			1411132	1412109	1411713			
ΦNE 13756			1411132	1412109	1411822			
ΦNE 08926			1411132	1412109	1411890			
ΦNE 12890			1411132	1412109	1411964			
ΦNE 05032	SAV1338		1412131	1413147	1412387	+		conserved hypothetical protein
ΦNE 05025			1412131	1413147	1412390			
ΦNE 12269			1412131	1413147	1412484			
ΦNE 06936			1412131	1413147	1412612			
ΦNE 08135			1412131	1413147	1412854			
ΦNE 06117			1412131	1413147	1412867			
ΦNE 04545	SAV1340		1414293	1414526	1414328	+		hypothetical protein
ΦNE 10517	SAV1341		1414663	1414902	1414726	+		conserved hypothetical protein
ΦNE 09392	SAV1344		1417715	1418182	1418148	+		conserved hypothetical protein
ΦNE 05227	SAV1345		1418305	1419426	1418338	+		hypothetical protein
ΦNE 03935			1418305	1419426	1418474			
ΦNE 11156			1418305	1419426	1419070			
ΦNE 13069	SAV1346		1419430	1422459	1419732	+		hypothetical protein
ΦNE 11888			1419430	1422459	1419734			
ΦNE 00220			1419430	1422459	1421693			
ΦNE 00491			1419430	1422459	1421693			
ΦNE 08249			1419430	1422459	1421747			
ΦNE 03758			1419430	1422459	1421901			
ΦNE 07844			1419430	1422459	1422158			
ΦNE 06464	SAV1349	<i>opuD</i>	1423662	1424741	1423937	+		glycine betaine transporter
ΦNE 06752		<i>opuD</i>	1423662	1424741	1424211			
ΦNE 12482		<i>opuD</i>	1423662	1424741	1424713			
ΦNE 14562	SAV1350	<i>citB</i>	1425688	1428393	1425998	+		aconitate hydratase
ΦNE 08221		<i>citB</i>	1425688	1428393	1426027			
ΦNE 07535		<i>citB</i>	1425688	1428393	1426307			
ΦNE 13526		<i>citB</i>	1425688	1428393	1426658			
ΦNE 00263		<i>citB</i>	1425688	1428393	1427455			
ΦNE 12465		<i>citB</i>	1425688	1428393	1427527			
ΦNE 02780		<i>citB</i>	1425688	1428393	1427631			
ΦNE 06317	SAV1351		1428573	1429040	1429017	+		conserved hypothetical protein
ΦNE 11868	SAV1355	<i>parC</i>	1432724	1435126	1434834	+		topoisomerase IV subunit A
ΦNE 09342	SAV1356	<i>alsT</i>	1435376	1436836	1435772	+		amino acid carrier protein
ΦNE 09110		<i>alsT</i>	1435376	1436836	1436084			
ΦNE 11968	SAV1357	<i>glcT</i>	1437336	1438187	1437366	+		transcription antiterminator
ΦNE 11405		<i>glcT</i>	1437336	1438187	1437394			
ΦNE 14381		<i>glcT</i>	1437336	1438187	1437691			
ΦNE 11953	SAV1361	<i>msrA</i>	1442736	1443245	1443044	-		peptide methionine sulfoxide reductase homologue
ΦNE 08767		<i>msrA</i>	1442736	1443245	1443120			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 11797	SAV1362	<i>msrR</i>	1443383	1444366	1443371	+	*	peptide methionine sulfoxide reductase regulator
ΦNE 09419		<i>msrR</i>	1443383	1444366	1443936			
ΦNE 04469	SAV1364		1444787	1446049	1444791	+		hypothetical protein
ΦNE 10415			1444787	1446049	1445427			
ΦNE 10263			1444787	1446049	1445436			
ΦNE 05518			1444787	1446049	1445739			
ΦNE 03640			1444787	1446049	1445778			
ΦNE 09431	SAV1365	<i>tyrA</i>	1446186	1447277	1446275	-		prephenate dehydrogenase
ΦNE 10030		<i>tyrA</i>	1446186	1447277	1446685			
ΦNE 08757		<i>tyrA</i>	1446186	1447277	1447043			
ΦNE 09750		<i>tyrA</i>	1446186	1447277	1447086			
ΦNE 08643		<i>tyrA</i>	1446186	1447277	1447138			
ΦNE 10614	SAV1366		1447442	1448473	1447616	+		hypothetical protein
ΦNE 03998			1447442	1448473	1447944			
ΦNE 05435			1447442	1448473	1448277			
ΦNE 07306			1447442	1448473	1448300			
ΦNE 00553	SAV1367		1448965	1450371	1449180	+		hypothetical protein
ΦNE 11322			1448965	1450371	1449347			
ΦNE 11402			1448965	1450371	1449406			
ΦNE 10864			1448965	1450371	1449474			
ΦNE 00219			1448965	1450371	1449764			
ΦNE 08852			1448965	1450371	1449767			
ΦNE 09377			1448965	1450371	1450050			
ΦNE 09383			1448965	1450371	1450050			
ΦNE 02467			1448965	1450371	1450204			
ΦNE 04639			1448965	1450371	1450266			
ΦNE 09333	SAV1368	<i>trpG</i>	1450368	1450934	1450403	+		anthranilate synthase component II
ΦNE 12242		<i>trpG</i>	1450368	1450934	1450406			
ΦNE 06482		<i>trpG</i>	1450368	1450934	1450848			
ΦNE 03894	SAV1369	<i>trpD</i>	1450940	1451938	1451013	+		anthranilate phosphoribosyltransferase
ΦNE 01859		<i>trpD</i>	1450940	1451938	1451028			
ΦNE 11749		<i>trpD</i>	1450940	1451938	1451105			
ΦNE 02572		<i>trpD</i>	1450940	1451938	1451259			
ΦNE 09521		<i>trpD</i>	1450940	1451938	1451321			
ΦNE 02144		<i>trpD</i>	1450940	1451938	1451883			
ΦNE 10240	SAV1370	<i>trpC</i>	1451940	1452722	1451994	+		indole-3-glycerol phosphate synthase
ΦNE 13128		<i>trpC</i>	1451940	1452722	1452088			
ΦNE 12365		<i>trpC</i>	1451940	1452722	1452504			
ΦNE 01453	SAV1371	<i>trpF</i>	1452722	1453354	1452887	+		phosphoriborylanthranilate isomerase
ΦNE 10638		<i>trpF</i>	1452722	1453354	1453088			
ΦNE 10583		<i>trpF</i>	1452722	1453354	1453131			
ΦNE 15232		<i>trpF</i>	1452722	1453354	1453274			
ΦNE 13136		<i>trpF</i>	1452722	1453354	1453338			
ΦNE 11658	SAV1372	<i>trpB</i>	1453347	1454561	1453397	+		tryptophan synthase beta chain
ΦNE 11372		<i>trpB</i>	1453347	1454561	1453908			
ΦNE 12217		<i>trpB</i>	1453347	1454561	1454401			
ΦNE 07688	SAV1373	<i>trpA</i>	1454554	1455282	1454781	+		tryptophan synthase alpha chain

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 03755		<i>trpA</i>	1454554	1455282	1454783			
ΦNE 00727		<i>trpA</i>	1454554	1455282	1454787			
ΦNE 11591		<i>trpA</i>	1454554	1455282	1454813			
ΦNE 08044	SAV1377		1459409	1460176	1460055	+		conserved hypothetical protein
ΦNE 09532			1459409	1460176	1460145			
ΦNE 09617	SAV1378		1460224	1460697	1460700	-	*	hypothetical protein
ΦNE 14539	SAV1379		1460821	1461522	1460852	-		oligopeptide transporter putative ATPase domain
ΦNE 00134			1460821	1461522	1460988			
ΦNE 06686			1460821	1461522	1461163			
ΦNE 04936			1460821	1461522	1461224			
ΦNE 10028			1460821	1461522	1461303			
ΦNE 08400			1460821	1461522	1461437			
ΦNE 12518	SAV1380		1461515	1462288	1461524	-		oligopeptide transport ATPase
ΦNE 12101	SAV1381		1462275	1463105	1462572	-		oligopeptide transporter membrane permease domain
ΦNE 00217			1462275	1463105	1462639			
ΦNE 05051			1462275	1463105	1462639			
ΦNE 09250			1462275	1463105	1462879			
ΦNE 05892	SAV1382		1463098	1464084	1463352	-		oligopeptide transporter membrane permease domain
ΦNE 11061			1463098	1464084	1463431			
ΦNE 03860			1463098	1464084	1463586			
ΦNE 04334			1463098	1464084	1463586			
ΦNE 12330			1463098	1464084	1463586			
ΦNE 04189			1463098	1464084	1464011			
ΦNE 02100	SAV1383		1464388	1464732	1464513	-		hypothetical protein
ΦNE 00562			1464388	1464732	1464549			
ΦNE 03893	SAV1384		1464937	1466751	1465073	+		hypothetical protein
ΦNE 04696			1464937	1466751	1465235			
ΦNE 05049			1464937	1466751	1465238			
ΦNE 11139			1464937	1466751	1465344			
ΦNE 04664			1464937	1466751	1465924			
ΦNE 09853			1464937	1466751	1466405			
ΦNE 00092	SAV1385		1466891	1467532	1466982	-		hypothetical protein
ΦNE 05416			1466891	1467532	1466983			
ΦNE 00589			1466891	1467532	1467029			
ΦNE 05195	SAV1386	<i>pstB</i>	1467539	1468390	1467855	-		phosphate ABC transporter
ΦNE 09921		<i>pstB</i>	1467539	1468390	1468057			
ΦNE 14434		<i>pstB</i>	1467539	1468390	1468189			
ΦNE 05321		<i>pstB</i>	1467539	1468390	1468230			
ΦNE 15249		<i>pstB</i>	1467539	1468390	1468296			
ΦNE 10977	SAV1387		1468437	1469354	1469084	-		hypothetical protein
ΦNE 05589			1468437	1469354	1469218			
ΦNE 12326			1468437	1469354	1469242			
ΦNE 13757	SAV1388		1469356	1470282	1469676	-		hypothetical protein
ΦNE 06387			1469356	1470282	1470153			
ΦNE 01659	SAV1389		1470473	1471456	1470660	-		thioredoxine reductase
ΦNE 01660			1470473	1471456	1470660			
ΦNE 01661			1470473	1471456	1470660			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 01663			1470473	1471456	1470660			
ΦNE 01665			1470473	1471456	1470660			
ΦNE 01667			1470473	1471456	1470660			
ΦNE 01668			1470473	1471456	1470660			
ΦNE 03202			1470473	1471456	1471043			
ΦNE 02833			1470473	1471456	1471072			
ΦNE 04987	SAV1391		1472431	1473333	1472514	-		conserved hypothetical protein
ΦNE 06216			1472431	1473333	1472929			
ΦNE 12430	SAV1392		1473480	1475081	1473754	+		ABC transporter homolog
ΦNE 04444			1473480	1475081	1474134			
ΦNE 10598			1473480	1475081	1474930			
ΦNE 07886	SAV1393	<i>lysC</i>	1476143	1477348	1476809	+		aspartokinase II
ΦNE 09077		<i>lysC</i>	1476143	1477348	1476878			
ΦNE 11396		<i>lysC</i>	1476143	1477348	1476977			
ΦNE 12395	SAV1394	<i>asd</i>	1477412	1478401	1477448	+		aspartate semialdehyde dehydrogenase
ΦNE 04943		<i>asd</i>	1477412	1478401	1477616			
ΦNE 03495		<i>asd</i>	1477412	1478401	1477688			
ΦNE 13095		<i>asd</i>	1477412	1478401	1477767			
ΦNE 10556	SAV1395	<i>dapA</i>	1478403	1479290	1478460	+		dihydrodipicolinate synthase
ΦNE 09171		<i>dapA</i>	1478403	1479290	1478610			
ΦNE 13002		<i>dapA</i>	1478403	1479290	1478611			
ΦNE 02057		<i>dapA</i>	1478403	1479290	1478686			
ΦNE 12262		<i>dapA</i>	1478403	1479290	1478880			
ΦNE 09152		<i>dapA</i>	1478403	1479290	1479088			
ΦNE 06502		<i>dapA</i>	1478403	1479290	1479254			
ΦNE 00844	SAV1396	<i>dapB</i>	1479287	1480009	1479993	+		dihydrodipicolinate reductase
ΦNE 12571	SAV1397	<i>dapD</i>	1480036	1480755	1480075	+		tetrahydrodipicolinate acetyltransferase
ΦNE 13105		<i>dapD</i>	1480036	1480755	1480474			
ΦNE 07808	SAV1398		1480898	1482049	1481071	+		hippurate hydrolase
ΦNE 07856			1480898	1482049	1481749			
ΦNE 11121	SAV1399		1482054	1483139	1482996	+		hypothetical protein
ΦNE 11130			1482054	1483139	1482996			
ΦNE 06259	SAV1400	<i>lysA</i>	1483129	1484394	1483631	+		diaminopimelate decarboxylase
ΦNE 06489		<i>lysA</i>	1483129	1484394	1483713			
ΦNE 10233		<i>lysA</i>	1483129	1484394	1483890			
ΦNE 10470		<i>lysA</i>	1483129	1484394	1483935			
ΦNE 13776		<i>lysA</i>	1483129	1484394	1483958			
ΦNE 13782		<i>lysA</i>	1483129	1484394	1483958			
ΦNE 13783		<i>lysA</i>	1483129	1484394	1483958			
ΦNE 13789		<i>lysA</i>	1483129	1484394	1483958			
ΦNE 13790		<i>lysA</i>	1483129	1484394	1483958			
ΦNE 13791		<i>lysA</i>	1483129	1484394	1483958			
ΦNE 13792		<i>lysA</i>	1483129	1484394	1483958			
ΦNE 13794		<i>lysA</i>	1483129	1484394	1483958			
ΦNE 13801		<i>lysA</i>	1483129	1484394	1483958			
ΦNE 13804		<i>lysA</i>	1483129	1484394	1483958			
ΦNE 13811		<i>lysA</i>	1483129	1484394	1483958			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 13920		<i>lysA</i>	1483129	1484394	1483958			
ΦNE 08157		<i>lysA</i>	1483129	1484394	1484002			
ΦNE 10386		<i>lysA</i>	1483129	1484394	1484192			
ΦNE 11703	SAV1401		1484634	1485035	1484700	-		hypothetical protein
ΦNE 05537			1484634	1485035	1484787			
ΦNE 12337			1484634	1485035	1484787			
ΦNE 08971	SAV1404		1486074	1486343	1486135	+		conserved hypothetical protein
ΦNE 09592	SAV1405		1486368	1486991	1486928	+		hypothetical protein
ΦNE 09088	SAV1407	<i>braB</i>	1488232	1489575	1488485	-		branched-chain amino acid carrier protein
ΦNE 03826		<i>braB</i>	1488232	1489575	1488507			
ΦNE 06490		<i>braB</i>	1488232	1489575	1488507			
ΦNE 06214		<i>braB</i>	1488232	1489575	1488847			
ΦNE 10208		<i>braB</i>	1488232	1489575	1488852			
ΦNE 02848		<i>braB</i>	1488232	1489575	1489245			
ΦNE 00420		<i>braB</i>	1488232	1489575	1489313			
ΦNE 10018		<i>braB</i>	1488232	1489575	1489381			
ΦNE 06295	SAV1408		1489801	1491687	1490385	-		conserved hypothetical protein
ΦNE 03005			1489801	1491687	1491156			
ΦNE 11113			1489801	1491687	1491168			
ΦNE 11700			1489801	1491687	1491271			
ΦNE 06662			1489801	1491687	1491278			
ΦNE 03580			1489801	1491687	1491465			
ΦNE 03792	SAV1411		1492905	1493714	1493695	-		ABC transporter homolog
ΦNE 07930	SAV1412	<i>odhB</i>	1494294	1495562	1494578	-		dihydrolipoamide succinyltransferase
ΦNE 04792		<i>odhB</i>	1494294	1495562	1494677			
ΦNE 01494		<i>odhB</i>	1494294	1495562	1494717			
ΦNE 13678		<i>odhB</i>	1494294	1495562	1495516			
ΦNE 07888	SAV1413	<i>odhA</i>	1495599	1498373	1495674	-		oxoglutarate dehydrogenase
ΦNE 09416		<i>odhA</i>	1495599	1498373	1495692			
ΦNE 10823		<i>odhA</i>	1495599	1498373	1495711			
ΦNE 03753		<i>odhA</i>	1495599	1498373	1495725			
ΦNE 13413		<i>odhA</i>	1495599	1498373	1496214			
ΦNE 06555		<i>odhA</i>	1495599	1498373	1496554			
ΦNE 07266		<i>odhA</i>	1495599	1498373	1496863			
ΦNE 02026		<i>odhA</i>	1495599	1498373	1497020			
ΦNE 01754		<i>odhA</i>	1495599	1498373	1497408			
ΦNE 10214		<i>odhA</i>	1495599	1498373	1498069			
ΦNE 13248		<i>odhA</i>	1495599	1498373	1498073			
ΦNE 13411		<i>odhA</i>	1495599	1498373	1498076			
ΦNE 06603		<i>odhA</i>	1495599	1498373	1498120			
ΦNE 10023		<i>odhA</i>	1495599	1498373	1498206			
ΦNE 13148		<i>odhA</i>	1495599	1498373	1498319			
ΦNE 04120	SAV1416		1501139	1501339	1501262	-		hypothetical protein
ΦNE 12235	SAV1417		1501456	1502070	1501496	-		conserved hypothetical protein
ΦNE 12959	SAV1420	<i>ctpA</i>	1504078	1505568	1504331	-		probable carboxy-terminal processing proteinase
ΦNE 10848		<i>ctpA</i>	1504078	1505568	1504371			
ΦNE 08261		<i>ctpA</i>	1504078	1505568	1504470			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 09098		<i>ctpA</i>	1504078	1505568	1504613			
ΦNE 09785		<i>ctpA</i>	1504078	1505568	1504678			
ΦNE 13749		<i>ctpA</i>	1504078	1505568	1504891			
ΦNE 09941		<i>ctpA</i>	1504078	1505568	1505031			
ΦNE 10595	SAV1423		1506493	1506921	1506801	-		conserved hypothetical protein
ΦNE 02406			1506493	1506921	1506888			
ΦNE 03609	SAV1425		1507533	1508372	1507594	-		conserved hypothetical protein
ΦNE 03610			1507533	1508372	1507594			
ΦNE 12595			1507533	1508372	1507897			
ΦNE 12679			1507533	1508372	1508096			
ΦNE 11371			1507533	1508372	1508239			
ΦNE 12821			1507533	1508372	1508239			
ΦNE 12822			1507533	1508372	1508239			
ΦNE 05309			1507533	1508372	1508278			
ΦNE 05317	SAV1429		1510899	1512023	1511111	-		conserved hypothetical protein
ΦNE 11431			1510899	1512023	1511959			
ΦNE 05515			1510899	1512023	1512007			
ΦNE 02155	SAV1432		1512763	1513467	1512788	+		conserved hypothetical protein
ΦNE 07038			1512763	1513467	1512821			
ΦNE 03810			1512763	1513467	1512824			
ΦNE 13643			1512763	1513467	1512979			
ΦNE 11448	SAV1433		1513950	1514351	1514095	+		hypothetical protein
ΦNE 10593			1513950	1514351	1514101			
ΦNE 09463	SAV1434	<i>ebhA</i>	1514410	1534551	1515246	-		hypothetical protein
ΦNE 05505		<i>ebhA</i>	1514410	1534551	1515608			
ΦNE 13081		<i>ebhA</i>	1514410	1534551	1516190			
ΦNE 00579		<i>ebhA</i>	1514410	1534551	1517535			
ΦNE 09418		<i>ebhA</i>	1514410	1534551	1517981			
ΦNE 02432		<i>ebhA</i>	1514410	1534551	1518602			
ΦNE 01690		<i>ebhA</i>	1514410	1534551	1518897			
ΦNE 07924		<i>ebhA</i>	1514410	1534551	1519416			
ΦNE 01692		<i>ebhA</i>	1514410	1534551	1520745			
ΦNE 01726		<i>ebhA</i>	1514410	1534551	1520745			
ΦNE 06873		<i>ebhA</i>	1514410	1534551	1520745			
ΦNE 11210		<i>ebhA</i>	1514410	1534551	1520802			
ΦNE 01731		<i>ebhA</i>	1514410	1534551	1520887			
ΦNE 06642		<i>ebhA</i>	1514410	1534551	1521051			
ΦNE 03287		<i>ebhA</i>	1514410	1534551	1521566			
ΦNE 14060		<i>ebhA</i>	1514410	1534551	1521569			
ΦNE 09629		<i>ebhA</i>	1514410	1534551	1522151			
ΦNE 06508		<i>ebhA</i>	1514410	1534551	1522456			
ΦNE 12072		<i>ebhA</i>	1514410	1534551	1522655			
ΦNE 07393		<i>ebhA</i>	1514410	1534551	1522965			
ΦNE 11977		<i>ebhA</i>	1514410	1534551	1524921			
ΦNE 10974		<i>ebhA</i>	1514410	1534551	1526318			
ΦNE 03812		<i>ebhA</i>	1514410	1534551	1526525			
ΦNE 12449		<i>ebhA</i>	1514410	1534551	1526604			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 00580		<i>ebhA</i>	1514410	1534551	1527487			
ΦNE 12003		<i>ebhA</i>	1514410	1534551	1528829			
ΦNE 04942		<i>ebhA</i>	1514410	1534551	1528890			
ΦNE 10853		<i>ebhA</i>	1514410	1534551	1529545			
ΦNE 15257		<i>ebhA</i>	1514410	1534551	1529545			
ΦNE 02585		<i>ebhA</i>	1514410	1534551	1531370			
ΦNE 09796		<i>ebhA</i>	1514410	1534551	1531490			
ΦNE 04384		<i>ebhA</i>	1514410	1534551	1531514			
ΦNE 12813		<i>ebhA</i>	1514410	1534551	1531514			
ΦNE 06753		<i>ebhA</i>	1514410	1534551	1531983			
ΦNE 09156		<i>ebhA</i>	1514410	1534551	1531986			
ΦNE 10992		<i>ebhA</i>	1514410	1534551	1532146			
ΦNE 09582		<i>ebhA</i>	1514410	1534551	1532509			
ΦNE 12214		<i>ebhA</i>	1514410	1534551	1532521			
ΦNE 09506		<i>ebhA</i>	1514410	1534551	1533133			
ΦNE 06747		<i>ebhA</i>	1514410	1534551	1533537			
ΦNE 03696		<i>ebhA</i>	1514410	1534551	1533620			
ΦNE 07867		<i>ebhA</i>	1514410	1534551	1534531			
ΦNE 00480	SAV1435	<i>ebhB</i>	1534612	1546284	1535735	-		hypothetical protein
ΦNE 09542		<i>ebhB</i>	1534612	1546284	1536446			
ΦNE 01535		<i>ebhB</i>	1534612	1546284	1536942			
ΦNE 01563		<i>ebhB</i>	1534612	1546284	1537286			
ΦNE 04863		<i>ebhB</i>	1534612	1546284	1537403			
ΦNE 12200		<i>ebhB</i>	1534612	1546284	1538025			
ΦNE 11589		<i>ebhB</i>	1534612	1546284	1538466			
ΦNE 05027		<i>ebhB</i>	1534612	1546284	1538549			
ΦNE 08732		<i>ebhB</i>	1534612	1546284	1538663			
ΦNE 13754		<i>ebhB</i>	1534612	1546284	1538876			
ΦNE 01576		<i>ebhB</i>	1534612	1546284	1539059			
ΦNE 03094		<i>ebhB</i>	1534612	1546284	1539948			
ΦNE 13847		<i>ebhB</i>	1534612	1546284	1540175			
ΦNE 01950		<i>ebhB</i>	1534612	1546284	1540265			
ΦNE 10047		<i>ebhB</i>	1534612	1546284	1540676			
ΦNE 10438		<i>ebhB</i>	1534612	1546284	1540810			
ΦNE 06312		<i>ebhB</i>	1534612	1546284	1541409			
ΦNE 09612		<i>ebhB</i>	1534612	1546284	1541438			
ΦNE 06354		<i>ebhB</i>	1534612	1546284	1541928			
ΦNE 14606		<i>ebhB</i>	1534612	1546284	1541993			
ΦNE 00288		<i>ebhB</i>	1534612	1546284	1542480			
ΦNE 09225		<i>ebhB</i>	1534612	1546284	1542518			
ΦNE 10645		<i>ebhB</i>	1534612	1546284	1542905			
ΦNE 06442		<i>ebhB</i>	1534612	1546284	1543679			
ΦNE 13013		<i>ebhB</i>	1534612	1546284	1543788			
ΦNE 09529		<i>ebhB</i>	1534612	1546284	1543997			
ΦNE 02417		<i>ebhB</i>	1534612	1546284	1544112			
ΦNE 13553		<i>ebhB</i>	1534612	1546284	1544294			
ΦNE 03648		<i>ebhB</i>	1534612	1546284	1544635			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 09044		<i>ebhB</i>	1534612	1546284	1544755			
ΦNE 10238		<i>ehbB</i>	1534612	1546284	1546264			
ΦNE 13073	SAV1436		1546682	1548073	1546926	-		Blt-like protein
ΦNE 03505			1546682	1548073	1546978			
ΦNE 07114			1546682	1548073	1548061			
ΦNE 07769	SAV1437		1548229	1549551	1548638	-		hypothetical protein
ΦNE 15210			1548229	1549551	1548656			
ΦNE 02311			1548229	1549551	1548658			
ΦNE 10391			1548229	1549551	1548907			
ΦNE 09822			1548229	1549551	1549117			
ΦNE 03573	SAV1438		1549582	1550622	1550492	-		threonine deaminase IlvA homolog
ΦNE 05429	SAV1439		1550717	1551835	1551203	-		alanine dehydrogenase
ΦNE 01628			1550717	1551835	1551505			
ΦNE 06311			1550717	1551835	1551590			
ΦNE 10883	SAV1440		1552311	1553189	1552837	-		hypothetical protein
ΦNE 06178	SAV1441		1553209	1556649	1553442	-		conserved hypothetical protein
ΦNE 13587			1553209	1556649	1553449			
ΦNE 06279			1553209	1556649	1554557			
ΦNE 00813			1553209	1556649	1554660			
ΦNE 14000			1553209	1556649	1555066			
ΦNE 10960			1553209	1556649	1556183			
ΦNE 04669			1553209	1556649	1556539			
ΦNE 10919	SAV1442		1556953	1558293	1557350	+		conserved hypothetical protein
ΦNE 12248			1556953	1558293	1558039			
ΦNE 13050			1556953	1558293	1558154			
ΦNE 02819			1556953	1558293	1558171			
ΦNE 05628	SAV1443		1558499	1558831	1558665	-		hypothetical protein
ΦNE 10463	SAV1444		1558915	1560060	1558939	-		conserved hypothetical protein
ΦNE 08469			1558915	1560060	1558959			
ΦNE 13090	SAV1448		1561625	1561975	1561794	-		conserved hypothetical protein
ΦNE 02660			1561625	1561975	1561858			
ΦNE 00061	SAV1451		1565887	1566228	1565924	-		hypothetical protein
ΦNE 08678			1565887	1566228	1566160			
ΦNE 11116	SAV1454	<i>asnS</i>	1567896	1569188	1568202	-		asparaginyI-tRNA synthetase
ΦNE 02119	SAV1455	<i>dinG</i>	1569510	1572203	1569790	-		probable ATP-dependent DNA helicase
ΦNE 13660		<i>dinG</i>	1569510	1572203	1570043			
ΦNE 12299		<i>dinG</i>	1569510	1572203	1570300			
ΦNE 09305		<i>dinG</i>	1569510	1572203	1570336			
ΦNE 00788		<i>dinG</i>	1569510	1572203	1570869			
ΦNE 01522		<i>dinG</i>	1569510	1572203	1570870			
ΦNE 01523		<i>dinG</i>	1569510	1572203	1570870			
ΦNE 01524		<i>dinG</i>	1569510	1572203	1570870			
ΦNE 01526		<i>dinG</i>	1569510	1572203	1570870			
ΦNE 01527		<i>dinG</i>	1569510	1572203	1570870			
ΦNE 01538		<i>dinG</i>	1569510	1572203	1570870			
ΦNE 01539		<i>dinG</i>	1569510	1572203	1570870			
ΦNE 01540		<i>dinG</i>	1569510	1572203	1570870			



Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 05585		<i>dinG</i>	1569510	1572203	1570870			
ΦNE 01561		<i>dinG</i>	1569510	1572203	1570919			
ΦNE 11510		<i>dinG</i>	1569510	1572203	1571325			
ΦNE 07319		<i>dinG</i>	1569510	1572203	1571359			
ΦNE 06258		<i>dinG</i>	1569510	1572203	1571414			
ΦNE 12772		<i>dinG</i>	1569510	1572203	1571485			
ΦNE 09834		<i>dinG</i>	1569510	1572203	1571545			
ΦNE 10432		<i>dinG</i>	1569510	1572203	1572130			
ΦNE 10521	SAV1458		1574392	1575534	1574778	-		hypothetical protein
ΦNE 14032	SAV1459		1575778	1576095	1575896	-		conserved hypothetical protein
ΦNE 12127	SAV1461		1577184	1577771	1577255	-		conserved hypothetical protein
ΦNE 11002			1577184	1577771	1577420			
ΦNE 04132			1577184	1577771	1577450			
ΦNE 12066			1577184	1577771	1577679			
ΦNE 09151			1577184	1577771	1577698			
ΦNE 09155			1577184	1577771	1577698			
ΦNE 09165			1577184	1577771	1577698			
ΦNE 09168			1577184	1577771	1577698			
ΦNE 09173			1577184	1577771	1577698			
ΦNE 09177			1577184	1577771	1577698			
ΦNE 09179			1577184	1577771	1577698			
ΦNE 09913	SAV1463		1578350	1579594	1579154	-		conserved hypothetical protein
ΦNE 01451			1578350	1579594	1579294			
ΦNE 01457			1578350	1579594	1579294			
ΦNE 01462			1578350	1579594	1579294			
ΦNE 01463			1578350	1579594	1579294			
ΦNE 01464			1578350	1579594	1579294			
ΦNE 01465			1578350	1579594	1579294			
ΦNE 01471			1578350	1579594	1579294			
ΦNE 10524	SAV1467		1583551	1583751	1583763	-	*	hypothetical protein
ΦNE 00200	SAV1469	<i>ndk</i>	1583960	1584409	1584298	-		nucleoside diphosphate kinase
ΦNE 12690	SAV1476		1590183	1591358	1590319	-		30S ribosomal protein S1
ΦNE 02484			1590183	1591358	1590452			
ΦNE 09236			1590183	1591358	1591005			
ΦNE 10445	SAV1478	<i>cmk</i>	1592070	1592729	1592225	-		cytidylate kinase
ΦNE 15282	SAV1480		1593889	1594875	1594044	-		hypothetical protein
ΦNE 13173			1593889	1594875	1594143			
ΦNE 11276			1593889	1594875	1594323			
ΦNE 00664			1593889	1594875	1594492			
ΦNE 02088			1593889	1594875	1594547			
ΦNE 07946			1593889	1594875	1594596			
ΦNE 01733	SAV1482		1596890	1598269	1597122	-		probable ATP-dependent DNA helicase RecQ
ΦNE 14600			1596890	1598269	1597246			
ΦNE 08645			1596890	1598269	1598080			
ΦNE 11560			1596890	1598269	1598080			
ΦNE 11710			1596890	1598269	1598080			
ΦNE 09531	SAV1483		1598259	1599212	1598687	-		conserved hypothetical protein

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 04523			1598259	1599212	1599165			
ΦNE 04516			1598259	1599212	1599171			
ΦNE 04755			1598259	1599212	1599171			
ΦNE 04911			1598259	1599212	1599171			
ΦNE 11752	SAV1484	<i>fer</i>	1599319	1599567	1599404	+		ferredoxin
ΦNE 09828		<i>fer</i>	1599319	1599567	1599563			
ΦNE 02826	SAV1485		1599673	1600218	1599704	-		conserved hypothetical protein
ΦNE 13673			1599673	1600218	1599902			
ΦNE 00334			1599673	1600218	1600184			
ΦNE 00347			1599673	1600218	1600184			
ΦNE 09669	SAV1488		1602999	1603904	1603740	-		hypothetical protein
ΦNE 10961	SAV1489		1603994	1606156	1604361	-		hypothetical protein
ΦNE 13535			1603994	1606156	1604507			
ΦNE 12761			1603994	1606156	1604531			
ΦNE 06275			1603994	1606156	1604844			
ΦNE 08496			1603994	1606156	1605077			
ΦNE 08794			1603994	1606156	1606159		*	
ΦNE 12844	SAV1491	<i>srrB</i>	1607319	1609085	1608752	-		staphylococcal respiratory response protein
ΦNE 00634	SAV1493	<i>rluB</i>	1609909	1610646	1610090	-		ribosomal large subunit pseudouridine synthase B
ΦNE 08902	SAV1494		1610639	1611181	1610941	-		conserved hypothetical protein
ΦNE 01764	SAV1495		1611174	1611929	1611789	-		conserved hypothetical protein
ΦNE 11634			1611174	1611929	1611814			
ΦNE 02742			1611174	1611929	1611900			
ΦNE 10457	SAV1496		1611997	1612503	1612021	+		conserved hypothetical protein
ΦNE 03765	SAV1499		1614071	1614613	1614287	-		conserved hypothetical protein
ΦNE 08669	SAV1500		1614695	1615603	1614854	+		conserved hypothetical protein
ΦNE 03270	SAV1501		1615819	1616067	1615832	-		hypothetical protein
ΦNE 04692			1615819	1616067	1615938			
ΦNE 09635	SAV1502		1616083	1616838	1616213	-		hypothetical protein
ΦNE 02184			1616083	1616838	1616216			
ΦNE 12283			1616083	1616838	1616461			
ΦNE 03207			1616083	1616838	1616687			
ΦNE 03208			1616083	1616838	1616687			
ΦNE 03210			1616083	1616838	1616687			
ΦNE 03211			1616083	1616838	1616687			
ΦNE 03212			1616083	1616838	1616687			
ΦNE 03219			1616083	1616838	1616687			
ΦNE 14594	SAV1503		1616980	1617795	1617287	+		hypothetical protein
ΦNE 12154			1616980	1617795	1617596			
ΦNE 14689			1616980	1617795	1617714			
ΦNE 14690			1616980	1617795	1617714			
ΦNE 14696			1616980	1617795	1617714			
ΦNE 14697			1616980	1617795	1617714			
ΦNE 14698			1616980	1617795	1617714			
ΦNE 14749			1616980	1617795	1617714			
ΦNE 14762			1616980	1617795	1617714			
ΦNE 14764			1616980	1617795	1617714			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 14768			1616980	1617795	1617714			
ΦNE 14771			1616980	1617795	1617714			
ΦNE 14773			1616980	1617795	1617714			
ΦNE 09842			1616980	1617795	1617783			
ΦNE 03915	SAV1506		1620845	1621711	1621146	+		transcription regulator AraC/XylS family homolog
ΦNE 10195	SAV1507	<i>malA</i>	1621793	1623442	1621849	-		alpha-D-1,4-glucosidase
ΦNE 10496		<i>malA</i>	1621793	1623442	1623338			
ΦNE 14031	SAV1508	<i>malR</i>	1623458	1624477	1623688	-		maltose operon transcriptional repressor
ΦNE 05490		<i>malR</i>	1623458	1624477	1623768			
ΦNE 04920		<i>malR</i>	1623458	1624477	1624009			
ΦNE 13798		<i>malR</i>	1623458	1624477	1624137			
ΦNE 06273		<i>malR</i>	1623458	1624477	1624299			
ΦNE 07692		<i>malR</i>	1624671	1625042	1624691			
ΦNE 07430	SAV1509		1624671	1625042	1624727	-		conserved hypothetical protein
ΦNE 00545			1624671	1625042	1624742			
ΦNE 01616			1624671	1625042	1625016			
ΦNE 06529	SAV1511	<i>gnd</i>	1627042	1628448	1627036	-	*	phosphogluconate dehydrogenase
ΦNE 10611	SAV1512		1628516	1629649	1629153	-		hypothetical protein
ΦNE 00153			1628516	1629649	1629560			
ΦNE 10518	SAV1513		1630218	1631198	1630219	-		conserved hypothetical protein
ΦNE 10029			1630218	1631198	1630230			
ΦNE 05030			1630218	1631198	1630736			
ΦNE 09889			1630218	1631198	1630840			
ΦNE 10081			1630218	1631198	1630942			
ΦNE 09950	SAV1514		1631212	1631649	1631259	-		conserved hypothetical protein
ΦNE 09564	SAV1515	<i>bmfBB</i>	1632000	1633274	1632589	-		branched-chain alpha-keto acid dehydrogenase E2
ΦNE 10858		<i>bmfBB</i>	1632000	1633274	1633041			
ΦNE 13527	SAV1516	<i>bfmBAB</i>	1633287	1634270	1633995	-		branched-chain alpha-keto acid dehydrogenase E1
ΦNE 13468	SAV1517	<i>bfmBAA</i>	1634270	1635262	1634864	-		branched-chain alpha-keto acid dehydrogenase E1
ΦNE 13873		<i>bfmBAA</i>	1634270	1635262	1635029			
ΦNE 08777	SAV1518		1635278	1636699	1635528	-		dihydrolypoamide dehydrogenase
ΦNE 12287			1635278	1636699	1635684			
ΦNE 10390			1635278	1636699	1635900			
ΦNE 09439	SAV1519	<i>recN</i>	1636850	1638529	1638296	-		DNA repair protein
ΦNE 02320	SAV1520	<i>ahrC</i>	1638545	1638997	1638618	-		arginine repressor
ΦNE 02610		<i>ahrC</i>	1638545	1638997	1638692			
ΦNE 11035		<i>ahrC</i>	1638545	1638997	1638736			
ΦNE 00598		<i>ahrC</i>	1638545	1638997	1638835			
ΦNE 08966	SAV1521	<i>ispA</i>	1639429	1640310	1639526	-		geranyltranstransferase homolog
ΦNE 03133		<i>ispA</i>	1639429	1640310	1639694			
ΦNE 10447		<i>ispA</i>	1639429	1640310	1639924			
ΦNE 08565		<i>ispA</i>	1639429	1640310	1639991			
ΦNE 00218		<i>ispA</i>	1639429	1640310	1640007			
ΦNE 13659		<i>ispA</i>	1639429	1640310	1640210			
ΦNE 04349	SAV1523		1640511	1641848	1640552	-		hypothetical protein
ΦNE 14596			1640511	1641848	1640915			
ΦNE 08618			1640511	1641848	1640954			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 08432			1640511	1641848	1640966			
ΦNE 14396			1640511	1641848	1641025			
ΦNE 14694			1640511	1641848	1641304			
ΦNE 08782			1640511	1641848	1641377			
ΦNE 01828			1640511	1641848	1641527			
ΦNE 01978			1640511	1641848	1641536			
ΦNE 12092			1640511	1641848	1641802			
ΦNE 04651			1640511	1641848	1641849		*	
ΦNE 13764	SAV1524		1641865	1642254	1641991	-		hypothetical protein
ΦNE 14011			1641865	1642254	1641994			
ΦNE 08273			1641865	1642254	1642064			
ΦNE 08274			1641865	1642254	1642064			
ΦNE 08278			1641865	1642254	1642064			
ΦNE 09368	SAV1529		1645686	1645997	1645958	-		Xaa-Pro dipeptidase
ΦNE 12331	SAV1530		1646053	1646628	1646193	-		Xaa-Pro dipeptidase
ΦNE 10040			1646053	1646628	1646376			
ΦNE 12974	SAV1535		1649349	1650821	1649697	-		glycine dehydrogenase subunit 2 homologue
ΦNE 02082			1649349	1650821	1649881			
ΦNE 09577			1649349	1650821	1650265			
ΦNE 06418			1649349	1650821	1650768			
ΦNE 10762	SAV1536		1650814	1652160	1650888	-		glycine dehydrogenase subunit 1
ΦNE 12213			1650814	1652160	1650951			
ΦNE 02182			1650814	1652160	1651019			
ΦNE 11197			1650814	1652160	1651440			
ΦNE 13786			1650814	1652160	1651636			
ΦNE 01569			1650814	1652160	1651650			
ΦNE 11615	SAV1537		1652180	1653271	1652626	-		aminomethyltransferase
ΦNE 02594			1652180	1653271	1653241			
ΦNE 02470	SAV1539		1654187	1654684	1654257	-		hypothetical protein
ΦNE 04366			1654187	1654684	1654423			
ΦNE 09937	SAV1540		1654602	1654901	1654890	-		hypothetical protein
ΦNE 09268	SAV1541		1654888	1655322	1654935	-		hypothetical protein
ΦNE 09270			1654888	1655322	1654935			
ΦNE 07768			1654888	1655322	1655218			
ΦNE 10049	SAV1542		1655312	1655623	1655460	-		exogenous DNA-binding protein comGC
ΦNE 11174			1655312	1655623	1655569			
ΦNE 06550	SAV1543		1655637	1656707	1655793	-		hypothetical protein
ΦNE 03679			1655637	1656707	1655852			
ΦNE 06373			1655637	1656707	1656182			
ΦNE 10067			1655637	1656707	1656406			
ΦNE 04447	SAV1544		1656679	1657653	1657002	-		hypothetical protein
ΦNE 14616			1656679	1657653	1657260			
ΦNE 10440			1656679	1657653	1657484			
ΦNE 08997			1656679	1657653	1657562			
ΦNE 05124	SAV1545		1657705	1658328	1657912	-		conserved hypothetical protein
ΦNE 14429			1657705	1658328	1657912			
ΦNE 10927	SAV1546		1658325	1658654	1658574	-		conserved hypothetical protein

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 13005	SAV1547	<i>glcK</i>	1658654	1659640	1658868	-		glucokinase
ΦNE 01495		<i>glcK</i>	1658654	1659640	1658900			
ΦNE 08539		<i>glcK</i>	1658654	1659640	1659006			
ΦNE 08650		<i>glcK</i>	1658654	1659640	1659286			
ΦNE 13800	SAV1549		1659821	1661284	1660632	-		conserved hypothetical protein
ΦNE 08948			1659821	1661284	1660962			
ΦNE 15172			1659821	1661284	1660963			
ΦNE 09413			1659821	1661284	1660981			
ΦNE 09080			1659821	1661284	1661009			
ΦNE 00130	SAV1550		1661296	1661835	1661310	-		conserved hypothetical protein
ΦNE 11029	SAV1555		1665774	1666637	1666171	-		hypothetical protein
ΦNE 01591	SAV1556		1666680	1667447	1666964	-		hypothetical protein
ΦNE 00845			1666680	1667447	1667211			
ΦNE 01864			1666680	1667447	1667211			
ΦNE 09048			1666680	1667447	1667216			
ΦNE 10520	SAV1557		1667591	1668481	1667740	-		hypothetical protein
ΦNE 05095			1667591	1668481	1668337			
ΦNE 13559	SAV1558		1668491	1669837	1668496	-		hypothetical protein
ΦNE 10627			1668491	1669837	1669362			
ΦNE 11890			1668491	1669837	1669408			
ΦNE 04886	SAV1563		1675070	1675888	1675184	-		conserved hypothetical protein
ΦNE 12549			1675070	1675888	1675243			
ΦNE 03872			1675070	1675888	1675323			
ΦNE 03904			1675070	1675888	1675328			
ΦNE 10421			1675070	1675888	1675485			
ΦNE 12526			1675070	1675888	1675662			
ΦNE 03909			1675070	1675888	1675788			
ΦNE 10510			1675070	1675888	1675854			
ΦNE 10839	SAV1571	<i>phoH</i>	1681302	1682249	1681677	-		phosphate starvation-induced protein phoH homologue
ΦNE 08889		<i>phoH</i>	1681302	1682249	1682234			
ΦNE 07544	SAV1572		1682553	1683251	1682692	-		conserved hypothetical protein
ΦNE 09146			1682553	1683251	1682800			
ΦNE 06393			1682553	1683251	1682953			
ΦNE 11862	SAV1573		1683268	1684257	1683687	-		conserved hypothetical protein
ΦNE 06402			1683268	1684257	1684101			
ΦNE 07983			1683268	1684257	1684215			
ΦNE 08686			1683268	1684257	1684253			
ΦNE 10437	SAV1574		1684275	1684982	1684318	-		conserved hypothetical protein
ΦNE 10954			1684275	1684982	1684336			
ΦNE 10271			1684275	1684982	1684355			
ΦNE 15190			1684275	1684982	1684373			
ΦNE 11310			1684275	1684982	1684550			
ΦNE 09721			1684275	1684982	1684617			
ΦNE 05383			1684275	1684982	1684639			
ΦNE 10399	SAV1576		1685671	1687017	1685740	-		conserved hypothetical protein
ΦNE 05130			1685671	1687017	1687016			
ΦNE 10031	SAV1577		1687024	1687776	1687551	-		conserved hypothetical protein

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 00034			1687024	1687776	1687700			
ΦNE 09459	SAV1583	<i>hemN</i>	1693631	1694755	1694092	-		oxygen-independent coproporphyrinogen oxidase III
ΦNE 09074		<i>hemN</i>	1693631	1694755	1694647			
ΦNE 00481		<i>hemN</i>	1693631	1694755	1694736			
ΦNE 15237	SAV1585	<i>lepA</i>	1695321	1697144	1695827	-		GTP-binding protein
ΦNE 09748	SAV1588		1698817	1701018	1699136	-		hypothetical protein
ΦNE 01942			1698817	1701018	1699334			
ΦNE 13467			1698817	1701018	1699334			
ΦNE 04721			1698817	1701018	1699356			
ΦNE 11840			1698817	1701018	1699428			
ΦNE 13582			1698817	1701018	1699501			
ΦNE 10072			1698817	1701018	1699617			
ΦNE 03153			1698817	1701018	1700079			
ΦNE 09905			1698817	1701018	1700578			
ΦNE 02535			1698817	1701018	1700712			
ΦNE 06704			1698817	1701018	1700827			
ΦNE 15341	SAV1589	<i>comEB</i>	1701023	1701484	1701067	-		late competence operon required for DNA binding and uptake
ΦNE 14510	SAV1590		1701576	1702253	1701752	-		hypothetical protein
ΦNE 01528			1701576	1702253	1701928			
ΦNE 03623			1701576	1702253	1701955			
ΦNE 04436			1701576	1702253	1702137			
ΦNE 03417	SAV1591		1702302	1703018	1702523	-		conserved hypothetical protein
ΦNE 13165	SAV1593		1703375	1703959	1703417	-		conserved hypothetical protein
ΦNE 09804	SAV1596	<i>aroE</i>	1704815	1705621	1705007	-		shikimate dehydrogenase
ΦNE 00573		<i>aroE</i>	1704815	1705621	1705077			
ΦNE 01788		<i>aroE</i>	1704815	1705621	1705329			
ΦNE 07513		<i>aroE</i>	1704815	1705621	1705429			
ΦNE 09942		<i>aroE</i>	1704815	1705621	1705562			
ΦNE 14659	SAV1600		1708283	1708552	1708463	+		hypothetical protein
ΦNE 10658	SAV1601		1708754	1708942	1708776	-		enterotoxin homolog
ΦNE 14387	SAV1603		1710271	1711491	1710425	-		conserved hypothetical protein
ΦNE 12817			1710271	1711491	1710691			
ΦNE 10574			1710271	1711491	1710795			
ΦNE 10488			1710271	1711491	1711001			
ΦNE 05136			1710271	1711491	1711046			
ΦNE 09087			1710271	1711491	1711377			
ΦNE 04125	SAV1604		1711780	1713009	1712408	-		conserved hypothetical protein
ΦNE 09980			1711780	1713009	1712536			
ΦNE 04677			1711780	1713009	1712586			
ΦNE 10651			1711780	1713009	1712679			
ΦNE 03405			1711780	1713009	1712796			
ΦNE 10511			1711780	1713009	1712931			
ΦNE 02099	SAV1606		1713774	1715135	1714634	-		acetyl-CoA carboxylase
ΦNE 00048			1713774	1715135	1714978			
ΦNE 12009			1713774	1715135	1715012			
ΦNE 02005			1713774	1715135	1715084			
ΦNE 10243			1713774	1715135	1715097			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 00810	SAV1607		1715149	1715598	1715159	-		hypothetical protein
ΦNE 09590	SAV1608		1715600	1716610	1716166	-		conserved hypothetical protein
ΦNE 02412			1715600	1716610	1716208			
ΦNE 02324			1715600	1716610	1716450			
ΦNE 03667	SAV1609		1716600	1717334	1716726	-		conserved hypothetical protein
ΦNE 10608			1716600	1717334	1716839			
ΦNE 06653			1716600	1717334	1716886			
ΦNE 05512			1716600	1717334	1716945			
ΦNE 06452			1716600	1717334	1716979			
ΦNE 09775			1716600	1717334	1717028			
ΦNE 09767			1716600	1717334	1717155			
ΦNE 13426	SAV1610	<i>greA</i>	1717660	1718136	1717751	-		transcription elongation factor
ΦNE 03914	SAV1611	<i>udk</i>	1718164	1718787	1718324	-		uridine kinase
ΦNE 09647		<i>udk</i>	1718164	1718787	1718447			
ΦNE 13380		<i>udk</i>	1718164	1718787	1718538			
ΦNE 02786		<i>udk</i>	1718164	1718787	1718682			
ΦNE 10251	SAV1612		1718787	1720055	1719139	-		hypothetical protein
ΦNE 10375			1718787	1720055	1719139			
ΦNE 13889			1718787	1720055	1719238			
ΦNE 08658			1718787	1720055	1719475			
ΦNE 07995			1718787	1720055	1719486			
ΦNE 13271			1718787	1720055	1719645			
ΦNE 11070			1718787	1720055	1719814			
ΦNE 13394			1718787	1720055	1719956			
ΦNE 07781			1718787	1720055	1720042			
ΦNE 06599	SAV1613		1720067	1720990	1720085	-		hypothetical protein
ΦNE 06403			1720067	1720990	1720230			
ΦNE 09960			1720067	1720990	1720307			
ΦNE 09909			1720067	1720990	1720466			
ΦNE 05586			1720067	1720990	1720816			
ΦNE 08097	SAV1614		1720993	1721631	1721028	-		hypothetical protein
ΦNE 08257			1720993	1721631	1721046			
ΦNE 08092			1720993	1721631	1721048			
ΦNE 08271			1720993	1721631	1721048			
ΦNE 08093			1720993	1721631	1721050			
ΦNE 08099			1720993	1721631	1721050			
ΦNE 02797			1720993	1721631	1721303			
ΦNE 09933			1720993	1721631	1721608			
ΦNE 13374	SAV1616		1722239	1722610	1722520	-		conserved hypothetical protein
ΦNE 13118	SAV1617		1722671	1722931	1722824	-		conserved hypothetical protein
ΦNE 01851	SAV1619		1725967	1728444	1726423	-		hypothetical protein
ΦNE 13184			1725967	1728444	1727261			
ΦNE 09046			1725967	1728444	1727316			
ΦNE 03924			1725967	1728444	1727472			
ΦNE 12141	SAV1620		1728446	1729114	1728886	-		conserved hypothetical protein
ΦNE 12857			1728446	1729114	1728892			
ΦNE 02539	SAV1623		1732376	1733401	1732569	+		conserved hypothetical protein

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 07404			1732376	1733401	1732832			
ΦNE 00281			1732376	1733401	1733378			
ΦNE 10429	SAV1624		1733633	1733779	1733623	-	*	hypothetical protein
ΦNE 10418			1733633	1733779	1733751			
ΦNE 09949	SAV1625	<i>csbD</i>	1733819	1734001	1733826	-		sigmaB-controlled gene product
ΦNE 09912	SAV1627		1734608	1735882	1734930	+		conserved hypothetical protein
ΦNE 03264			1734608	1735882	1734944			
ΦNE 13834			1734608	1735882	1734986			
ΦNE 03087			1734608	1735882	1735049			
ΦNE 10053			1734608	1735882	1735413			
ΦNE 09930			1734608	1735882	1735433			
ΦNE 11865	SAV1628		1736043	1736816	1736441	-		conserved hypothetical protein
ΦNE 09724			1736043	1736816	1736664			
ΦNE 02307	SAV1632	<i>lytH</i>	1740783	1741658	1741078	-		N-acetylmuramoyl-L-alanine amidase
ΦNE 08882	SAV1635	<i>apt</i>	1744736	1745254	1744894	-		adenine phosphoribosyl transferase
ΦNE 12680		<i>apt</i>	1744736	1745254	1745237			
ΦNE 14433	SAV1636		1745276	1747549	1745554	-		hypothetical protein
ΦNE 12480			1745276	1747549	1745716			
ΦNE 00874			1745276	1747549	1746481			
ΦNE 09928	SAV1637	<i>secF</i>	1747752	1750031	1747796	-		protein-export membrane protein SecDF
ΦNE 09005	SAV1638		1750306	1750566	1750415	-		conserved hypothetical protein
ΦNE 02425			1750306	1750566	1750516			
ΦNE 13469			1750306	1750566	1750541			
ΦNE 03502			1750306	1750566	1750543			
ΦNE 12732			1750306	1750566	1750543			
ΦNE 10417	SAV1639	<i>tgt</i>	1750585	1751724	1750652	-		tRNA-guanine transglycosylase
ΦNE 03576		<i>tgt</i>	1750585	1751724	1750767			
ΦNE 08610		<i>tgt</i>	1750585	1751724	1750798			
ΦNE 13096	SAV1640	<i>queA</i>	1751747	1752772	1751749	-		S-adenosylmethionine tRNA ribosyltransferase
ΦNE 02724		<i>queA</i>	1751747	1752772	1751851			
ΦNE 11811		<i>queA</i>	1751747	1752772	1752163			
ΦNE 08942	SAV1645	<i>rpmA</i>	1756540	1756839	1756710	-		50S ribosomal protei L27
ΦNE 04763	SAV1651		1760103	1760300	1760205	+		hypothetical protein
ΦNE 07932	SAV1652		1760417	1760701	1760414	-	*	hypothetical protein
ΦNE 10469			1760417	1760701	1760525			
ΦNE 08113			1760417	1760701	1760703		*	
ΦNE 09315			1760417	1760701	1760703		*	
ΦNE 13114	SAV1660	<i>truncated-radC</i>	1767593	1768147	1768048	-		DNA repair protein RadC homolog
ΦNE 13569	SAV1661		1768144	1768851	1768481	-		hypothetical protein
ΦNE 02079			1768144	1768851	1768572			
ΦNE 05225			1768144	1768851	1768591			
ΦNE 04873			1768144	1768851	1768806			
ΦNE 11138	SAV1664	<i>tag</i>	1773438	1773998	1773762	+		DNA-3-methyladenine glycosidase
ΦNE 09611		<i>tag</i>	1773438	1773998	1773987			
ΦNE 06627	SAV1665		1774221	1775294	1774327	-		conserved hypothetical protein
ΦNE 09830			1774221	1775294	1774404			
ΦNE 02083			1774221	1775294	1774471			



Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 05323			1774221	1775294	1774504			
ΦNE 05056			1774221	1775294	1774554			
ΦNE 00482			1774221	1775294	1774557			
ΦNE 10592			1774221	1775294	1774627			
ΦNE 09296			1774221	1775294	1775009			
ΦNE 00691	SAV1667	<i>hemL</i>	1775490	1776776	1775814	-		glutamate-1-semialdehyde 2,1-aminomutase
ΦNE 06270	SAV1674	<i>clpX</i>	1782603	1783865	1782623	-		protease
ΦNE 10448		<i>clpX</i>	1782603	1783865	1782946			
ΦNE 09787		<i>clpX</i>	1782603	1783865	1783707			
ΦNE 11361	SAV1675	<i>tig</i>	1784016	1785317	1784101	-		prolyl isomerase
ΦNE 08815		<i>tig</i>	1784016	1785317	1785131			
ΦNE 06322		<i>tig</i>	1784016	1785317	1785175			
ΦNE 09198		<i>tig</i>	1784016	1785317	1785294			
ΦNE 06162	SAV1676		1785480	1786409	1785550	-		hypothetical protein
ΦNE 09142			1785480	1786409	1785688			
ΦNE 12778			1785480	1786409	1785698			
ΦNE 02739			1785480	1786409	1785759			
ΦNE 04542			1785480	1786409	1785870			
ΦNE 12560			1785480	1786409	1786358			
ΦNE 00815			1785480	1786409	1786367			
ΦNE 13130			1785480	1786409	1786379			
ΦNE 13158			1785480	1786409	1786379			
ΦNE 14282			1785480	1786409	1786408			
ΦNE 07572			1785480	1786409	1786410		*	
ΦNE 01639	SAV1677		1786428	1787036	1786655	-		conserved hypothetical protein
ΦNE 01982	SAV1687	<i>gapB</i>	1795836	1796861	1796586	-		glyceraldehyde 3-phosphate dehydrogenase 2
ΦNE 10389		<i>gapB</i>	1795836	1796861	1796654			
ΦNE 11111	SAV1689		1797670	1798542	1797866	-		hypothetical protein
ΦNE 13363			1797670	1798542	1798281			
ΦNE 15238	SAV1690	<i>polA</i>	1798558	1801188	1798599	-		DNA polymerase I
ΦNE 04682		<i>polA</i>	1798558	1801188	1798871			
ΦNE 08968		<i>polA</i>	1798558	1801188	1799246			
ΦNE 11891		<i>polA</i>	1798558	1801188	1799441			
ΦNE 11901		<i>polA</i>	1798558	1801188	1799441			
ΦNE 05636		<i>polA</i>	1798558	1801188	1799848			
ΦNE 02912		<i>polA</i>	1798558	1801188	1800041			
ΦNE 04778		<i>polA</i>	1798558	1801188	1800365			
ΦNE 10563		<i>polA</i>	1798558	1801188	1800731			
ΦNE 05527		<i>polA</i>	1798558	1801188	1800756			
ΦNE 07850	SAV1691		1801482	1802969	1801517	-		hypothetical protein
ΦNE 07842			1801482	1802969	1801520			
ΦNE 11747			1801482	1802969	1801599			
ΦNE 12759			1801482	1802969	1801774			
ΦNE 07819			1801482	1802969	1801949			
ΦNE 06260			1801482	1802969	1802347			
ΦNE 11804	SAV1692	<i>phoR</i>	1803468	1805132	1804598	-		alkaline phosphatase synthesis sensor protein
ΦNE 09369		<i>phoR</i>	1803468	1805132	1804907			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 03695		<i>phoR</i>	1803468	1805132	1805037			
ΦNE 14551	SAV1693	<i>phoP</i>	1805129	1805833	1805388	-		alkaline phosphatase synthesis transcriptional regulatory protein
ΦNE 11620	SAV1694	<i>citC</i>	1806223	1807491	1807042	-		isocitrate dehydrogenase
ΦNE 09707		<i>citC</i>	1806223	1807491	1807346			
ΦNE 05271		<i>citC</i>	1806223	1807491	1807368			
ΦNE 06106		<i>citZ</i>	1807540	1808661	1807907			
ΦNE 14679		<i>citZ</i>	1807540	1808661	1807932			
ΦNE 06897		<i>citZ</i>	1807540	1808661	1808045			
ΦNE 06431		<i>citZ</i>	1807540	1808661	1808413			
ΦNE 08586		<i>citZ</i>	1807540	1808661	1808426			
ΦNE 11247		<i>citZ</i>	1807540	1808661	1808454			
ΦNE 13092	SAV1697	<i>pykA</i>	1810718	1812475	1810778	-		pyruvate kinase
ΦNE 15191		<i>pykA</i>	1810718	1812475	1812204			
ΦNE 01819	SAV1706		1824903	1825316	1825069	+		conserved hypothetical protein
ΦNE 14013	SAV1707		1825621	1826310	1826247	-		conserved hypothetical protein
ΦNE 10478	SAV1708		1826464	1827540	1827380	+		Xaa-Pro dipeptidase homolog
ΦNE 10382	SAV1709	<i>ald</i>	1827857	1828975	1828429	-		alanine dehydrogenase
ΦNE 07146		<i>ald</i>	1827857	1828975	1828464			
ΦNE 02179		<i>ald</i>	1827857	1828975	1828697			
ΦNE 10024	SAV1710		1829116	1829616	1829317	+		conserved hypothetical protein
ΦNE 14643	SAV1712		1831152	1832099	1831520	-		conserved hypothetical protein
ΦNE 13852			1831152	1832099	1831979			
ΦNE 09686			1831152	1832099	1832067			
ΦNE 09756	SAV1713		1832222	1832716	1832322	-		hypothetical protein
ΦNE 12153	SAV1714		1832814	1833584	1832950	-		conserved hypothetical protein
ΦNE 00831	SAV1716		1834851	1835990	1835980	-		hypothetical protein
ΦNE 13546	SAV1718		1838194	1838658	1838305	+		conserved hypothetical protein
ΦNE 09295	SAV1721		1841240	1841983	1841491	-		hypothetical protein
ΦNE 06110	SAV1722		1842063	1842509	1842141	+		conserved hypothetical protein
ΦNE 12565	SAV1723		1842624	1843781	1843309	+		hypothetical protein
ΦNE 09575			1842624	1843781	1843660			
ΦNE 02692			1842624	1843781	1843730			
ΦNE 08670	SAV1724	<i>serA</i>	1843768	1845372	1844323	+		D-3-phosphoglycerate dehydrogenase
ΦNE 05575		<i>serA</i>	1843768	1845372	1844864			
ΦNE 10466		<i>serA</i>	1843768	1845372	1844881			
ΦNE 11691		<i>serA</i>	1843768	1845372	1845299			
ΦNE 09771	SAV1725		1845522	1846652	1845768	-		hypothetical protein
ΦNE 10054			1845522	1846652	1845772			
ΦNE 14446			1845522	1846652	1846574			
ΦNE 01769	SAV1726	<i>ptaA</i>	1846759	1848225	1846835	-		PTS system, N-acetylglucosamine-specific IIABC component
ΦNE 10689		<i>ptaA</i>	1846759	1848225	1847009			
ΦNE 06593		<i>ptaA</i>	1846759	1848225	1847429			
ΦNE 12848		<i>ptaA</i>	1846759	1848225	1847724			
ΦNE 12216		<i>ptaA</i>	1846759	1848225	1848081			
ΦNE 12497		<i>ptaA</i>	1846759	1848225	1848081			
ΦNE 10697	SAV1728		1849142	1850416	1849284	+		hypothetical protein
ΦNE 11661			1849142	1850416	1849772			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 05535			1849142	1850416	1849919			
ΦNE 02036			1849142	1850416	1850072			
ΦNE 09264	SAV1730	<i>sgtA</i>	1852154	1853059	1852198	+		probable transglycosylase
ΦNE 14018		<i>sgtA</i>	1852154	1853059	1852334			
ΦNE 05285		<i>sgtA</i>	1852154	1853059	1852650			
ΦNE 09211		<i>sgtA</i>	1852154	1853059	1852725			
ΦNE 09729		<i>sgtA</i>	1852154	1853059	1852799			
ΦNE 13044		<i>sgtA</i>	1852154	1853059	1853025			
ΦNE 04121	SAV1731	<i>sasI</i>	1853262	1855937	1853455	-		hypothetical protein
ΦNE 04340		<i>sasI</i>	1853262	1855937	1853675			
ΦNE 06315		<i>sasI</i>	1853262	1855937	1854698			
ΦNE 05519		<i>sasI</i>	1853262	1855937	1854778			
ΦNE 00742		<i>sasI</i>	1853262	1855937	1855414			
ΦNE 13827		<i>sasI</i>	1853262	1855937	1855619			
ΦNE 01649	SAV1732	<i>fhs</i>	1856270	1857937	1856841	-		formyltetrahydrofolate synthetase
ΦNE 04341		<i>fhs</i>	1856270	1857937	1857495			
ΦNE 11263	SAV1733	<i>acsA</i>	1858377	1860083	1858767	-		acetyl-CoA synthetase
ΦNE 10957		<i>acsA</i>	1858377	1860083	1858898			
ΦNE 01614		<i>acsA</i>	1858377	1860083	1859552			
ΦNE 04398		<i>acsA</i>	1858377	1860083	1859626			
ΦNE 03779		<i>acsA</i>	1858377	1860083	1859771			
ΦNE 02713		<i>acsA</i>	1858377	1860083	1859863			
ΦNE 01564		<i>acsA</i>	1858377	1860083	1859993			
ΦNE 00456		<i>acsA</i>	1858377	1860083	1860019			
ΦNE 09376	SAV1734	<i>acuA</i>	1860252	1860884	1860638	+		acetoin dehydrogenase homolog
ΦNE 09382		<i>acuA</i>	1860252	1860884	1860638			
ΦNE 09642		<i>acuA</i>	1860252	1860884	1860742			
ΦNE 03717	SAV1735	<i>acuC</i>	1860909	1862078	1861575	+		acetoin utilization protein
ΦNE 11458		<i>acuC</i>	1860909	1862078	1861987			
ΦNE 06725	SAV1736	<i>ccpA</i>	1862176	1863120	1862328	-		catabolite control protein A
ΦNE 11822		<i>ccpA</i>	1862176	1863120	1862951			
ΦNE 07791		<i>ccpA</i>	1862176	1863120	1863051			
ΦNE 12369	SAV1744		1874251	1874562	1874338	-		thioredoxin homolog
ΦNE 11861	SAV1745		1874627	1875703	1874711	-		endo-1,4-beta-glucanase homolog
ΦNE 09978			1874627	1875703	1875150			
ΦNE 09049			1874627	1875703	1875179			
ΦNE 13099	SAV1746		1875790	1876101	1876022	+		hypothetical protein
ΦNE 02504	SAV1747		1876226	1877068	1876403	-		conserved hypothetical protein
ΦNE 05495			1876226	1877068	1876527			
ΦNE 13578			1876226	1877068	1876885			
ΦNE 08693	SAV1750		1879539	1880387	1879560	-		D-alanine aminotransferase
ΦNE 02855			1879539	1880387	1879583			
ΦNE 04451			1879539	1880387	1879783			
ΦNE 15243			1879539	1880387	1879789			
ΦNE 11784			1879539	1880387	1879807			
ΦNE 00182			1879539	1880387	1880096			
ΦNE 00502			1879539	1880387	1880156			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 00370			1879539	1880387	1880272			
ΦNE 06678	SAV1751		1880391	1881800	1880460	-		Xaa-His dipeptidase homolog
ΦNE 06780	SAV1752		1882358	1882780	1882743	-		hypothetical protein
ΦNE 13733	SAV1753		1882797	1883492	1882995	-		hypothetical protein
ΦNE 03697			1882797	1883492	1882998			
ΦNE 03027			1882797	1883492	1883348			
ΦNE 01581	SAV1755		1885515	1886459	1885702	+		hypothetical protein
ΦNE 04050			1885515	1886459	1885707			
ΦNE 07832			1885515	1886459	1886032			
ΦNE 06625			1885515	1886459	1886427			
ΦNE 01809	SAV1756		1886434	1886706	1886450	+		conserved hypothetical protein
ΦNE 11099	SAV1758	<i>mrp</i>	1886823	1887464	1886845	-		Mrp protein
ΦNE 09839		<i>mrp</i>	1886823	1887464	1886975			
ΦNE 11819		<i>mrp</i>	1886823	1887464	1887207			
ΦNE 08746		<i>mrp</i>	1886823	1887464	1887262			
ΦNE 04980		<i>mrp</i>	1886823	1887464	1887275			
ΦNE 12007		<i>mrp</i>	1887431	1893382	1887895			
ΦNE 14526		<i>mrp</i>	1887431	1893382	1889271			
ΦNE 07809		<i>mrp</i>	1887431	1893382	1889355			
ΦNE 07511		<i>mrp</i>	1887431	1893382	1889664			
ΦNE 11707		<i>mrp</i>	1886823	1893382	1889664			
ΦNE 00816		<i>mrp</i>	1887431	1893382	1889902			
ΦNE 00208		<i>mrp</i>	1887431	1893382	1891275			
ΦNE 00430		<i>mrp</i>	1887431	1893382	1891275			
ΦNE 00485		<i>mrp</i>	1887431	1893382	1891275			
ΦNE 05106		<i>mrp</i>	1887431	1893382	1891635			
ΦNE 15347		<i>mrp</i>	1887431	1893382	1891947			
ΦNE 06964	SAV1759		1893708	1894019	1893709	-		conserved hypothetical protein
ΦNE 14685	SAV1761		1896746	1897927	1897039	-		multidrug resistance protein homolog
ΦNE 09423			1896746	1897927	1897202			
ΦNE 03453			1896746	1897927	1897203			
ΦNE 12063			1896746	1897927	1897424			
ΦNE 04981			1896746	1897927	1897669			
ΦNE 09444	SAV1762		1898037	1898990	1898865	+		conserved hypothetical protein
ΦNE 00074			1898037	1898990	1898913			
ΦNE 11223	SAV1763		1898987	1899550	1899036	+		conserved hypothetical protein
ΦNE 05156			1898987	1899550	1899036			
ΦNE 11223			1898987	1899550	1899036			
ΦNE 04006			1898987	1899550	1899162			
ΦNE 08392			1898987	1899550	1899249			
ΦNE 06245			1898987	1899550	1899359			
ΦNE 04041			1898987	1899550	1899384			
ΦNE 05428			1898987	1899550	1899395			
ΦNE 11740	SAV1765		1900644	1901471	1901217	-		lysophospholipase homolog
ΦNE 07701			1900644	1901471	1901391			
ΦNE 13818	SAV1766		1901705	1902706	1901721	+		proline dehydrogenase homolog
ΦNE 12386			1901705	1902706	1902093			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 06814			1901705	1902706	1902230			
ΦNE 00862	SAV1768		1903201	1903293	1903245	-		6,7-dimethyl-8-ribityllumazine synthase
ΦNE 06176	SAV1769	<i>ribA</i>	1903306	1904487	1903322	-		riboflavin biosynthesis protein
ΦNE 06184		<i>ribA</i>	1903306	1904487	1903322			
ΦNE 11586		<i>ribA</i>	1903306	1904487	1903322			
ΦNE 14759		<i>ribA</i>	1903306	1904487	1904319			
ΦNE 04855	SAV1770	<i>ribB</i>	1904498	1905130	1904524	-		riboflavin synthase alpha chain
ΦNE 06309		<i>ribB</i>	1904498	1905130	1904692			
ΦNE 11573		<i>ribB</i>	1904498	1905130	1904730			
ΦNE 11553	SAV1771	<i>ribD</i>	1905137	1906180	1905569	-		riboflavin specific deaminase
ΦNE 03534		<i>ribD</i>	1905137	1906180	1905582			
ΦNE 15236		<i>ribD</i>	1905137	1906180	1905883			
ΦNE 10921	SAV1772		1906661	1908163	1906806	-		hypothetical protein
ΦNE 10652			1906661	1908163	1906987			
ΦNE 02541			1906661	1908163	1906990			
ΦNE 01922			1906661	1908163	1906996			
ΦNE 02899			1906661	1908163	1907621			
ΦNE 11737			1906661	1908163	1907667			
ΦNE 06673			1906661	1908163	1907691			
ΦNE 11489			1906661	1908163	1907752			
ΦNE 06844			1906661	1908163	1908162			
ΦNE 08006	SAV1773		1908686	1909000	1908852	+		arsenical resistance operon repressor homolog
ΦNE 11851			1908686	1909000	1908942			
ΦNE 03743	SAV1774		1909000	1910292	1909296	+		aesenical pump membrane protein homolog
ΦNE 05075			1909000	1910292	1909369			
ΦNE 12218			1909000	1910292	1909553			
ΦNE 12716			1909000	1910292	1909817			
ΦNE 08965			1909000	1910292	1909872			
ΦNE 05013			1909000	1910292	1909875			
ΦNE 13382			1909000	1910292	1909875			
ΦNE 10784			1909000	1910292	1910191			
ΦNE 06358	SAV1775		1910379	1911233	1910647	-		conserved hypothetical protein
ΦNE 09741	SAV1777		1911932	1912402	1912245	+		hypothetical protein
ΦNE 11323	SAV1778		1912515	1912958	1912802	+		hypothetical protein
ΦNE 08664	SAV1779		1912945	1913388	1913185	-		hypothetical protein
ΦNE 09124			1912945	1913388	1913238			
ΦNE 00247	SAV1780		1913684	1914319	1913963	+		hypothetical protein
ΦNE 06341			1913684	1914319	1914203			
ΦNE 04924	SAV1784		1916652	1917005	1916805	+		hypothetical protein
ΦNE 02929	SAV1785		1917467	1917817	1917728	+		truncated transposase
ΦNE 12695	SAV1787		1918160	1918939	1918170	+		truncated transposase
ΦNE 11090			1918160	1918939	1918311			
ΦNE 08318			1918160	1918939	1918344			
ΦNE 05157			1918160	1918939	1918467			
ΦNE 09018			1918160	1918939	1918476			
ΦNE 11190			1918160	1918939	1918477			
ΦNE 05559			1918160	1918939	1918521			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 13297			1918160	1918939	1918665			
ΦNE 10381			1918160	1918939	1918754			
ΦNE 13264	SAV1788		1919002	1919835	1919428	-		plant metabolite dehydrogenase homolog
ΦNE 01969	SAV1791	<i>pckA</i>	1922645	1924237	1923229	+		phosphoenolpyruvate carboxykinase
ΦNE 08719		<i>pckA</i>	1922645	1924237	1923548			
ΦNE 09685		<i>pckA</i>	1922645	1924237	1924070			
ΦNE 11646	SAV1793		1924615	1925385	1925085	-		conserved hypothetical protein
ΦNE 05533			1924615	1925385	1925223			
ΦNE 07557	SAV1794		1925366	1925845	1925588	-		conserved hypothetical protein
ΦNE 13076			1925366	1925845	1925793			
ΦNE 13249	SAV1796	<i>menC</i>	1926159	1927160	1926179	-		o-succinylbenzoic acid synthetase
ΦNE 11082	SAV1798		1928802	1929284	1929118	-		hypothetical protein
ΦNE 04503	SAV1801		1931361	1931987	1931506	+		hypothetical protein
ΦNE 04945			1931362	1931988	1931785			
ΦNE 04108	SAV1803		1932470	1933042	1932649	+		hypothetical protein
ΦNE 11925			1932470	1933042	1932778			
ΦNE 04822			1932470	1933042	1932816			
ΦNE 05478	SAV1805		1933831	1934085	1933953	-		truncated transposase
ΦNE 12446			1933831	1934085	1934009			
ΦNE 13371			1933831	1934085	1934022			
ΦNE 04948	SAV1807		1935792	1937021	1936510	-		probable specificity determinant HsdS
ΦNE 09595			1935792	1937021	1936682			
ΦNE 06428			1935792	1937021	1936732			
ΦNE 03260	SAV1808		1937014	1938570	1937248	-		type I restriction enzyme EcoR124II M protein homolog
ΦNE 11963			1937014	1938570	1937663			
ΦNE 05473			1937014	1938570	1937798			
ΦNE 12382			1937014	1938570	1938019			
ΦNE 06104	SAV1809	<i>spIF</i>	1938931	1939650	1939158	-		serine protease
ΦNE 04782	SAV1810	<i>spID</i>	1939808	1940527	1939202	-		serine protease
ΦNE 02814		<i>spID</i>	1939808	1940527	1940294			
ΦNE 03294	SAV1811	<i>spIC</i>	1940648	1941367	1940807	-		serine protease
ΦNE 11075		<i>spIC</i>	1940648	1941367	1941075			
ΦNE 12789	SAV1813	<i>spIA</i>	1942272	1942979	1942431	-		serine protease
ΦNE 01785	SAV1814		1943415	1943633	1943495	-		hypothetical protein
ΦNE 03169	SAV1815		1943942	1944523	1944173	+		probable beta-lactamase
ΦNE 14630	SAV1819	<i>lukD</i>	1947093	1948091	1947646	-		leukotoxin F-subunit
ΦNE 13601		<i>lukD</i>	1947093	1948091	1947863			
ΦNE 14661	SAV1820	<i>lukE</i>	1948093	1949028	1948233	-		leukotoxin S-subunit
ΦNE 08984		<i>lukE</i>	1948093	1949028	1948416			
ΦNE 03521	SAV1821		1950392	1951180	1950522	+		hypothetical protein
ΦNE 09153	SAV1835	<i>traP</i>	1965438	1965941	1965756	+		signal transduction protein
ΦNE 07467		<i>traP</i>	1965438	1965941	1965844			
ΦNE 15242	SAV1838	<i>hit</i>	1968155	1968577	1968248	+		Hit-like protein involved in cell-cycle regulation
ΦNE 01973		<i>hit</i>	1968155	1968577	1968258			
ΦNE 11581	SAV1839		1968719	1969084	1968910	+		conserved hypothetical protein
ΦNE 10849	SAV1840		1969819	1970376	1969919	+		conserved hypothetical protein
ΦNE 09667			1969819	1970376	1970043			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 10393	SAV1841	<i>prsA</i>	1970581	1971543	1971420	+		peptidyl-prolyl cis/trans isomerase
ΦNE 09920	SAV1842		1971664	1972605	1971667	-		cmp-binding-factor 1
ΦNE 07865	SAV1843		1972602	1975538	1972862	-		conserved hypothetical protein
ΦNE 13866			1972602	1975538	1972923			
ΦNE 07734			1972602	1975538	1973119			
ΦNE 07512			1972602	1975538	1973162			
ΦNE 12781			1972602	1975538	1973162			
ΦNE 10644			1972602	1975538	1974985			
ΦNE 02336			1972602	1975538	1975094			
ΦNE 02128			1972602	1975538	1975298			
ΦNE 00631			1972602	1975538	1975322			
ΦNE 01518	SAV1844		1975528	1976724	1975644	-		conserved hypothetical protein
ΦNE 02947			1975528	1976724	1975719			
ΦNE 07909			1975528	1976724	1975971			
ΦNE 08718			1975528	1976724	1976096			
ΦNE 06479			1975528	1976724	1976133			
ΦNE 13817			1975528	1976724	1976464			
ΦNE 03798			1975528	1976724	1976526			
ΦNE 08153	SAV1846		1978065	1979189	1978174	-		conserved hypothetical protein
ΦNE 04904			1978065	1979189	1979077			
ΦNE 09366	SAV1848		1980189	1980812	1980192	-		two-component response regulator homolog
ΦNE 06189			1980189	1980812	1980606			
ΦNE 06325	SAV1849		1980834	1981946	1981010	-		two-component sensor histidine kinase homolog
ΦNE 02615			1980834	1981946	1981012			
ΦNE 03790			1980834	1981946	1981015			
ΦNE 13819			1980834	1981946	1981538			
ΦNE 13245	SAV1850		1982109	1982930	1982306	+		conserved hypothetical protein
ΦNE 01596	SAV1851	<i>citG</i>	1983383	1984768	1983541	-		fumarate hydratase, class-II
ΦNE 03937		<i>citG</i>	1983383	1984768	1984552			
ΦNE 09007		<i>citG</i>	1983383	1984768	1984621			
ΦNE 13064	SAV1852		1984964	1985359	1985016	-		hypothetical protein
ΦNE 03642			1984964	1985359	1985017			
ΦNE 03650			1984964	1985359	1985017			
ΦNE 04347			1984964	1985359	1985021			
ΦNE 13036			1984964	1985359	1985056			
ΦNE 09688			1984964	1985359	1985111			
ΦNE 07774			1984964	1985359	1985119			
ΦNE 07515			1984964	1985359	1985253			
ΦNE 12503			1984964	1985359	1985264			
ΦNE 12935			1984964	1985359	1985326			
ΦNE 00748			1984964	1985359	1985335			
ΦNE 10202			1984964	1985359	1985354			
ΦNE 11183	SAV1854		1986084	1986683	1986247	-		hypothetical protein
ΦNE 04023	SAV1856		1987317	1988444	1987741	-		conserved hypothetical protein
ΦNE 09126			1987317	1988444	1987925			
ΦNE 09706	SAV1857		1988595	1989323	1989075	-		glutamate ABC transporter ATP-binding protein
ΦNE 15183	SAV1858		1989310	1990635	1989944	-		hypothetical protein

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 09524			1989310	1990635	1990417			
ΦNE 12582	SAV1859		1991025	1992086	1991028	-		hypothetical protein
ΦNE 12615			1991025	1992086	1991665			
ΦNE 05062			1991025	1992086	1991796			
ΦNE 02488			1991025	1992086	1991893			
ΦNE 06458	SAV1860	<i>tnp</i>	1992670	1993989	1992885	+		transposase
ΦNE 09121			1994457	1994528	1994472	-		tRNA-glycine
ΦNE 08450	SAV1862		2003031	2003981	2003064	-		hypothetical protein
ΦNE 04175			2003031	2003981	2003312			
ΦNE 12948			2003031	2003981	2003608			
ΦNE 01520			2003031	2003981	2003854			
ΦNE 06757	SAV1863		2003987	2004442	2004312	-		conserved hypothetical protein
ΦNE 05104			2003987	2004442	2004441			
ΦNE 15185	SAV1864	<i>gsaB</i>	2004523	2005812	2004693	+		glutamate-1-semialdehyde aminotransferase
ΦNE 01784	SAV1865		2006105	2007199	2006154	+		conserved hypothetical protein
ΦNE 14615			2006105	2007199	2006235			
ΦNE 06367			2006105	2007199	2006288			
ΦNE 06370			2006105	2007199	2006288			
ΦNE 05465			2006105	2007199	2006303			
ΦNE 08780			2006105	2007199	2006376			
ΦNE 13338			2006105	2007199	2006423			
ΦNE 09201			2006105	2007199	2006641			
ΦNE 09272			2006105	2007199	2006643			
ΦNE 14420			2006105	2007199	2006666			
ΦNE 02750			2006105	2007199	2006891			
ΦNE 06155			2006105	2007199	2007155			
ΦNE 11093			2006105	2007199	2007190			
ΦNE 01574	SAV1866		2007389	2009125	2007529	-		ABC transporter homolog
ΦNE 09304			2007389	2009125	2008258			
ΦNE 08811			2007389	2009125	2008620			
ΦNE 12175			2007389	2009125	2008885			
ΦNE 04859			2007389	2009125	2009009			
ΦNE 06107	SAV1868		2010261	2011298	2010295	-		hypothetical protein
ΦNE 00194			2010261	2011298	2010307			
ΦNE 11037			2010261	2011298	2010988			
ΦNE 10276			2010261	2011298	2011050			
ΦNE 07273	SAV1870		2012688	2013524	2013200	-		hypothetical protein
ΦNE 03703			2012688	2013524	2013403			
ΦNE 12992	SAV1871		2013533	2015050	2013798	-		hypothetical protein
ΦNE 12899	SAV1873		2015357	2016175	2015480	-		conserved hypothetical protein
ΦNE 06284	SAV1874		2016435	2017244	2016975	-		conserved hypothetical protein
ΦNE 08476			2016435	2017244	2017224			
ΦNE 03774	SAV1875		2017584	2018099	2017763	-		conserved hypothetical protein
ΦNE 12914			2017584	2018099	2017918			
ΦNE 02538	SAV1877		2018615	2019766	2018949	+		conserved hypothetical protein
ΦNE 06267			2018615	2019766	2019026			
ΦNE 10893			2018615	2019766	2019224			



Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 09071			2018615	2019766	2019273			
ΦNE 06180			2018615	2019766	2019383			
ΦNE 06376			2018615	2019766	2019558			
ΦNE 12444			2018615	2019766	2019735			
ΦNE 12278	SAV1879	<i>ampS</i>	2020646	2021893	2020927	-		aminopeptidase ampS
ΦNE 11495		<i>ampS</i>	2020646	2021893	2021055			
ΦNE 05290		<i>ampS</i>	2020646	2021893	2021091			
ΦNE 09410		<i>ampS</i>	2020646	2021893	2021649			
ΦNE 03400		<i>ampS</i>	2020646	2021893	2021722			
ΦNE 03809	SAV1880		2021905	2022111	2021991	-		conserved hypothetical protein
ΦNE 12085			2021905	2022111	2021993			
ΦNE 12484			2021905	2022111	2021993			
ΦNE 12080			2021905	2022111	2021995			
ΦNE 03565			2021905	2022111	2021996			
ΦNE 03575			2021905	2022111	2021996			
ΦNE 15208	SAV1881		2022252	2022716	2022288	+		hypothetical protein
ΦNE 06353	SAV1883		2023276	2024493	2023391	+		hypothetical protein
ΦNE 13242			2023276	2024493	2023391			
ΦNE 10508			2023276	2024493	2024475			
ΦNE 02993	SAV1884	<i>vraR</i>	2024606	2025235	2024988	-		two-component response regulator
ΦNE 07438	SAV1885	<i>vraS</i>	2025225	2026268	2025278	-		two-component sensor histidine kinase
ΦNE 02364		<i>vraS</i>	2025225	2026268	2025901			
ΦNE 11639		<i>vraS</i>	2025225	2026268	2026087			
ΦNE 03821		<i>vraS</i>	2025225	2026268	2026097			
ΦNE 05255		<i>vraS</i>	2025225	2026268	2026219			
ΦNE 15227	SAV1886		2026265	2026966	2026283	-		conserved hypothetical protein
ΦNE 11863			2026265	2026966	2026575			
ΦNE 04899			2026265	2026966	2026708			
ΦNE 02960			2026265	2026966	2026840			
ΦNE 11651			2026265	2026966	2026840			
ΦNE 06266			2026265	2026966	2026951			
ΦNE 11882	SAV1887		2026981	2027367	2027257	-		hypothetical protein
ΦNE 08685			2026981	2027367	2027359			
ΦNE 11839	SAV1889		2028873	2029859	2029101	+		conserved hypothetical protein
ΦNE 07265	SAV1890		2030290	2030742	2030486	-		hypothetical protein
ΦNE 07023			2030290	2030742	2030634			
ΦNE 13487			2030290	2030742	2030665			
ΦNE 06498	SAV1893		2033266	2033766	2033516	+		hypothetical protein
ΦNE 06497			2033266	2033766	2033518			
ΦNE 06672			2033266	2033766	2033604			
ΦNE 07152			2033266	2033766	2033637			
ΦNE 03231	SAV1894		2034156	2034710	2034211	+		hypothetical protein
ΦNE 13545			2034156	2034710	2034358			
ΦNE 09127	SAV1895		2034778	2035848	2035209	-		hypothetical protein
ΦNE 07823			2034778	2035848	2035817			
ΦNE 10378	SAV1896		2036095	2036625	2036095	-		conserved hypothetical protein
ΦNE 04966			2036095	2036625	2036132			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 15178	SAV1897		2036795	2038156	2036934	-		RNA methyltransferase homolog
ΦNE 13475			2036795	2038156	2037145			
ΦNE 00136			2036795	2038156	2037163			
ΦNE 00137			2036795	2038156	2037163			
ΦNE 11166			2036795	2038156	2037187			
ΦNE 12187			2036795	2038156	2037234			
ΦNE 10870			2036795	2038156	2037600			
ΦNE 01468	SAV1899		2039952	2041379	2041338	-		glutamyl-tRNAIn amidotransferase subunit B
ΦNE 11673	SAV1902	<i>putP</i>	2043520	2045058	2044268	+		high affinity proline permease
ΦNE 11997	SAV1903		2045147	2046346	2046334	-		conserved hypothetical protein
ΦNE 01622	SAV1906	<i>pcrB</i>	2050555	2051247	2050607	-		conserved hypothetical protein
ΦNE 14046	SAV1907		2051419	2051721	2051549	-		conserved hypothetical protein
ΦNE 01592			2051419	2051721	2051613			
ΦNE 10743	SAV1908	<i>purB</i>	2051830	2053125	2051984	-		adenylosuccinate lyase
ΦNE 02875		<i>purB</i>	2051830	2053125	2052463			
ΦNE 04589		<i>purB</i>	2051830	2053125	2052612			
ΦNE 12131		<i>purB</i>	2051830	2053125	2052862			
ΦNE 05144		<i>purB</i>	2051830	2053125	2052913			
ΦNE 11242		<i>purB</i>	2051830	2053125	2052966			
ΦNE 14022	SAV1909		2053985	2055151	2054315	+		staphopain
ΦNE 06249			2053985	2055151	2054695			
ΦNE 13520			2053985	2055151	2054709			
ΦNE 09254			2053985	2055151	2054884			
ΦNE 11243			2053985	2055151	2054915			
ΦNE 13504	SAV1911		2055954	2056556	2056100	-		conserved hypothetical protein
ΦNE 04478			2055954	2056556	2056404			
ΦNE 11957			2055954	2056556	2056409			
ΦNE 02554	SAV1914		2059294	2060370	2059304	+		nitric-oxide synthase homolog
ΦNE 12727			2059294	2060370	2059333			
ΦNE 12194			2059294	2060370	2059418			
ΦNE 04134			2059294	2060370	2059439			
ΦNE 06919			2059294	2060370	2059523			
ΦNE 13840			2059294	2060370	2059610			
ΦNE 13862			2059294	2060370	2059620			
ΦNE 07497			2059294	2060370	2059857			
ΦNE 00331			2059294	2060370	2059939			
ΦNE 05355			2059294	2060370	2059939			
ΦNE 09372	SAV1915		2060390	2061184	2060856	+		hypothetical protein
ΦNE 09372			2060390	2061184	2060856			
ΦNE 09265	SAV1916		2061374	2062936	2061427	-		hypothetical protein
ΦNE 12923			2061374	2062936	2061508			
ΦNE 10888			2061374	2062936	2061582			
ΦNE 07449			2061374	2062936	2061675			
ΦNE 09025			2061374	2062936	2061694			
ΦNE 02250			2061374	2062936	2061735			
ΦNE 06567			2061374	2062936	2062036			
ΦNE 04631			2061374	2062936	2062284			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 00718			2061374	2062936	2062458			
ΦNE 13282			2061374	2062936	2062540			
ΦNE 03182	SAV1917		2063141	2064238	2063215	-		conserved hypothetical protein
ΦNE 12608			2063141	2064238	2063275			
ΦNE 11064			2063141	2064238	2063317			
ΦNE 13226			2063141	2064238	2063392			
ΦNE 07922			2063141	2064238	2063716			
ΦNE 02291			2063141	2064238	2063728			
ΦNE 02518			2063141	2064238	2063799			
ΦNE 06664			2063141	2064238	2064237			
ΦNE 04769	SAV1918		2064607	2065167	2064865	+		pyrazinamidase/nicotinamidase homolog
ΦNE 10631			2064607	2065167	2064901			
ΦNE 08020			2064607	2065167	2065002			
ΦNE 10965	SAV1919		2065220	2066149	2066149	+		manganese-dependent inorganic pyrophosphatase
ΦNE 11459	SAV1920	<i>aldH</i>	2066567	2067946	2066713	+		aldehyde dehydrogenase
ΦNE 04846	SAV1922		2069364	2069765	2069594	+		hypothetical protein
ΦNE 01723	SAV1924		2070338	2070511	2070408	-		hypothetical protein
ΦNE 05468	SAV1925		2070962	2072002	2071172	+		hypothetical protein
ΦNE 11893			2070962	2072002	2071649			
ΦNE 11893			2070962	2072002	2071649			
ΦNE 03437	SAV1926		2072059	2072901	2072393	-		hypothetical protein
ΦNE 06378			2072059	2072901	2072454			
ΦNE 04883			2072059	2072901	2072620			
ΦNE 13899			2072059	2072901	2072667			
ΦNE 11080	SAV1927		2072898	2073455	2073179	-		conserved hypothetical protein
ΦNE 01449	SAV1928		2073515	2074039	2073597	-		hypothetical protein
ΦNE 12471	SAV1929		2074160	2074723	2074640	+		hypothetical protein
ΦNE 11264			2074160	2074723	2074641			
ΦNE 01508	SAV1932		2076398	2077078	2076660	-		hypothetical protein
ΦNE 09076	SAV1933		2077079	2077975	2077096	-		hypothetical protein
ΦNE 12158			2077079	2077975	2077758			
ΦNE 09620	SAV1934		2077972	2078352	2078082	-		hypothetical protein
ΦNE 06269			2077972	2078352	2078111			
ΦNE 13110	SAV1935		2078610	2078786	2078723	-		hypothetical protein
ΦNE 02967	SAV1936		2079326	2080612	2079482	+		hypothetical protein
ΦNE 11293			2079326	2080612	2079872			
ΦNE 11559	SAV1938	<i>truncated-mapW</i>	2079326	2081211	2080941	-		truncated map-w protein
ΦNE 13870		<i>truncated-mapW</i>	2080891	2081211	2081008			
ΦNE 10907		<i>truncated-mapW</i>	2081196	2082626	2081488			
ΦNE 11729		<i>truncated-mapW</i>	2081196	2082626	2081506			
ΦNE 11145		<i>truncated-mapW</i>	2081196	2082626	2081600			
ΦNE 03882		<i>truncated-mapW</i>	2081196	2082626	2081649			
ΦNE 03945		<i>truncated-mapW</i>	2081196	2082626	2081728			
ΦNE 13766		<i>truncated-mapW</i>	2081196	2082626	2081903			
ΦNE 04149		<i>truncated-mapW</i>	2081196	2082626	2081971			
ΦNE 05094		<i>truncated-mapW</i>	2081196	2082626	2082297			
ΦNE 09659		<i>truncated-mapW</i>	2081196	2082626	2082400			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 10055	SAV1939	<i>truncated-hlb</i>	2082969	2083211	2083063	+		truncated 6449-6450 beta-hemolysin
ΦNE 03698		<i>truncated-hlb</i>	2082969	2083211	2083168			
ΦNE 07384		<i>truncated-hlb</i>	2082969	2083211	2083191			
ΦNE 09316	SAV1941		2083921	2084094	2083991	+		hypothetical protein
ΦNE 12753			2083921	2084094	2084047			
ΦNE 00001	SAV1943	<i>truncated-lytA</i>	2085246	2085713	2085371	-		truncated amidase
ΦNE 12182		<i>truncated-lytA</i>	2085246	2085713	2085386			
ΦNE 02464	SAV1944	<i>sak</i>	2086233	2086724	2086477	-		staphylokinase precursor
ΦNE 08802	SAV1945		2086939	2087670	2087082	-		lytic enzyme
ΦNE 06671			2086939	2087670	2087267			
ΦNE 02996			2086939	2087670	2087617			
ΦNE 14717	SAV1948	<i>sep</i>	2088433	2089215	2088550	-		enterotoxin P
ΦNE 03552		<i>sep</i>	2088433	2089215	2088687			
ΦNE 08265	SAV1949		2089299	2089538	2089412	+		hypothetical protein
ΦNE 09512	SAV1950		2089579	2089953	2089965	-	*	hypothetical protein
ΦNE 04335	SAV1951		2090009	2090338	2090283	-		hypothetical protein
ΦNE 12961	SAV1952		2090342	2090494	2090358	-		hypothetical protein
ΦNE 11644	SAV1953		2090487	2094269	2090578	-		phi PVL ORF 20 and 21 homologue
ΦNE 13132			2090487	2094269	2091346			
ΦNE 12627			2090487	2094269	2091486			
ΦNE 05058			2090487	2094269	2091778			
ΦNE 02627			2090487	2094269	2091953			
ΦNE 06828			2090487	2094269	2092309			
ΦNE 02578			2090487	2094269	2093156			
ΦNE 04092			2090487	2094269	2093269			
ΦNE 02902			2090487	2094269	2093272			
ΦNE 08857			2090487	2094269	2093272			
ΦNE 11272			2090487	2094269	2093488			
ΦNE 13166			2090487	2094269	2093661			
ΦNE 10930			2090487	2094269	2093749			
ΦNE 12228			2090487	2094269	2093861			
ΦNE 06872			2090487	2094269	2093990			
ΦNE 09827			2090487	2094269	2094244			
ΦNE 06389			2090487	2094269	2094266			
ΦNE 06390	SAV1954		2094285	2095769	2094309	-		hypothetical protein
ΦNE 03922			2094285	2095769	2094584			
ΦNE 13367			2094285	2095769	2094756			
ΦNE 06538			2094285	2095769	2094821			
ΦNE 12807			2094285	2095769	2094881			
ΦNE 11767			2094285	2095769	2094904			
ΦNE 01647			2094285	2095769	2095584			
ΦNE 03245			2094285	2095769	2095645			
ΦNE 11508			2094285	2095769	2095753			
ΦNE 10886	SAV1955		2095766	2100295	2096063	-		phi PVL ORF 15 and 16 homologue
ΦNE 03844			2095766	2100295	2096140			
ΦNE 12567			2095766	2100295	2096237			
ΦNE 05090			2095766	2100295	2096274			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 12922			2095766	2100295	2096400			
ΦNE 08082			2095766	2100295	2096999			
ΦNE 07974			2095766	2100295	2098045			
ΦNE 03766			2095766	2100295	2098326			
ΦNE 12005			2095766	2100295	2098938			
ΦNE 11125			2095766	2100295	2099645			
ΦNE 11134			2095766	2100295	2099663			
ΦNE 00355			2095766	2100295	2099956			
ΦNE 06840	SAV1956	<i>truncated int</i>	2100364	2100711	2100435	-		hypothetical protein
ΦNE 13772	SAV1957		2101206	2101850	2101209	-		hypothetical protein
ΦNE 04011			2101206	2101850	2101339			
ΦNE 04496			2101206	2101850	2101804			
ΦNE 04346	SAV1958		2101851	2102258	2101990	-		hypothetical protein
ΦNE 02206			2101851	2102258	2102065			
ΦNE 11129			2101851	2102258	2102094			
ΦNE 00548			2101851	2102258	2102209			
ΦNE 06209	SAV1959		2102255	2102659	2102403	-		hypothetical protein
ΦNE 05637			2102255	2102659	2102521			
ΦNE 13129	SAV1960		2102656	2103018	2102660	-		hypothetical protein
ΦNE 13157			2102656	2103018	2102660			
ΦNE 12074			2102656	2103018	2102812			
ΦNE 11198			2102656	2103018	2102898			
ΦNE 09323			2102656	2103018	2102987			
ΦNE 12540	SAV1962		2103276	2103560	2103483	-		hypothetical protein
ΦNE 11706	SAV1963		2103580	2104725	2103746	-		hypothetical protein
ΦNE 11652			2103580	2104725	2104031			
ΦNE 02544			2103580	2104725	2104137			
ΦNE 12660			2103580	2104725	2104340			
ΦNE 11213	SAV1964		2104749	2105486	2104825	-		hypothetical protein
ΦNE 09161			2104749	2105486	2104828			
ΦNE 11765			2104749	2105486	2105381			
ΦNE 06327	SAV1965		2105470	2106657	2105873	-		hypothetical protein
ΦNE 13045			2105470	2106657	2106298			
ΦNE 13473			2105470	2106657	2106597			
ΦNE 06277	SAV1966		2106673	2108334	2106966	-		hypothetical protein
ΦNE 08860			2106673	2108334	2107280			
ΦNE 06939			2106673	2108334	2108112			
ΦNE 04147			2106673	2108334	2108249			
ΦNE 07411			2106673	2108334	2108320			
ΦNE 09536	SAV1967		2108331	2108675	2108335	-		hypothetical protein
ΦNE 04974			2108331	2108675	2108431			
ΦNE 03672			2108331	2108675	2108603			
ΦNE 03674			2108331	2108675	2108603			
ΦNE 03131	SAV1968		2108805	2109104	2108948	-		hypothetical protein
ΦNE 03058			2108805	2109104	2109075			
ΦNE 15248	SAV1969		2109336	2109752	2109388	-		hypothetical protein
ΦNE 13638			2109336	2109752	2109529			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 00613			2109336	2109752	2109555			
ΦNE 00246	SAV1970		2109780	2109983	2109857	-		hypothetical protein
ΦNE 00311			2109780	2109983	2109857			
ΦNE 11426	SAV1974		2110561	2111130	2110686	-		dUTP pyrophosphatase
ΦNE 03622			2110561	2111130	2110715			
ΦNE 03628			2110561	2111130	2110715			
ΦNE 06446	SAV1976		2111319	2111555	2111537	-		hypothetical protein
ΦNE 05162	SAV1977		2111548	2111913	2111805	-		hypothetical protein
ΦNE 00630			2111548	2111913	2111888			
ΦNE 02679	SAV1978		2111928	2112170	2112082	-		hypothetical protein
ΦNE 11089	SAV1980		2112555	2112977	2112570	-		hypothetical protein
ΦNE 09359			2112555	2112977	2112685			
ΦNE 12532			2112555	2112977	2112700			
ΦNE 11768			2112555	2112977	2112709			
ΦNE 00143			2112555	2112977	2112710			
ΦNE 10871			2112555	2112977	2112821			
ΦNE 12718			2112555	2112977	2112821			
ΦNE 04158			2112555	2112977	2112864			
ΦNE 04765			2112555	2112977	2112865			
ΦNE 12958			2112555	2112977	2112867			
ΦNE 09027			2112555	2112977	2112904			
ΦNE 09203			2112555	2112977	2112904			
ΦNE 12138	SAV1981		2112968	2113186	2112975	-		hypothetical protein
ΦNE 00050			2112968	2113186	2113040			
ΦNE 02109	SAV1982		2113193	2114086	2113836	-		hypothetical protein
ΦNE 00349	SAV1983		2114116	2114586	2114427	-		single-strand DNA-binding protein
ΦNE 05258			2114116	2114586	2114438			
ΦNE 12674	SAV1984		2114587	2115072	2114592	-		hypothetical protein
ΦNE 03200	SAV1986		2116207	2118150	2117088	-		hypothetical protein
ΦNE 13591			2116207	2118150	2117495			
ΦNE 12926			2116207	2118150	2117522			
ΦNE 06292			2116207	2118150	2117860			
ΦNE 07923	SAV1987		2118159	2118422	2118349	-		hypothetical protein
ΦNE 06697	SAV1991		2119246	2119566	2119559	-		hypothetical protein
ΦNE 02683	SAV1992		2119618	2120253	2119728	+		hypothetical protein
ΦNE 01459			2119618	2120253	2120203			
ΦNE 11341	SAV1994		2120652	2121407	2120670	-		hypothetical protein
ΦNE 03814			2120652	2121407	2120714			
ΦNE 08536			2120652	2121407	2121138			
ΦNE 15273			2120652	2121407	2121360			
ΦNE 07174	SAV2001		2124619	2125083	2125001	+		hypothetical protein
ΦNE 09825			2124619	2125083	2125050			
ΦNE 06967			2124619	2125083	2125066			
ΦNE 13353	SAV2002	<i>int</i>	2125142	2126179	2125215	+		integrase
ΦNE 09742		<i>int</i>	2125142	2126179	2125595			
ΦNE 07339		<i>int</i>	2125142	2126179	2126059			
ΦNE 10642	SAV2003		2126191	2127060	2126360	+		truncated beta-hemplysin

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 06639			2126191	2127060	2126737			
ΦNE 04193			2126191	2127060	2126740			
ΦNE 09993			2126191	2127060	2126820			
ΦNE 08871			2126191	2127060	2127053			
ΦNE 02723	SAV2004		2127298	2128314	2127340	-		hypothetical protein
ΦNE 06289			2127298	2128314	2127364			
ΦNE 07361			2127298	2128314	2127418			
ΦNE 02595			2127298	2128314	2127767			
ΦNE 02607			2127298	2128314	2127767			
ΦNE 02608			2127298	2128314	2127767			
ΦNE 03288			2127298	2128314	2127880			
ΦNE 11907			2127298	2128314	2127880			
ΦNE 11331	SAV2005		2128336	2129391	2128513	-		hypothetical protein
ΦNE 13229			2128336	2129391	2128661			
ΦNE 13179			2128336	2129391	2129076			
ΦNE 09440	SAV2006		2129827	2131029	2129954	+		hypothetical protein
ΦNE 07300			2129827	2131029	2130349			
ΦNE 08720	SAV2007		2131337	2132644	2131514	+		hypothetical protein
ΦNE 11638			2131337	2132644	2131514			
ΦNE 12820			2131337	2132644	2131830			
ΦNE 03441			2131337	2132644	2132156			
ΦNE 09347			2131337	2132644	2132160			
ΦNE 11617			2131337	2132644	2132517			
ΦNE 12603	SAV2031		2150992	2151735	2151422	+		conserved hypothetical protein
ΦNE 05419	SAV2032		2151760	2153007	2152460	-		hypothetical protein
ΦNE 01679	SAV2033		2153204	2153830	2153340	+		conserved hypothetical protein
ΦNE 01944			2153204	2153830	2153376			
ΦNE 06409	SAV2034		2154191	2154976	2154530	+		hypothetical protein
ΦNE 01971			2154191	2154976	2154817			
ΦNE 04484			2154191	2154976	2154935			
ΦNE 06509	SAV2036	<i>agrB</i>	2155946	2156509	2156008	+		accessory gene regulator B
ΦNE 04055		<i>agrB</i>	2155946	2156509	2156088			
ΦNE 12177	SAV2038	<i>agrC</i>	2156853	2157968	2157912	+		accessory gene regulator C
ΦNE 03938	SAV2039	<i>agrA</i>	2157987	2158703	2158059	+		accessory gene regulator A
ΦNE 09613	SAV2040		2159075	2160034	2159300	-		hypothetical protein
ΦNE 15189			2159075	2160034	2159644			
ΦNE 03962			2159075	2160034	2159910			
ΦNE 03868	SAV2041	<i>scrB</i>	2160031	2161515	2160078	-		sucrose-6-phosphate hydrolase
ΦNE 06670		<i>scrB</i>	2160031	2161515	2161140			
ΦNE 02268	SAV2042	<i>scrR</i>	2161664	2162614	2161701	-		sucrose operon repressor
ΦNE 12879		<i>scrR</i>	2161664	2162614	2161918			
ΦNE 06232		<i>scrR</i>	2161664	2162614	2161987			
ΦNE 05101		<i>scrR</i>	2161664	2162614	2161990			
ΦNE 12507		<i>scrR</i>	2161664	2162614	2162045			
ΦNE 06283	SAV2043	<i>nrgA</i>	2162797	2164047	2162789	-	*	probabile ammonium transporter
ΦNE 14554		<i>nrgA</i>	2162797	2164047	2162790		*	
ΦNE 14468		<i>nrgA</i>	2162797	2164047	2162829			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 09626		<i>nrgA</i>	2162797	2164047	2162883			
ΦNE 07745		<i>nrgA</i>	2162797	2164047	2162917			
ΦNE 07935		<i>nrgA</i>	2162797	2164047	2163035			
ΦNE 09965		<i>nrgA</i>	2162797	2164047	2163077			
ΦNE 02624		<i>nrgA</i>	2162797	2164047	2163113			
ΦNE 02532		<i>nrgA</i>	2162797	2164047	2163215			
ΦNE 00075		<i>nrgA</i>	2162797	2164047	2163217			
ΦNE 07406		<i>nrgA</i>	2162797	2164047	2163298			
ΦNE 13113		<i>nrgA</i>	2162797	2164047	2163333			
ΦNE 11607		<i>nrgA</i>	2162797	2164047	2163408			
ΦNE 04946		<i>nrgA</i>	2162797	2164047	2163522			
ΦNE 10012		<i>nrgA</i>	2162797	2164047	2163531			
ΦNE 11062		<i>nrgA</i>	2162797	2164047	2164046			
ΦNE 12435	SAV2045		2164539	2165618	2164747	-		conserved hypothetical protein
ΦNE 03968			2164539	2165618	2164827			
ΦNE 07954			2164539	2165618	2165041			
ΦNE 02872			2164539	2165618	2165059			
ΦNE 04413			2164539	2165618	2165277			
ΦNE 13217			2164539	2165618	2165304			
ΦNE 13011			2164539	2165618	2165520			
ΦNE 04397	SAV2046		2165921	2166556	2166497	-		conserved hypothetical protein
ΦNE 11087	SAV2047	<i>vga</i>	2166809	2168737	2167179	+		hypothetical ABC transporter
ΦNE 02486		<i>vga</i>	2166809	2168737	2167956			
ΦNE 10273		<i>vga</i>	2166809	2168737	2168331			
ΦNE 10710	SAV2048		2169099	2170709	2169408	+		hypothetical protein
ΦNE 05103			2169099	2170709	2169469			
ΦNE 08692			2169099	2170709	2169571			
ΦNE 09927			2169099	2170709	2169812			
ΦNE 06756			2169099	2170709	2170171			
ΦNE 00752	SAV2053	<i>ilvD</i>	2174094	2175782	2174203	+		dihydroxy-acid dehydratase
ΦNE 06663		<i>ilvD</i>	2174094	2175782	2174441			
ΦNE 11077		<i>ilvD</i>	2174094	2175782	2174923			
ΦNE 06290		<i>ilvD</i>	2174094	2175782	2175442			
ΦNE 11288	SAV2054	<i>ilvB</i>	2175810	2177579	2176016	+		acetolactate synthase large subunit
ΦNE 08835		<i>ilvB</i>	2175810	2177579	2176092			
ΦNE 11983		<i>ilvB</i>	2175810	2177579	2176588			
ΦNE 10582		<i>ilvB</i>	2175810	2177579	2176606			
ΦNE 11886		<i>ilvB</i>	2175810	2177579	2176783			
ΦNE 02287		<i>ilvB</i>	2175810	2177579	2177018			
ΦNE 02664		<i>ilvB</i>	2175810	2177579	2177493			
ΦNE 10637		<i>ilvB</i>	2175810	2177579	2177577			
ΦNE 10637	SAV2055		2177579	2177833	2177577	+	*	hypothetical protein
ΦNE 10056			2177579	2177833	2177759			
ΦNE 12517	SAV2058	<i>leuB</i>	2180536	2181582	2180544	+		3-isopropylmalate dehydrogenase
ΦNE 03592		<i>leuB</i>	2180536	2181582	2180628			
ΦNE 08475		<i>leuB</i>	2180536	2181582	2181542			
ΦNE 11921	SAV2059	<i>leuC</i>	2181596	2182966	2182534	+		3-isopropylmalate dehydratase large subunit



Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 04802	SAV2060	<i>leuD</i>	2182967	2183539	2182963	+	*	3-isopropylmalate dehydratase small subunit
ΦNE 06357		<i>leuD</i>	2182967	2183539	2183169			
ΦNE 13106		<i>leuD</i>	2182967	2183539	2183460			
ΦNE 00820	SAV2061	<i>ilvA</i>	2183554	2184822	2183698	+		threonine dehydratase
ΦNE 11374		<i>ilvA</i>	2183554	2184822	2183777			
ΦNE 09079		<i>ilvA</i>	2183554	2184822	2183932			
ΦNE 03897		<i>ilvA</i>	2183554	2184822	2183979			
ΦNE 05169		<i>ilvA</i>	2183554	2184822	2184345			
ΦNE 11772		<i>ilvA</i>	2183554	2184822	2184439			
ΦNE 00010		<i>ilvA</i>	2183554	2184822	2184780			
ΦNE 12622		<i>ilvA</i>	2183554	2184822	2184828		*	
ΦNE 08635	SAV2062		2191620	2192075	2191620	-		conserved hypothetical protein
ΦNE 12383	SAV2063		2192068	2194218	2192273	-		conserved hypothetical protein
ΦNE 07484			2192068	2194218	2192421			
ΦNE 04740			2192068	2194218	2192558			
ΦNE 01890			2192068	2194218	2193488			
ΦNE 08030			2192068	2194218	2193547			
ΦNE 09958			2192068	2194218	2193848			
ΦNE 11094			2192068	2194218	2193910			
ΦNE 00789			2192068	2194218	2193912			
ΦNE 08677			2192068	2194218	2194013			
ΦNE 03805			2192068	2194218	2194034			
ΦNE 11175			2192068	2194218	2194036			
ΦNE 12693			2192068	2194218	2194078			
ΦNE 10513			2192068	2194218	2194177			
ΦNE 08891	SAV2064	<i>sigB</i>	2194652	2195422	2194806	-		sigma factor B
ΦNE 05387		<i>sigB</i>	2194652	2195422	2195088			
ΦNE 13410		<i>sigB</i>	2194652	2195422	2195129			
ΦNE 04540		<i>sigB</i>	2194652	2195422	2195280			
ΦNE 07757	SAV2065	<i>rsbW</i>	2195397	2195876	2195656	-		anti-sigmaB factor
ΦNE 06056	SAV2066	<i>rsbV</i>	2195878	2196204	2195971	-		anti-sigmaB factor antagonist
ΦNE 09149		<i>rsbV</i>	2195878	2196204	2196194			
ΦNE 14501	SAV2067	<i>rsbU</i>	2196323	2197324	2196644	-		sigmaB regulation protein
ΦNE 13666		<i>rsbU</i>	2196323	2197324	2196999			
ΦNE 13680		<i>rsbU</i>	2196323	2197324	2197005			
ΦNE 00527		<i>rsbU</i>	2196323	2197324	2197086			
ΦNE 11599		<i>rsbU</i>	2196323	2197324	2197126			
ΦNE 13280		<i>rsbU</i>	2196323	2197324	2197167			
ΦNE 15179	SAV2068		2197673	2198035	2197732	-		conserved hypothetical protein
ΦNE 12368			2197673	2198035	2197760			
ΦNE 15331			2197673	2198035	2197767			
ΦNE 04020			2197673	2198035	2197815			
ΦNE 12505			2197673	2198035	2197815			
ΦNE 03218			2197673	2198035	2197841			
ΦNE 00556			2197673	2198035	2198012			
ΦNE 08755			2197673	2198035	2198012			
ΦNE 04819	SAV2069		2198032	2198202	2198059	-		hypothetical protein

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 09718			2198032	2198202	2198156			
ΦNE 11585			2198032	2198202	2198204		*	
ΦNE 14652			2198032	2198202	2198204		*	
ΦNE 13708	SAV2070	<i>alr</i>	2198287	2199435	2198594	-		alanine racemase
ΦNE 13683	SAV2073		2200342	2201925	2200488	-		conserved hypothetical protein
ΦNE 02995			2200342	2201925	2200964			
ΦNE 04461			2200342	2201925	2201007			
ΦNE 13104			2200342	2201925	2201027			
ΦNE 11773			2200342	2201925	2201354			
ΦNE 14407			2200342	2201925	2201686			
ΦNE 03192	SAV2074		2201918	2202397	2202009	-		hypothetical protein
ΦNE 11874			2201918	2202397	2202012			
ΦNE 10901			2201918	2202397	2202211			
ΦNE 06506			2201918	2202397	2202299			
ΦNE 05113	SAV2075	<i>kdpC</i>	2202605	2203165	2202717	-		probable potassium-transporting ATPase C chain
ΦNE 09662		<i>kdpC</i>	2202605	2203165	2203055			
ΦNE 11944		<i>kdpC</i>	2202605	2203165	2203125			
ΦNE 02668	SAV2076	<i>kdpB</i>	2203185	2205212	2203440	-		probable potassium-transporting ATPase B chain
ΦNE 08660		<i>kdpB</i>	2203185	2205212	2204032			
ΦNE 12406		<i>kdpB</i>	2203185	2205212	2204035			
ΦNE 12407		<i>kdpB</i>	2203185	2205212	2204035			
ΦNE 04652		<i>kdpB</i>	2203185	2205212	2204280			
ΦNE 12197		<i>kdpB</i>	2203185	2205212	2204986			
ΦNE 09039		<i>kdpB</i>	2203185	2205212	2205037			
ΦNE 03183	SAV2077	<i>kdpA</i>	2205231	2206907	2205275	-		probable potassium-transporting ATPase A chain
ΦNE 10655		<i>kdpA</i>	2205231	2206907	2205982			
ΦNE 14531		<i>kdpA</i>	2205231	2206907	2205982			
ΦNE 12670		<i>kdpA</i>	2205231	2206907	2206732			
ΦNE 02877	SAV2078	<i>kdpD</i>	2207179	2209836	2207737	+		sensor protein
ΦNE 11994		<i>kdpD</i>	2207179	2209836	2207787			
ΦNE 00593		<i>kdpD</i>	2207179	2209836	2207998			
ΦNE 06755		<i>kdpD</i>	2207179	2209836	2208018			
ΦNE 03512		<i>kdpD</i>	2207179	2209836	2208026			
ΦNE 12891		<i>kdpD</i>	2207179	2209836	2208239			
ΦNE 10869		<i>kdpD</i>	2207179	2209836	2208338			
ΦNE 07778		<i>kdpD</i>	2207179	2209836	2208578			
ΦNE 11808		<i>kdpD</i>	2207179	2209836	2209291			
ΦNE 04128		<i>kdpD</i>	2207179	2209836	2209808			
ΦNE 03701		<i>kdpD</i>	2207179	2209836	2209831			
ΦNE 00503		<i>kdpD</i>	2207179	2209836	2209834			
ΦNE 04094	SAV2079	<i>kdpE</i>	2209836	2210531	2210425	+		KDP operon transcriptional regulatory protein
ΦNE 12590	SAV2081		2212403	2213923	2213013	-		hypothetical protein
ΦNE 09584	SAV2086		2218932	2219141	2218923	-	*	hypothetical protein
ΦNE 02828	SAV2087		2219153	2219446	2219232	-		conserved hypothetical protein
ΦNE 09428	SAV2088		2219612	2221096	2219621	+		hypothetical protein
ΦNE 03083			2219612	2221096	2219971			
ΦNE 00196			2219612	2221096	2220113			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 14553			2219612	2221096	2220335			
ΦNE 07540			2219612	2221096	2220637			
ΦNE 06337			2219612	2221096	2220863			
ΦNE 05295			2219612	2221096	2220897			
ΦNE 10615	SAV2091	<i>thiE</i>	2223542	2224183	2223872	-		thiamin phosphate synthase
ΦNE 10618		<i>thiE</i>	2223542	2224183	2223872			
ΦNE 11497		<i>thiE</i>	2223542	2224183	2223883			
ΦNE 12882	SAV2092	<i>thiM</i>	2224185	2224976	2224960	-		hydroxyethyl thiazole kinase
ΦNE 12882	SAV2093	<i>thiD</i>	2224960	2225790	2224960	-		phosphomethylpyrimidine kinase
ΦNE 08417		<i>thiD</i>	2224960	2225790	2225073			
ΦNE 11298		<i>thiD</i>	2224960	2225790	2225144			
ΦNE 11211		<i>thiD</i>	2224960	2225790	2225558			
ΦNE 01759		<i>thiD</i>	2224960	2225790	2225561			
ΦNE 13711		<i>thiD</i>	2224960	2225790	2225774			
ΦNE 05306	SAV2094		2225783	2226472	2225881	-		hypothetical protein
ΦNE 02677			2225783	2226472	2226089			
ΦNE 00834			2225783	2226472	2226122			
ΦNE 00426			2225783	2226472	2226325			
ΦNE 06531	SAV2096		2227943	2228338	2228057	-		hypothetical protein
ΦNE 05459			2227943	2228338	2228060			
ΦNE 02495			2227943	2228338	2228062			
ΦNE 09009			2227943	2228338	2228335			
ΦNE 02126	SAV2101		2230882	2231115	2231040	-		conserved hypothetical protein
ΦNE 02208	SAV2104	<i>atpG</i>	2233535	2234401	2234066	-		ATP synthase gamma chain
ΦNE 08119	SAV2111	<i>mnaA</i>	2238744	2239874	2238821	-		UDP-GlcNAc 2-epimerase
ΦNE 00209		<i>mnaA</i>	2238744	2239874	2238863			
ΦNE 14642		<i>mnaA</i>	2238744	2239874	2239850			
ΦNE 03277	SAV2112	<i>upp</i>	2239895	2240524	2240127	-		uracil phosphoribosyl transferase
ΦNE 09033	SAV2113	<i>glyA</i>	2240552	2241790	2241713	-		serine hydroxymethyl transferase
ΦNE 08850	SAV2114		2241817	2242341	2241924	-		conserved hypothetical protein
ΦNE 11642			2241817	2242341	2241983			
ΦNE 03186	SAV2115		2242448	2242867	2242537	-		hypothetical protein
ΦNE 03191			2242448	2242867	2242537			
ΦNE 05055	SAV2117		2243994	2244830	2244032	-		hypothetical protein
ΦNE 03531			2243994	2244830	2244271			
ΦNE 08127	SAV2119	<i>tdk</i>	2245894	2246493	2246234	-		thymidine kinase
ΦNE 10641	SAV2121	<i>rho</i>	2247212	2248528	2247475	-		transcription termination factor Rho
ΦNE 04809		<i>rho</i>	2247212	2248528	2247660			
ΦNE 10653		<i>rho</i>	2247212	2248528	2247705			
ΦNE 07423		<i>rho</i>	2247212	2248528	2247780			
ΦNE 02746		<i>rho</i>	2247212	2248528	2247859			
ΦNE 04536		<i>rho</i>	2247212	2248528	2248263			
ΦNE 08915		<i>rho</i>	2247212	2248528	2248312			
ΦNE 04296		<i>rho</i>	2247212	2248528	2248318			
ΦNE 04684		<i>rho</i>	2247212	2248528	2248318			
ΦNE 01625		<i>rho</i>	2247212	2248528	2248327			
ΦNE 13781		<i>rho</i>	2247212	2248528	2248327			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 11444		<i>rho</i>	2247212	2248528	2248350			
ΦNE 09187		<i>rho</i>	2247212	2248528	2248384			
ΦNE 03903	SAV2122		2248775	2250202	2249033	-		hypothetical protein
ΦNE 12558			2248775	2250202	2249772			
ΦNE 07480	SAV2123		2250440	2250778	2250697	-		conserved hypothetical protein
ΦNE 13125			2250440	2250778	2250736			
ΦNE 01548	SAV2124	<i>murZ</i>	2250864	2252123	2251399	-		UDP-N-acetylglucosamine 1-carboxylvinyl transferase 2
ΦNE 01549		<i>murZ</i>	2250864	2252123	2251399			
ΦNE 01588		<i>murZ</i>	2250864	2252123	2251399			
ΦNE 01605		<i>murZ</i>	2250864	2252123	2251399			
ΦNE 04316		<i>murZ</i>	2250864	2252123	2251401			
ΦNE 04714		<i>murZ</i>	2250864	2252123	2251541			
ΦNE 01447	SAV2129		2256885	2257745	2257371	-		hypothetical protein
ΦNE 00608			2256885	2257745	2257634			
ΦNE 09408	SAV2131		2259104	2259775	2259446	-		hypothetical protein
ΦNE 08895	SAV2132		2260174	2261367	2260319	-		hypothetical protein
ΦNE 11744			2260174	2261367	2260615			
ΦNE 14419			2260174	2261367	2261243			
ΦNE 11140			2260174	2261367	2261287			
ΦNE 09186	SAV2133	<i>hmrA</i>	2261367	2262551	2261672	-		HmrA
ΦNE 01579		<i>hmrA</i>	2261367	2262551	2261798			
ΦNE 07765		<i>hmrA</i>	2261367	2262551	2262132			
ΦNE 03816		<i>hmrA</i>	2261367	2262551	2262501			
ΦNE 15294	SAV2134	<i>luxS</i>	2262862	2263332	2263196	+		autoinducer-2 production protein
ΦNE 11493	SAV2135		2263484	2263834	2263615	-		conserved hypothetical protein
ΦNE 11538			2263484	2263834	2263825			
ΦNE 00230	SAV2136	<i>pdp</i>	2263848	2265188	2264555	-		pyrimidine nucleoside phosphorylase
ΦNE 11366		<i>pdp</i>	2263848	2265188	2264555			
ΦNE 04729		<i>pdp</i>	2263848	2265188	2264696			
ΦNE 03771	SAV2137		2265428	2266090	2265459	-		deoxyribose-phosphate aldolase
ΦNE 04697			2265428	2266090	2265940			
ΦNE 08131	SAV2138	<i>deoD</i>	2266404	2267114	2266461	+		purine nucleoside phosphorylase
ΦNE 00644		<i>deoD</i>	2266404	2267114	2266860			
ΦNE 02008		<i>deoD</i>	2266404	2267114	2266974			
ΦNE 11386		<i>deoD</i>	2266404	2267114	2267100			
ΦNE 13004	SAV2142		2270793	2271023	2270921	-		hypothetical protein
ΦNE 11342	SAV2143		2271054	2271992	2271470	-		hypothetical protein
ΦNE 00297			2271054	2271992	2271986			
ΦNE 01875	SAV2144		2272428	2273093	2273057	-		conserved hypothetical protein
ΦNE 13492	SAV2145	<i>czrA</i>	2273245	2273565	2273513	+		repressor protein
ΦNE 13346		<i>czrA</i>	2273245	2273565	2273530			
ΦNE 00173	SAV2146	<i>czrB</i>	2273567	2274544	2273664	+		cation-efflux system membrane protein homolog
ΦNE 14517		<i>czrB</i>	2273567	2274544	2274029			
ΦNE 02876		<i>czrB</i>	2273567	2274544	2274236			
ΦNE 09812		<i>czrB</i>	2273567	2274544	2274382			
ΦNE 01487		<i>czrB</i>	2273567	2274544	2274429			
ΦNE 04069	SAV2147		2274810	2275901	2274937	+		lytic regulatory protein truncated with Tn554

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 09622			2274810	2275901	2275132			
ΦNE 01507			2274810	2275901	2275294			
ΦNE 14662	SAV2152		2277934	2278791	2278055	-		conserved hypothetical protein
ΦNE 12714			2277934	2278791	2278280			
ΦNE 06880	SAV2153		2278859	2279641	2279091	-		hypothetical protein
ΦNE 09672			2278859	2279641	2279379			
ΦNE 11623			2278859	2279641	2279403			
ΦNE 08466			2278859	2279641	2279523			
ΦNE 09777			2278859	2279641	2279631			
ΦNE 01551	SAV2156	<i>mtlF</i>	2282359	2283897	2282419	+		mannitol specific IIBC component of PTS system
ΦNE 03006		<i>mtlF</i>	2282359	2283897	2282647			
ΦNE 05248		<i>mtlF</i>	2282359	2283897	2283437			
ΦNE 08676	SAV2157		2283932	2286064	2284357	+		hypothetical protein
ΦNE 15337			2283932	2286064	2284913			
ΦNE 04123			2283932	2286064	2284934			
ΦNE 11023			2283932	2286064	2284996			
ΦNE 12774	SAV2158	<i>mtlA</i>	2286076	2286510	2286392	+		PTS system, mannitol specific IIA component
ΦNE 05401	SAV2159	<i>mtlD</i>	2286510	2287616	2287097	+		mannitol-1-phosphate 5-dehydrogenase
ΦNE 09210		<i>mtlD</i>	2286510	2287616	2287302			
ΦNE 06251		<i>mtlD</i>	2286510	2287616	2287409			
ΦNE 09420		<i>mtlD</i>	2286510	2287616	2287419			
ΦNE 09280	SAV2160	<i>fmtB(mrp)</i>	2287935	2295380	2287990	-		FmtB protein
ΦNE 04354		<i>fmtB(mrp)</i>	2287935	2295380	2288641			
ΦNE 11254		<i>fmtB(mrp)</i>	2287935	2295380	2288708			
ΦNE 07408		<i>fmtB(mrp)</i>	2287935	2295380	2289189			
ΦNE 07395		<i>fmtB(mrp)</i>	2287935	2295380	2289200			
ΦNE 07398		<i>fmtB(mrp)</i>	2287935	2295380	2289200			
ΦNE 14699		<i>fmtB(mrp)</i>	2287935	2295380	2289653			
ΦNE 00057		<i>fmtB(mrp)</i>	2287935	2295380	2290443			
ΦNE 10662		<i>fmtB(mrp)</i>	2287935	2295380	2290760			
ΦNE 09935		<i>fmtB(mrp)</i>	2287935	2295380	2290800			
ΦNE 02138		<i>fmtB(mrp)</i>	2287935	2295380	2291860			
ΦNE 14507		<i>fmtB(mrp)</i>	2287935	2295380	2292229			
ΦNE 06206		<i>fmtB(mrp)</i>	2287935	2295380	2292317			
ΦNE 14565		<i>fmtB(mrp)</i>	2287935	2295380	2292652			
ΦNE 06719		<i>fmtB(mrp)</i>	2287935	2295380	2292728			
ΦNE 11679		<i>fmtB(mrp)</i>	2287935	2295380	2293214			
ΦNE 06152		<i>fmtB(mrp)</i>	2287935	2295380	2293585			
ΦNE 06158		<i>fmtB(mrp)</i>	2287935	2295380	2293585			
ΦNE 09670		<i>fmtB(mrp)</i>	2287935	2295380	2294043			
ΦNE 13098		<i>fmtB(mrp)</i>	2287935	2295380	2294151			
ΦNE 04909		<i>fmtB(mrp)</i>	2287935	2295380	2294324			
ΦNE 11008		<i>fmtB(mrp)</i>	2287935	2295380	2294576			
ΦNE 14053		<i>fmtB(mrp)</i>	2287935	2295380	2294777			
ΦNE 09330	SAV2161	<i>glmM(femD)</i>	2295658	2297013	2296079	-		phosphoglucosamine-mutase
ΦNE 09505	SAV2162		2297040	2297972	2297051	-		conserved hypothetical protein
ΦNE 11545			2297040	2297972	2297099			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 13821			2297040	2297972	2297658			
ΦNE 10979	SAV2164	<i>arg</i>	2298972	2299880	2298977	-		arginase
ΦNE 09246		<i>arg</i>	2298972	2299880	2299853			
ΦNE 01990		<i>rRNA-23S</i>			2300935			
ΦNE 02023		<i>rRNA-23S</i>			2302735			
ΦNE 01955		<i>rRNA-16S</i>			2305514			
ΦNE 10407	SAV2166		2307333	2308775	2307345	-		hypothetical protein
ΦNE 04726			2307333	2308775	2307346			
ΦNE 09240			2307333	2308775	2308096			
ΦNE 01617			2307333	2308775	2308161			
ΦNE 14530			2307333	2308775	2308605			
ΦNE 08740			2307333	2308775	2308683			
ΦNE 10377	SAV2167		2309098	2309571	2309114	-		hypothetical protein
ΦNE 07474			2309098	2309571	2309136			
ΦNE 00329			2309098	2309571	2309202			
ΦNE 03220			2309098	2309571	2309410			
ΦNE 05118			2309098	2309571	2309448			
ΦNE 03603			2309098	2309571	2309525			
ΦNE 03228	SAV2168		2309670	2310191	2309673	-		putative multidrug transporter
ΦNE 01945			2309670	2310191	2310017			
ΦNE 03831	SAV2169		2310155	2310814	2310155	-		hypothetical protein
ΦNE 12451			2310155	2310814	2310337			
ΦNE 14595			2310155	2310814	2310357			
ΦNE 03806			2310155	2310814	2310523			
ΦNE 02101			2310155	2310814	2310534			
ΦNE 07951	SAV2170		2310970	2311656	2311460	-		hypothetical protein
ΦNE 04933			2310970	2311656	2311496			
ΦNE 12401			2310970	2311656	2311655			
ΦNE 03929	SAV2171		2311672	2312859	2311799	-		hypothetical protein
ΦNE 09215			2311672	2312859	2312087			
ΦNE 07502			2311672	2312859	2312475			
ΦNE 08769			2311672	2312859	2312724			
ΦNE 12456	SAV2172		2312903	2313418	2312932	-		conserved hypothetical protein
ΦNE 13381			2312903	2313418	2312937			
ΦNE 13416			2312903	2313418	2312966			
ΦNE 04558			2312903	2313418	2313310			
ΦNE 00602	SAV2174		2313924	2315294	2313959	-		conserved hypothetical protein
ΦNE 07383			2313924	2315294	2314113			
ΦNE 11690			2313924	2315294	2314129			
ΦNE 00414			2313924	2315294	2314684			
ΦNE 06566			2313924	2315294	2314762			
ΦNE 11619			2313924	2315294	2314868			
ΦNE 06675			2313924	2315294	2315056			
ΦNE 06676			2313924	2315294	2315056			
ΦNE 06356			2313924	2315294	2315129			
ΦNE 03244			2313924	2315294	2315242			
ΦNE 02878	SAV2175		2315530	2316498	2315948	-		hypothetical protein

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 02884			2315530	2316498	2315948			
ΦNE 08117			2315530	2316498	2316019			
ΦNE 03504			2315530	2316498	2316041			
ΦNE 04180			2315530	2316498	2316317			
ΦNE 09698			2315530	2316498	2316388			
ΦNE 09717			2315530	2316498	2316388			
ΦNE 05526	SAV2176		2316495	2317526	2316608	-		hypothetical protein
ΦNE 06607			2316495	2317526	2316755			
ΦNE 10535			2316495	2317526	2317007			
ΦNE 07448			2316495	2317526	2317109			
ΦNE 09257			2316495	2317526	2317131			
ΦNE 08990	SAV2177		2317538	2318521	2317875	-		hypothetical protein
ΦNE 06699			2317538	2318521	2317880			
ΦNE 12756	SAV2178		2318913	2319983	2318990	-		conserved hypothetical protein
ΦNE 13716			2318913	2319983	2319154			
ΦNE 00049			2318913	2319983	2319771			
ΦNE 12545	SAV2179		2319990	2321747	2321548	-		conserved hypothetical protein
ΦNE 12547			2319990	2321747	2321548			
ΦNE 12559			2319990	2321747	2321548			
ΦNE 11814	SAV2180		2321734	2322927	2321813	-		hypothetical protein
ΦNE 00252			2321734	2322927	2322248			
ΦNE 05624			2321734	2322927	2322393			
ΦNE 02896			2321734	2322927	2322402			
ΦNE 11608			2321734	2322927	2322506			
ΦNE 08977	SAV2181		2323029	2325005	2323538	+		hypothetical protein
ΦNE 11381			2323029	2325005	2323879			
ΦNE 11653			2323029	2325005	2324342			
ΦNE 10198			2323029	2325005	2324504			
ΦNE 11306	SAV2184		2325990	2326526	2326348	-		hypothetical protein
ΦNE 03969	SAV2185		2326701	2328263	2327048	-		glycine betaine transporter opuD homolog
ΦNE 02520			2326701	2328263	2327464			
ΦNE 09843			2326701	2328263	2327479			
ΦNE 14647			2326701	2328263	2327486			
ΦNE 07372			2326701	2328263	2327765			
ΦNE 10709			2326701	2328263	2327820			
ΦNE 06255	SAV2186		2328571	2329578	2328820	-		hypothetical protein
ΦNE 11621			2328571	2329578	2328884			
ΦNE 10701			2328571	2329578	2329345			
ΦNE 00377	SAV2187		2329813	2330814	2329989	-		hypothetical protein
ΦNE 00323			2329813	2330814	2330033			
ΦNE 11314			2329813	2330814	2330039			
ΦNE 00615			2329813	2330814	2330709			
ΦNE 11943	SAV2188		2331092	2331961	2331221	-		conserved hypothetical protein
ΦNE 05259			2331092	2331961	2331340			
ΦNE 04401			2331092	2331961	2331396			
ΦNE 10622	SAV2189	<i>lacG</i>	2332227	2333639	2332411	-		6-phospho-beta-galactosidase
ΦNE 15318		<i>lacG</i>	2332227	2333639	2332446			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 08395		<i>lacG</i>	2332227	2333639	2332808			
ΦNE 04314		<i>lacG</i>	2332227	2333639	2332886			
ΦNE 14399		<i>lacG</i>	2332227	2333639	2333132			
ΦNE 05243		<i>lacG</i>	2332227	2333639	2333358			
ΦNE 09001	SAV2190	<i>lacE</i>	2333657	2335369	2333778	-		PTS system, lactose-specific IIBC component
ΦNE 11521		<i>lacE</i>	2333657	2335369	2333991			
ΦNE 08745		<i>lacE</i>	2333657	2335369	2334180			
ΦNE 13796		<i>lacE</i>	2333657	2335369	2334841			
ΦNE 06472		<i>lacE</i>	2333657	2335369	2335303			
ΦNE 11685		<i>lacE</i>	2333657	2335369	2335305			
ΦNE 06631	SAV2191	<i>lacF</i>	2335375	2335686	2335691	-	*	PTS system, lactose-specific IIA component
ΦNE 03563	SAV2192	<i>lacD</i>	2335708	2336688	2335784	-		tagatose 1,6-diphosphate aldolase
ΦNE 08603		<i>lacD</i>	2335708	2336688	2336300			
ΦNE 09340	SAV2193	<i>lacC</i>	2336692	2337624	2337089	-		tagatose-6-phosphate kinase
ΦNE 02796		<i>lacC</i>	2336692	2337624	2337209			
ΦNE 12681		<i>lacC</i>	2336692	2337624	2337377			
ΦNE 00103	SAV2194	<i>lacB</i>	2337637	2338152	2337722	-		galactose-6-phosphate isomerase LacB subunit
ΦNE 03251		<i>lacB</i>	2337637	2338152	2337894			
ΦNE 11333	SAV2197		2339969	2340700	2340332	+		hypothetical protein
ΦNE 00445			2339969	2340700	2340405			
ΦNE 10928			2339969	2340700	2340536			
ΦNE 09119	SAV2200		2341421	2342269	2341570	-		hypothetical protein
ΦNE 15274	SAV2201		2342339	2342755	2342523	-		hypothetical protein
ΦNE 03517	SAV2202	<i>hysA</i>	2343163	2345592	2343173	+		hyaluronate lyase precursor
ΦNE 07810		<i>hysA</i>	2343163	2345592	2343213			
ΦNE 09175		<i>hysA</i>	2343163	2345592	2343330			
ΦNE 12632		<i>hysA</i>	2343163	2345592	2344019			
ΦNE 12734		<i>hysA</i>	2343163	2345592	2344495			
ΦNE 07492		<i>hysA</i>	2343163	2345592	2344531			
ΦNE 05181		<i>hysA</i>	2343163	2345592	2344645			
ΦNE 09176		<i>hysA</i>	2343163	2345592	2345140			
ΦNE 12358		<i>hysA</i>	2343163	2345592	2345249			
ΦNE 09278		<i>hysA</i>	2343163	2345592	2345553			
ΦNE 08970	SAV2203		2345652	2346506	2345768	-		conserved hypothetical protein
ΦNE 12521			2345652	2346506	2345768			
ΦNE 12117			2345652	2346506	2346414			
ΦNE 04489	SAV2204		2346717	2347532	2347084	-		conserved hypothetical protein
ΦNE 02906			2346717	2347532	2347201			
ΦNE 08826	SAV2206		2348636	2349340	2349110	-		hypothetical protein
ΦNE 11932	SAV2207	<i>alsS</i>	2349377	2351041	2350115	-		alpha-acetolactate synthase
ΦNE 08611		<i>alsS</i>	2349377	2351041	2350642			
ΦNE 01630		<i>alsS</i>	2349377	2351041	2350750			
ΦNE 05445		<i>alsS</i>	2349377	2351041	2350750			
ΦNE 03959		<i>alsS</i>	2349377	2351041	2350804			
ΦNE 12811		<i>alsS</i>	2349377	2351041	2350902			
ΦNE 06362	SAV2219	<i>truA</i>	2360488	2361291	2361035	-		tRNA pseudouridine synthase A
ΦNE 05576	SAV2252		2378567	2378956	2378726	+		hypothetical protein



Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 06866			2378567	2378956	2378762			
ΦNE 14302			2378567	2378956	2378871			
ΦNE 06286			2378567	2378956	2378895			
ΦNE 01570			2378567	2378956	2378935			
ΦNE 12745	SAV2253		2379147	2380481	2379386	-		conserved hypothetical protein
ΦNE 00068			2379147	2380481	2379974			
ΦNE 05204			2379147	2380481	2379979			
ΦNE 05438			2379147	2380481	2380133			
ΦNE 09409			2379147	2380481	2380191			
ΦNE 05017	SAV2254	<i>topB</i>	2380594	2382729	2381734	-		DNA topoisomerase III topB
ΦNE 13837		<i>topB</i>	2380594	2382729	2381734			
ΦNE 12573		<i>topB</i>	2380594	2382729	2381768			
ΦNE 11561		<i>topB</i>	2380594	2382729	2381855			
ΦNE 07127		<i>topB</i>	2380594	2382729	2381870			
ΦNE 04663		<i>topB</i>	2380594	2382729	2381897			
ΦNE 03690		<i>topB</i>	2380594	2382729	2381900			
ΦNE 12971		<i>topB</i>	2380594	2382729	2382131			
ΦNE 13163		<i>topB</i>	2380594	2382729	2382131			
ΦNE 13550		<i>topB</i>	2380594	2382729	2382131			
ΦNE 13552		<i>topB</i>	2380594	2382729	2382131			
ΦNE 05391		<i>topB</i>	2380594	2382729	2382187			
ΦNE 04643		<i>topB</i>	2380594	2382729	2382262			
ΦNE 12279		<i>topB</i>	2380594	2382729	2382690			
ΦNE 04767		<i>topB</i>	2380594	2382729	2382717			
ΦNE 11660	SAV2255		2382814	2383791	2383516	+		conserved hypothetical protein
ΦNE 03598			2382814	2383791	2383557			
ΦNE 01500	SAV2256		2383972	2384835	2384236	+		glucose uptake protein homolog
ΦNE 00123			2383972	2384835	2384473			
ΦNE 07706			2383972	2384835	2384810			
ΦNE 02909	SAV2258		2385490	2386398	2385685	-		conserved hypothetical protein
ΦNE 02917			2385490	2386398	2385685			
ΦNE 02745			2385490	2386398	2385690			
ΦNE 06951			2385490	2386398	2385729			
ΦNE 01901			2385490	2386398	2385755			
ΦNE 10666			2385490	2386398	2385871			
ΦNE 11869			2385490	2386398	2385898			
ΦNE 07061			2385490	2386398	2386197			
ΦNE 11883	SAV2261		2387441	2390608	2388535	-		hypothetical protein
ΦNE 00283			2387441	2390608	2388663			
ΦNE 05054			2387441	2390608	2389165			
ΦNE 07468			2387441	2390608	2389249			
ΦNE 00436			2387441	2390608	2389336			
ΦNE 03285			2387441	2390608	2389671			
ΦNE 10966	SAV2265		2393548	2393988	2393633	+		hypothetical protein
ΦNE 13918			2393548	2393988	2393638			
ΦNE 03874	SAV2266		2393981	2395192	2394434	+		hypothetical protein
ΦNE 04875			2393981	2395192	2394467			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 04394			2393981	2395192	2394682			
ΦNE 13333			2393981	2395192	2394751			
ΦNE 01597			2393981	2395192	2394789			
ΦNE 06524			2393981	2395192	2394872			
ΦNE 07695			2393981	2395192	2395000			
ΦNE 13636	SAV2268	<i>moaA</i>	2396221	2397243	2396489	-		molybdenum cofactor biosynthesis protein A
ΦNE 11964		<i>moaA</i>	2396221	2397243	2396687			
ΦNE 11592		<i>moaA</i>	2396221	2397243	2396994			
ΦNE 05250		<i>moaA</i>	2396221	2397243	2397048			
ΦNE 09182	SAV2269	<i>mobA</i>	2397263	2397862	2397258	-	*	molybdopterin-guanine dinucleotide biosynthesis
ΦNE 10620		<i>mobA</i>	2397263	2397862	2397409			
ΦNE 04699		<i>mobA</i>	2397263	2397862	2397757			
ΦNE 03509	SAV2270	<i>moaD</i>	2397869	2398102	2398066	-		probable molybdopterin synthase small subunit
ΦNE 01567	SAV2271	<i>moaE</i>	2398108	2398554	2398353	-		molybdopterin converting factor
ΦNE 03209		<i>moaE</i>	2398108	2398554	2398399			
ΦNE 11375	SAV2273	<i>moeA</i>	2399050	2400309	2399100	-		molybdopterin biosynthesis protein
ΦNE 12113		<i>moeA</i>	2399050	2400309	2399208			
ΦNE 13820		<i>moeA</i>	2399050	2400309	2399211			
ΦNE 14649		<i>moeA</i>	2399050	2400309	2399927			
ΦNE 00662		<i>moeA</i>	2399050	2400309	2399930			
ΦNE 12616	SAV2274	<i>moaC</i>	2400372	2400866	2400519	+		molybdenum cofactor biosynthesis protein C
ΦNE 12987		<i>moaC</i>	2400372	2400866	2400561			
ΦNE 03257		<i>moaC</i>	2400372	2400866	2400623			
ΦNE 12467	SAV2276	<i>moeB</i>	2401405	2402409	2401931	-		molybdopterin biosynthesis protein
ΦNE 04648	SAV2277	<i>modC</i>	2402579	2403184	2403043	-		molybdenum transport ATP-binding protein
ΦNE 02985	SAV2279		2403826	2404038	2403961	+		probable molybdate-binding protein
ΦNE 04839	SAV2280	<i>narQ</i>	2404380	2405177	2404457	+		FdhD protein homolog
ΦNE 05029		<i>narQ</i>	2404380	2405177	2404457			
ΦNE 09544		<i>narQ</i>	2404380	2405177	2404579			
ΦNE 07077		<i>narQ</i>	2404380	2405177	2404648			
ΦNE 03843	SAV2281		2405349	2406119	2406093	-		hypothetical protein
ΦNE 08709			2405349	2406119	2406093			
ΦNE 09551			2405349	2406119	2406106			
ΦNE 04375	SAV2283		2406871	2407812	2406924	-		hypothetical protein
ΦNE 03239			2406871	2407812	2407374			
ΦNE 11554	SAV2284		2408210	2409118	2408265	-		hypothetical protein
ΦNE 06626			2408210	2409118	2408277			
ΦNE 13637			2408210	2409118	2408509			
ΦNE 03275	SAV2285		2409332	2410486	2410380	-		hypothetical protein
ΦNE 02966	SAV2287		2410703	2411608	2411059	-		hypothetical protein
ΦNE 14486			2410703	2411608	2411320			
ΦNE 05057			2410703	2411608	2411530			
ΦNE 03011			2410703	2411608	2411560			
ΦNE 15250	SAV2288	<i>ureA</i>	2411868	2412170	2412174	+	*	urease gamma subunit
ΦNE 15250	SAV2289	<i>ureB</i>	2412184	2412594	2412174	+	*	urease beta subunit
ΦNE 07749		<i>ureB</i>	2412184	2412594	2412351			
ΦNE 05068	SAV2290	<i>ureC</i>	2412591	2414306	2412913	+		urease alpha subunit

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 00837		<i>ureC</i>	2412591	2414306	2413999			
ΦNE 02942		<i>ureC</i>	2412591	2414306	2414231			
ΦNE 09184	SAV2292	<i>ureF</i>	2414764	2415453	2415230	+		urease accessory protein
ΦNE 14054		<i>ureF</i>	2414764	2415453	2415310			
ΦNE 14482	SAV2293	<i>ureG</i>	2415466	2416080	2415749	+		urease accessory protein
ΦNE 01475		<i>ureG</i>	2415466	2416080	2415763			
ΦNE 14648		<i>ureG</i>	2415466	2416080	2415882			
ΦNE 12725	SAV2294	<i>ureD</i>	2416272	2416916	2416333	+		urease accessory protein
ΦNE 03045	SAV2297		2418270	2419013	2418646	-		hypothetical protein
ΦNE 11387			2418270	2419013	2418707			
ΦNE 06774	SAV2298		2419039	2420994	2419175	-		hypothetical protein
ΦNE 10717			2419039	2420994	2419208			
ΦNE 10804			2419039	2420994	2419323			
ΦNE 03399			2419039	2420994	2419732			
ΦNE 06159			2419039	2420994	2419854			
ΦNE 13119			2419039	2420994	2420360			
ΦNE 03776			2419039	2420994	2420432			
ΦNE 02820			2419039	2420994	2420598			
ΦNE 10716			2419039	2420994	2420715			
ΦNE 13598			2419039	2420994	2420793			
ΦNE 03952			2419039	2420994	2420900			
ΦNE 03230			2419039	2420994	2420925			
ΦNE 09996	SAV2300		2422425	2422553	2422450	-		hypothetical protein
ΦNE 09197	SAV2301		2422841	2424241	2422879	-		hypothetical protein
ΦNE 00354			2422841	2424241	2422915			
ΦNE 06511			2422841	2424241	2423160			
ΦNE 10267			2422841	2424241	2423186			
ΦNE 10990			2422841	2424241	2423218			
ΦNE 04678			2422841	2424241	2423359			
ΦNE 05291			2422841	2424241	2423533			
ΦNE 03158			2422841	2424241	2423688			
ΦNE 11699			2422841	2424241	2423695			
ΦNE 02916			2422841	2424241	2423778			
ΦNE 11716	SAV2302		2424336	2425418	2424922	-		hypothetical protein
ΦNE 05455	SAV2304		2426325	2426825	2426514	+		hypothetical protein
ΦNE 09630	SAV2305		2427186	2428139	2427190	+		hypothetical protein
ΦNE 11098			2427186	2428139	2427921			
ΦNE 09992	SAV2306		2428231	2429355	2428303	-		hypothetical protein
ΦNE 12425			2428231	2429355	2428416			
ΦNE 11352			2428231	2429355	2428746			
ΦNE 07910			2428231	2429355	2428802			
ΦNE 05523			2428231	2429355	2428863			
ΦNE 03759			2428231	2429355	2428929			
ΦNE 09916			2428231	2429355	2428994			
ΦNE 06775			2428231	2429355	2429112			
ΦNE 07399			2428231	2429355	2429112			
ΦNE 11146			2428231	2429355	2429195			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 09134	SAV2307		2429666	2430442	2430373	-		hypothetical protein
ΦNE 14520	SAV2308		2430925	2431398	2431160	-		conserved hypothetical protein
ΦNE 07728	SAV2309		2431398	2434352	2431625	-		formate dehydrogenase homolog
ΦNE 02123			2431398	2434352	2431976			
ΦNE 12601			2431398	2434352	2432603			
ΦNE 11680			2431398	2434352	2432743			
ΦNE 04836			2431398	2434352	2432992			
ΦNE 07161			2431398	2434352	2433079			
ΦNE 06344			2431398	2434352	2433168			
ΦNE 07944			2431398	2434352	2433232			
ΦNE 07435			2431398	2434352	2433353			
ΦNE 07293			2431398	2434352	2433406			
ΦNE 11081			2431398	2434352	2434068			
ΦNE 03707	SAV2310		2434955	2435902	2435772	-		hypothetical protein
ΦNE 13576	SAV2311		2436035	2436832	2436038	-		hypothetical protein
ΦNE 05647			2436035	2436832	2436475			
ΦNE 05648			2436035	2436832	2436475			
ΦNE 13415			2436035	2436832	2436475			
ΦNE 03164			2436035	2436832	2436524			
ΦNE 11659			2436035	2436832	2436697			
ΦNE 10183	SAV2313		2437934	2438671	2437950	-		hypothetical protein
ΦNE 11440			2437934	2438671	2438139			
ΦNE 06248			2437934	2438671	2438180			
ΦNE 06318			2437934	2438671	2438193			
ΦNE 11367			2437934	2438671	2438217			
ΦNE 12135			2437934	2438671	2438326			
ΦNE 00848			2437934	2438671	2438345			
ΦNE 12984			2437934	2438671	2438367			
ΦNE 12172			2437934	2438671	2438462			
ΦNE 09178			2437934	2438671	2438561			
ΦNE 04299			2437934	2438671	2438564			
ΦNE 03658			2437934	2438671	2438604			
ΦNE 09064			2437934	2438671	2438634			
ΦNE 12825			2437934	2438671	2438635			
ΦNE 02969	SAV2314		2438720	2439049	2438895	+		hypothetical protein
ΦNE 05372	SAV2315		2439494	2440366	2439518	+		hypothetical protein
ΦNE 10942			2439494	2440366	2440002			
ΦNE 02289			2439494	2440366	2440086			
ΦNE 13744	SAV2316		2440753	2442132	2440887	-		hypothetical protein
ΦNE 13793			2440753	2442132	2440887			
ΦNE 13797			2440753	2442132	2440887			
ΦNE 13810			2440753	2442132	2440887			
ΦNE 13823			2440753	2442132	2440887			
ΦNE 13836			2440753	2442132	2440887			
ΦNE 13842			2440753	2442132	2440887			
ΦNE 13844			2440753	2442132	2440887			
ΦNE 13848			2440753	2442132	2440887			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 13855			2440753	2442132	2440887			
ΦNE 13845			2440753	2442132	2440888			
ΦNE 13851			2440753	2442132	2440890			
ΦNE 11847			2440753	2442132	2440893			
ΦNE 04443			2440753	2442132	2440903			
ΦNE 14572			2440753	2442132	2441240			
ΦNE 01488			2440753	2442132	2441265			
ΦNE 13109			2440753	2442132	2441652			
ΦNE 11066			2440753	2442132	2441654			
ΦNE 14409	SAV2317		2442412	2442768	2442511	+		hypothetical protein
ΦNE 10856			2442412	2442768	2442567			
ΦNE 10918	SAV2318		2442765	2442950	2442909	+		hypothetical protein
ΦNE 04077			2442765	2442950	2442941			
ΦNE 12860	SAV2320		2443248	2443883	2443819	-		hypothetical protein
ΦNE 13016	SAV2321		2443958	2444875	2443949	-	*	hypothetical protein
ΦNE 09522			2443958	2444875	2443999			
ΦNE 03233			2443958	2444875	2444325			
ΦNE 12634			2443958	2444875	2444400			
ΦNE 09158			2443958	2444875	2444533			
ΦNE 12342	SAV2322		2445143	2445673	2445649	+		hypothetical protein
ΦNE 12084	SAV2323	<i>glvC</i>	2445739	2447343	2445809	-		PTS system, arbutin-like IIBC component
ΦNE 08461		<i>glvC</i>	2445739	2447343	2445986			
ΦNE 13046		<i>glvC</i>	2445739	2447343	2446457			
ΦNE 09671		<i>glvC</i>	2445739	2447343	2446548			
ΦNE 08862		<i>glvC</i>	2445739	2447343	2446642			
ΦNE 11950		<i>glvC</i>	2445739	2447343	2446880			
ΦNE 13912		<i>glvC</i>	2445739	2447343	2446882			
ΦNE 09308		<i>glvC</i>	2445739	2447343	2447013			
ΦNE 12551	SAV2324		2447673	2448437	2448305	+		hypothetical protein
ΦNE 12788			2447673	2448437	2448373			
ΦNE 05514	SAV2326		2449168	2450547	2449256	-		hypothetical protein
ΦNE 12089			2449168	2450547	2449367			
ΦNE 05520			2449168	2450547	2449637			
ΦNE 11827			2449168	2450547	2449637			
ΦNE 11688			2449168	2450547	2449813			
ΦNE 06256			2449168	2450547	2449902			
ΦNE 06359			2449168	2450547	2449905			
ΦNE 03267			2449168	2450547	2449916			
ΦNE 00431			2449168	2450547	2450108			
ΦNE 00733			2449168	2450547	2450109			
ΦNE 13882			2449168	2450547	2450472			
ΦNE 07553			2449168	2450547	2450522			
ΦNE 07378	SAV2327		2450706	2451275	2450975	-		hypothetical protein
ΦNE 04511			2450706	2451275	2451020			
ΦNE 00675			2450706	2451275	2451087			
ΦNE 04482			2450706	2451275	2451183			
ΦNE 08886	SAV2328		2451762	2452643	2452435	-		hypothetical protein

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 14623	SAV2329		2452754	2453875	2452829	-		hypothetical protein
ΦNE 02709			2452754	2453875	2453259			
ΦNE 01836			2452754	2453875	2453367			
ΦNE 08148			2452754	2453875	2453383			
ΦNE 02283	SAV2330	<i>hutI</i>	2454151	2455389	2454294	-		imidazolonepropionase
ΦNE 11618		<i>hutI</i>	2454151	2455389	2454543			
ΦNE 11803		<i>hutI</i>	2454151	2455389	2454543			
ΦNE 00804		<i>hutI</i>	2454151	2455389	2454731			
ΦNE 04251		<i>hutI</i>	2454151	2455389	2454866			
ΦNE 11400		<i>hutI</i>	2454151	2455389	2454990			
ΦNE 07634	SAV2331	<i>hutU</i>	2455389	2457050	2455768	-		urocanate hydratase
ΦNE 03839		<i>hutU</i>	2455389	2457050	2456688			
ΦNE 11095		<i>hutU</i>	2455389	2457050	2456871			
ΦNE 11894	SAV2332		2457210	2458094	2457283	+		hypothetical protein
ΦNE 12577			2457210	2458094	2457434			
ΦNE 02817			2457210	2458094	2457602			
ΦNE 11235			2457210	2458094	2457907			
ΦNE 09848		<i>fosB</i>	2458336	2458755	2458416			
ΦNE 06569	SAV2333	<i>fosB</i>	2458336	2458755	2458563	+		fosfomycin resistance protein fofB
ΦNE 09451		<i>fosB</i>	2458336	2458755	2458634			
ΦNE 03723	SAV2334		2459011	2459946	2459822	-		hypothetical protein
ΦNE 12843	SAV2335		2460236	2461495	2460360	+		hypothetical protein
ΦNE 09166			2460236	2461495	2461142			
ΦNE 12541	SAV2336		2461561	2462247	2461679	-		hypothetical protein
ΦNE 02438			2461561	2462247	2462037			
ΦNE 01722	SAV2337		2462421	2463074	2462427	+		conserved hypothetical protein
ΦNE 04698			2462421	2463074	2462617			
ΦNE 08290			2462421	2463074	2462828			
ΦNE 05245			2462421	2463074	2462833			
ΦNE 08112			2462421	2463074	2462867			
ΦNE 11425			2462421	2463074	2462967			
ΦNE 00614			2462421	2463074	2463071			
ΦNE 10459	SAV2338		2463310	2464329	2463338	-		hypothetical protein
ΦNE 08910			2463310	2464329	2463572			
ΦNE 00669			2463310	2464329	2463590			
ΦNE 07753			2463310	2464329	2463730			
ΦNE 08527			2463310	2464329	2463735			
ΦNE 11766			2463310	2464329	2463745			
ΦNE 09180			2463310	2464329	2463753			
ΦNE 04091			2463310	2464329	2463898			
ΦNE 14700			2463310	2464329	2464208			
ΦNE 11404	SAV2339		2464359	2464685	2464660	-		conserved hypothetical protein
ΦNE 03272	SAV2340		2464903	2466135	2464970	-		conserved hypothetical protein
ΦNE 02355			2464903	2466135	2465260			
ΦNE 11015			2464903	2466135	2465915			
ΦNE 09204			2464903	2466135	2465950			
ΦNE 13403			2464903	2466135	2465953			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 04934			2464903	2466135	2466113			
ΦNE 06075	SAV2341		2466128	2467027	2466160	-		hypothetical protein
ΦNE 12933			2466128	2467027	2466568			
ΦNE 11486	SAV2342		2467258	2467878	2467407	-		conserved hypothetical protein
ΦNE 08332			2467258	2467878	2467484			
ΦNE 01529			2467258	2467878	2467563			
ΦNE 09226			2467258	2467878	2467860			
ΦNE 07869	SAV2344		2468277	2468885	2468325	+		hypothetical protein
ΦNE 12094			2468277	2468885	2468325			
ΦNE 12247			2468277	2468885	2468363			
ΦNE 03262			2468277	2468885	2468728			
ΦNE 00352	SAV2345		2469218	2470426	2469835	+		hypothetical protein
ΦNE 01587	SAV2347		2471554	2472501	2471718	-		hypothetical protein
ΦNE 03137			2471554	2472501	2471883			
ΦNE 12748			2471554	2472501	2471883			
ΦNE 13356			2471554	2472501	2471970			
ΦNE 00098			2471554	2472501	2471975			
ΦNE 07253			2471554	2472501	2472041			
ΦNE 00096			2471554	2472501	2472145			
ΦNE 07667			2471554	2472501	2472184			
ΦNE 06759	SAV2348		2472604	2473089	2472671	+		conserved hypothetical protein
ΦNE 08427			2472604	2473089	2473059			
ΦNE 01008	SAV2349		2473086	2473505	2473238	+		hypothetical protein
ΦNE 11582	SAV2350		2473613	2474533	2473627	-		hypothetical protein
ΦNE 13287			2473613	2474533	2473708			
ΦNE 06350			2473613	2474533	2473736			
ΦNE 09183			2473613	2474533	2474125			
ΦNE 11256			2473613	2474533	2474212			
ΦNE 03654	SAV2352		2475625	2477556	2476084	-		hypothetical protein
ΦNE 05224			2475625	2477556	2476084			
ΦNE 03560			2475625	2477556	2477360			
ΦNE 05190	SAV2354		2478337	2478891	2478737	+		hypothetical protein
ΦNE 02808			2478337	2478891	2478772			
ΦNE 05284			2478337	2478891	2478772			
ΦNE 02193	SAV2355	<i>tcaB</i>	2479118	2480326	2479305	-		TcaB protein
ΦNE 12474		<i>tcaB</i>	2479118	2480326	2479524			
ΦNE 06220		<i>tcaB</i>	2479118	2480326	2480173			
ΦNE 08156		<i>tcaB</i>	2479118	2480326	2480213			
ΦNE 07025	SAV2356	<i>tcaA</i>	2480595	2481977	2480671	-		TcaA protein
ΦNE 00737		<i>tcaA</i>	2480595	2481977	2480986			
ΦNE 07469		<i>tcaA</i>	2480595	2481977	2481077			
ΦNE 11450		<i>tcaA</i>	2480595	2481977	2481199			
ΦNE 06280		<i>tcaA</i>	2480595	2481977	2481627			
ΦNE 01835		<i>tcaA</i>	2480595	2481977	2481638			
ΦNE 05293	SAV2358		2482867	2483835	2482884	+		hypothetical protein
ΦNE 05203			2482867	2483835	2483171			
ΦNE 12350			2482867	2483835	2483242			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 08005			2482867	2483835	2483352			
ΦNE 09058			2482867	2483835	2483539			
ΦNE 06457			2482867	2483835	2483749			
ΦNE 03177	SAV2359		2484066	2484731	2484218	-		hypothetical protein
ΦNE 05158	SAV2360		2484731	2485786	2484814	-		conserved hypothetical protein
ΦNE 11356			2484731	2485786	2484814			
ΦNE 13048			2484731	2485786	2484816			
ΦNE 04342			2484731	2485786	2484885			
ΦNE 02054			2484731	2485786	2485134			
ΦNE 01762			2484731	2485786	2485338			
ΦNE 05560			2484731	2485786	2485444			
ΦNE 02861			2484731	2485786	2485659			
ΦNE 08752			2484731	2485786	2485738			
ΦNE 02823	SAV2361		2485922	2486596	2486008	+		hypothetical protein
ΦNE 07744	SAV2362		2486589	2487962	2486748	+		hypothetical protein
ΦNE 01562			2486589	2487962	2486878			
ΦNE 12100			2486589	2487962	2487601			
ΦNE 08907	SAV2363		2488125	2488568	2488252	+		conserved hypothetical protein
ΦNE 11074	SAV2365		2489086	2490621	2489364	-		hypothetical protein
ΦNE 12238			2489086	2490621	2489487			
ΦNE 08335			2489086	2490621	2490175			
ΦNE 02616			2489086	2490621	2490255			
ΦNE 11336			2489086	2490621	2490255			
ΦNE 00141			2489086	2490621	2490320			
ΦNE 06225			2489086	2490621	2490485			
ΦNE 09784	SAV2366		2490945	2492543	2490971	-		L-lactate permease lctP homolog
ΦNE 12184			2490945	2492543	2491447			
ΦNE 13172			2490945	2492543	2491577			
ΦNE 12729			2490945	2492543	2491708			
ΦNE 03728			2490945	2492543	2491897			
ΦNE 12585			2490945	2492543	2492320			
ΦNE 12244	SAV2367		2492860	2494533	2493262	+		hypothetical protein
ΦNE 09006			2492860	2494533	2493350			
ΦNE 00287			2492860	2494533	2493583			
ΦNE 07919			2492860	2494533	2493784			
ΦNE 14020			2492860	2494533	2494081			
ΦNE 08909			2492860	2494533	2494502			
ΦNE 12925			2492860	2494533	2494505			
ΦNE 04661			2492860	2494533	2494526			
ΦNE 13460	SAV2368		2494687	2495301	2494679	-	*	hypothetical protein
ΦNE 02684			2494687	2495301	2494830			
ΦNE 09868	SAV2369		2495615	2496130	2495678	-		hypothetical protein
ΦNE 07712			2495615	2496130	2495996			
ΦNE 14755	SAV2370		2496321	2497325	2496603	+		conserved hypothetical protein
ΦNE 08714			2496321	2497325	2497019			
ΦNE 03958			2496321	2497325	2497078			
ΦNE 12606			2496321	2497325	2497081			



Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 08444			2496321	2497325	2497097			
ΦNE 00825	SAV2371		2497371	2497772	2497383	-		hypothetical protein
ΦNE 04025			2497371	2497772	2497383			
ΦNE 12872	SAV2372		2497808	2498803	2497813	-		hypothetical protein
ΦNE 05076			2497808	2498803	2498003			
ΦNE 09222			2497808	2498803	2498191			
ΦNE 03494			2497808	2498803	2498717			
ΦNE 03496			2497808	2498803	2498717			
ΦNE 02339	SAV2373		2499074	2499505	2499213	-		hypothetical protein
ΦNE 06415			2499074	2499505	2499271			
ΦNE 00035			2499074	2499505	2499277			
ΦNE 00682			2499074	2499505	2499378			
ΦNE 06604	SAV2374		2499712	2500989	2499956	-		hypothetical protein
ΦNE 01600			2499712	2500989	2500220			
ΦNE 02788			2499712	2500989	2500748			
ΦNE 13740			2499712	2500989	2500799			
ΦNE 07192	SAV2375		2501150	2501773	2501172	+		hypothetical protein
ΦNE 12259	SAV2376		2501819	2502763	2501859	+		hypothetical protein
ΦNE 04551			2501819	2502763	2502318			
ΦNE 11435			2501819	2502763	2502524			
ΦNE 06379			2501819	2502763	2502672			
ΦNE 09345			2501819	2502763	2502674			
ΦNE 02978			2501819	2502763	2502675			
ΦNE 11695			2501819	2502763	2502676			
ΦNE 10973			2501819	2502763	2502681			
ΦNE 09938	SAV2377	<i>scrA</i>	2502848	2504290	2502877	-		PTS system, sucrose-specific IIBC component
ΦNE 04741		<i>scrA</i>	2502848	2504290	2503326			
ΦNE 10649		<i>scrA</i>	2502848	2504290	2503444			
ΦNE 01749		<i>scrA</i>	2502848	2504290	2503702			
ΦNE 10433		<i>scrA</i>	2502848	2504290	2504107			
ΦNE 08917	SAV2378		2504335	2504811	2504441	+		probable type II DNA modification enzyme
ΦNE 12432	SAV2381		2507864	2509969	2508087	+		hypothetical protein
ΦNE 10953			2507864	2509969	2508156			
ΦNE 09727			2507864	2509969	2508198			
ΦNE 14440			2507864	2509969	2508228			
ΦNE 13437			2507864	2509969	2508591			
ΦNE 12704			2507864	2509969	2508734			
ΦNE 11240			2507864	2509969	2508923			
ΦNE 10838			2507864	2509969	2508959			
ΦNE 05394			2507864	2509969	2509061			
ΦNE 11858			2507864	2509969	2509246			
ΦNE 03472			2507864	2509969	2509389			
ΦNE 05469			2507864	2509969	2509454			
ΦNE 07405			2507864	2509969	2509681			
ΦNE 08874			2507864	2509969	2509695			
ΦNE 14416			2510040	2510462	2510172			
ΦNE 09162	SAV2382		2510040	2510462	2510249	+		hypothetical protein

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 03890	SAV2383		2510726	2511082	2510783	+		hypothetical protein
ΦNE 12863			2510726	2511082	2510934			
ΦNE 09969	SAV2384	<i>gltT</i>	2511400	2512677	2511443	-		proton/sodium-glutamate symport protein
ΦNE 14044		<i>gltT</i>	2511400	2512677	2511516			
ΦNE 13401		<i>gltT</i>	2511400	2512677	2512507			
ΦNE 14198		<i>gltT</i>	2511400	2512677	2512529			
ΦNE 00393	SAV2385		2512859	2513224	2513019	-		hypothetical protein
ΦNE 11825			2512859	2513224	2513161			
ΦNE 00203			2512859	2513224	2513207			
ΦNE 02310	SAV2386		2513621	2514067	2513626	+		hypothetical protein
ΦNE 13735			2513621	2514067	2513646			
ΦNE 11343	SAV2388	<i>narK</i>	2514818	2515987	2515129	-		nitrite extrusion protein
ΦNE 09494	SAV2389		2516356	2517270	2516486	+		conserved hypothetical protein
ΦNE 01640			2516356	2517270	2516732			
ΦNE 04935			2516356	2517270	2516740			
ΦNE 08759			2516356	2517270	2516770			
ΦNE 00175			2516356	2517270	2516807			
ΦNE 04739			2516356	2517270	2516851			
ΦNE 10379			2516356	2517270	2517175			
ΦNE 05073			2516356	2517270	2517183			
ΦNE 13220			2516356	2517270	2517254			
ΦNE 13220	SAV2390		2517249	2517989	2517254	+		hypothetical protein
ΦNE 07053			2517249	2517989	2517840			
ΦNE 11392	SAV2392		2518923	2519957	2519129	-		hypothetical protein
ΦNE 12130			2518923	2519957	2519236			
ΦNE 10861			2518923	2519957	2519351			
ΦNE 09170			2518923	2519957	2519549			
ΦNE 11284			2518923	2519957	2519683			
ΦNE 00428			2518923	2519957	2519723			
ΦNE 03252			2518923	2519957	2519926			
ΦNE 10970	SAV2393		2519981	2520433	2520330	-		hypothetical protein
ΦNE 03286	SAV2394	<i>narI</i>	2520453	2521130	2520569	-		nitrate reductase gamma chain
ΦNE 11610		<i>narI</i>	2520453	2521130	2520688			
ΦNE 05446		<i>narI</i>	2520453	2521130	2520839			
ΦNE 14635		<i>narI</i>	2520453	2521130	2520841			
ΦNE 00117		<i>narI</i>	2520453	2521130	2520872			
ΦNE 10203		<i>narI</i>	2520453	2521130	2521126			
ΦNE 11370	SAV2395		2521123	2521698	2521238	-		hypothetical protein
ΦNE 11516			2521123	2521698	2521240			
ΦNE 03599			2521123	2521698	2521462			
ΦNE 12302			2521123	2521698	2521462			
ΦNE 12245	SAV2396	<i>narH</i>	2521691	2523250	2521824	-		nitrate reductase beta chain
ΦNE 11725		<i>narH</i>	2521691	2523250	2521916			
ΦNE 10950		<i>narH</i>	2521691	2523250	2522077			
ΦNE 11915		<i>narH</i>	2521691	2523250	2522166			
ΦNE 13856		<i>narH</i>	2521691	2523250	2522297			
ΦNE 07613		<i>narH</i>	2521691	2523250	2522325			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 13049		<i>narH</i>	2521691	2523250	2522358			
ΦNE 06688		<i>narH</i>	2521691	2523250	2522362			
ΦNE 12779		<i>narH</i>	2521691	2523250	2522431			
ΦNE 00827		<i>narH</i>	2521691	2523250	2522623			
ΦNE 04939		<i>narH</i>	2521691	2523250	2522748			
ΦNE 02731	SAV2397	<i>narG</i>	2523240	2526929	2523451	-		respiratory nitrate reductase alpha chain
ΦNE 02734		<i>narG</i>	2523240	2526929	2523451			
ΦNE 12489		<i>narG</i>	2523240	2526929	2523647			
ΦNE 12768		<i>narG</i>	2523240	2526929	2524116			
ΦNE 01566		<i>narG</i>	2523240	2526929	2524547			
ΦNE 05440		<i>narG</i>	2523240	2526929	2524547			
ΦNE 13332		<i>narG</i>	2523240	2526929	2524547			
ΦNE 00490		<i>narG</i>	2523240	2526929	2524550			
ΦNE 01710		<i>narG</i>	2523240	2526929	2525133			
ΦNE 12856		<i>narG</i>	2523240	2526929	2525408			
ΦNE 11083		<i>narG</i>	2523240	2526929	2525422			
ΦNE 05625		<i>narG</i>	2523240	2526929	2525887			
ΦNE 09985		<i>narG</i>	2523240	2526929	2525988			
ΦNE 11108		<i>narG</i>	2523240	2526929	2526077			
ΦNE 06924		<i>narG</i>	2523240	2526929	2526114			
ΦNE 05110		<i>narG</i>	2523240	2526929	2526601			
ΦNE 14598		<i>narG</i>	2523240	2526929	2526775			
ΦNE 12701	SAV2398	<i>nasF</i>	2527238	2528215	2528216	-	*	uroporphyrin-III C-methyl transferase
ΦNE 05367	SAV2399	<i>nasE</i>	2528206	2528520	2528216	-		assimilatory nitrite reductase
ΦNE 02571		<i>nasE</i>	2528206	2528520	2528219			
ΦNE 09981		<i>nasE</i>	2528206	2528520	2528269			
ΦNE 02285	SAV2400	<i>nasD</i>	2528524	2530929	2528719	-		nitrite reductase
ΦNE 00457		<i>nasD</i>	2528524	2530929	2529425			
ΦNE 00535		<i>nasD</i>	2528524	2530929	2529425			
ΦNE 00829		<i>nasD</i>	2528524	2530929	2529645			
ΦNE 05082		<i>nasD</i>	2528524	2530929	2529653			
ΦNE 04784		<i>nasD</i>	2528524	2530929	2529828			
ΦNE 06612		<i>nasD</i>	2528524	2530929	2529831			
ΦNE 10956		<i>nasD</i>	2528524	2530929	2529946			
ΦNE 13822		<i>nasD</i>	2528524	2530929	2530043			
ΦNE 04087		<i>nasD</i>	2528524	2530929	2530325			
ΦNE 00448		<i>nasD</i>	2528524	2530929	2530338			
ΦNE 13849		<i>nasD</i>	2528524	2530929	2530424			
ΦNE 04629		<i>nasD</i>	2528524	2530929	2530742			
ΦNE 02449	SAV2401		2530995	2531726	2531630	-		hypothetical protein
ΦNE 05301	SAV2404		2533767	2533949	2533774	-		hypothetical protein
ΦNE 05127			2533767	2533949	2533912			
ΦNE 00423	SAV2405		2534033	2534500	2534163	-		conserved hypothetical protein
ΦNE 15346			2534033	2534500	2534244			
ΦNE 00011	SAV2406		2534686	2536233	2535052	-		hypothetical protein
ΦNE 03564			2534686	2536233	2535602			
ΦNE 05619			2534686	2536233	2535758			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 08315	SAV2408		2536794	2537045	2536930	-		conserved hypothetical protein
ΦNE 04656	SAV2409		2537318	2537917	2537582	-		conserved hypothetical protein
ΦNE 00671			2537318	2537917	2537728			
ΦNE 02970			2537318	2537917	2537728			
ΦNE 09559			2537318	2537917	2537783			
ΦNE 10967	SAV2410		2537936	2538298	2538118	-		hypothetical protein
ΦNE 12387			2537936	2538298	2538119			
ΦNE 07573			2537936	2538298	2538262			
ΦNE 02665	SAV2411	<i>fmhA</i>	2538553	2539803	2539107	+		fmhA protein
ΦNE 09776		<i>fmhA</i>	2538553	2539803	2539741			
ΦNE 10985		<i>fmhA</i>	2538553	2539803	2539779			
ΦNE 05574	SAV2412		2539900	2540631	2540458	-		hypothetical protein
ΦNE 10833	SAV2414		2541328	2542107	2542013	-		hypothetical protein
ΦNE 05357	SAV2415		2542228	2543667	2542632	-		hypothetical protein
ΦNE 03616			2542228	2543667	2543055			
ΦNE 12359			2542228	2543667	2543132			
ΦNE 12181	SAV2416		2544099	2544785	2544286	-		phosphoglycerate mutase
ΦNE 01732			2544099	2544785	2544496			
ΦNE 01483	SAV2417		2545112	2545978	2545843	-		conserved hypothetical protein
ΦNE 03151	SAV2418	<i>sbi</i>	2546792	2548078	2546856	+		IgG-binding protein
ΦNE 09075		<i>sbi</i>	2546792	2548078	2547753			
ΦNE 00267		<i>sbi</i>	2546792	2548078	2547919			
ΦNE 07312	SAV2419	<i>hlgA</i>	2548614	2549543	2549090	+		gamma-hemolysin chain II precursor
ΦNE 05500	SAV2420	<i>hlgC</i>	2550110	2551057	2550530	+		gamma-hemolysin component C
ΦNE 11423	SAV2421	<i>hlgB</i>	2551059	2552036	2551951	+		gamma-hemolysin component B
ΦNE 07727	SAV2422		2552088	2552555	2552222	-		hypothetical protein
ΦNE 09907			2552088	2552555	2552321			
ΦNE 13739	SAV2424		2553269	2554384	2553300	-		hypothetical protein
ΦNE 08368			2553269	2554384	2553343			
ΦNE 07531			2553269	2554384	2553455			
ΦNE 03643			2553269	2554384	2553528			
ΦNE 10204			2553269	2554384	2553716			
ΦNE 13142			2553269	2554384	2553947			
ΦNE 09343			2553269	2554384	2553949			
ΦNE 01444			2553269	2554384	2553990			
ΦNE 01761			2553269	2554384	2554089			
ΦNE 04521			2553269	2554384	2554101			
ΦNE 04986	SAV2425	<i>bioB</i>	2554362	2555369	2554544	-		biotin synthase
ΦNE 13648		<i>bioB</i>	2554362	2555369	2554789			
ΦNE 00654		<i>bioB</i>	2554362	2555369	2554891			
ΦNE 12859	SAV2426	<i>bioA</i>	2555371	2556729	2555973	-		adenosylmethionine-8-amino-7-oxononanoate aminotransferase
ΦNE 12809		<i>bioA</i>	2555371	2556729	2556539			
ΦNE 12770		<i>bioA</i>	2555371	2556729	2556653			
ΦNE 09971	SAV2427	<i>bioD</i>	2556707	2557393	2557071	-		dethiobiotin synthetase
ΦNE 04957	SAV2428		2557846	2559579	2557967	-		hypothetical protein
ΦNE 05313			2557846	2559579	2558456			
ΦNE 11096			2557846	2559579	2558572			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 02292			2557846	2559579	2558741			
ΦNE 04634			2557846	2559579	2558777			
ΦNE 07859			2557846	2559579	2559233			
ΦNE 07841			2557846	2559579	2559353			
ΦNE 05360			2557846	2559579	2559421			
ΦNE 12722	SAV2429		2559604	2561367	2559602	-	*	hypothetical protein
ΦNE 06331			2559604	2561367	2559639			
ΦNE 15221			2559604	2561367	2560214			
ΦNE 12818			2559604	2561367	2560506			
ΦNE 07187			2559604	2561367	2561209			
ΦNE 11692	SAV2432		2562965	2564107	2563161	+		conserved hypothetical protein
ΦNE 01542	SAV2433		2564167	2564826	2564301	+		hypothetical protein
ΦNE 12398			2564167	2564826	2564513			
ΦNE 04828	SAV2434		2565008	2566219	2565098	+		hypothetical protein
ΦNE 11807			2565008	2566219	2565102			
ΦNE 04538			2565008	2566219	2565534			
ΦNE 09530			2565008	2566219	2566098			
ΦNE 07737			2565008	2566219	2566132			
ΦNE 08352			2565008	2566219	2566144			
ΦNE 12445			2565008	2566219	2566229		*	
ΦNE 07043	SAV2436		2566928	2567584	2567117	+		hypothetical protein
ΦNE 03511			2566928	2567584	2567167			
ΦNE 00312			2566928	2567584	2567171			
ΦNE 00314			2566928	2567584	2567171			
ΦNE 06150			2566928	2567584	2567274			
ΦNE 00144			2566928	2567584	2567277			
ΦNE 12144			2566928	2567584	2567317			
ΦNE 09139			2566928	2567584	2567429			
ΦNE 08723	SAV2437		2567647	2568453	2567818	-		conserved hypothetical protein
ΦNE 08724			2567647	2568453	2567818			
ΦNE 08725			2567647	2568453	2567818			
ΦNE 08735			2567647	2568453	2567818			
ΦNE 08785			2567647	2568453	2567818			
ΦNE 08786			2567647	2568453	2567818			
ΦNE 08787			2567647	2568453	2567818			
ΦNE 08788			2567647	2568453	2567818			
ΦNE 08789			2567647	2568453	2567818			
ΦNE 08790			2567647	2568453	2567818			
ΦNE 08791			2567647	2568453	2567818			
ΦNE 08793			2567647	2568453	2567818			
ΦNE 08799			2567647	2568453	2567818			
ΦNE 08801			2567647	2568453	2567818			
ΦNE 08803			2567647	2568453	2567818			
ΦNE 08804			2567647	2568453	2567818			
ΦNE 08805			2567647	2568453	2567818			
ΦNE 08806			2567647	2568453	2567818			
ΦNE 08807			2567647	2568453	2567818			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 08808			2567647	2568453	2567818			
ΦNE 08809			2567647	2568453	2567818			
ΦNE 08810			2567647	2568453	2567818			
ΦNE 08816			2567647	2568453	2567818			
ΦNE 08837			2567647	2568453	2567818			
ΦNE 08842			2567647	2568453	2567818			
ΦNE 08845			2567647	2568453	2567818			
ΦNE 08846			2567647	2568453	2567818			
ΦNE 08849			2567647	2568453	2567818			
ΦNE 08892			2567647	2568453	2567818			
ΦNE 06528			2567647	2568453	2568108			
ΦNE 13871			2567647	2568453	2568263			
ΦNE 02428			2567647	2568453	2568264			
ΦNE 03152	SAV2438		2568739	2570148	2569760	+		amino acid ABC transporter homolog
ΦNE 03550			2568739	2570148	2569804			
ΦNE 14476			2568739	2570148	2569876			
ΦNE 05507			2568739	2570148	2569907			
ΦNE 07801			2568739	2570148	2570063			
ΦNE 04415	SAV2439		2570287	2572365	2570854	+		hypothetical protein
ΦNE 03085			2570287	2572365	2571088			
ΦNE 04386			2570287	2572365	2571164			
ΦNE 11389			2570287	2572365	2571437			
ΦNE 10543			2570287	2572365	2571773			
ΦNE 07576	SAV2440		2572506	2574335	2572591	-		conserved hypothetical protein
ΦNE 07812			2572506	2574335	2572651			
ΦNE 07120			2572506	2574335	2572674			
ΦNE 10025			2572506	2574335	2573498			
ΦNE 07875			2572506	2574335	2573829			
ΦNE 04529	SAV2441		2574567	2576063	2574633	+		hypothetical protein
ΦNE 08695			2574567	2576063	2574637			
ΦNE 05172			2574567	2576063	2574638			
ΦNE 08150			2574567	2576063	2574639			
ΦNE 05097			2574567	2576063	2574642			
ΦNE 13742			2574567	2576063	2574648			
ΦNE 00030			2574567	2576063	2574781			
ΦNE 04889			2574567	2576063	2575017			
ΦNE 04941			2574567	2576063	2575018			
ΦNE 13461			2574567	2576063	2575021			
ΦNE 13273			2574567	2576063	2575023			
ΦNE 11170			2574567	2576063	2575234			
ΦNE 14465			2574567	2576063	2575245			
ΦNE 09042			2574567	2576063	2575362			
ΦNE 09394			2574567	2576063	2575663			
ΦNE 13191			2574567	2576063	2575665			
ΦNE 10962			2574567	2576063	2575779			
ΦNE 02352			2574567	2576063	2575782			
ΦNE 02548			2574567	2576063	2575876			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 02914			2574567	2576063	2575876			
ΦNE 03117			2574567	2576063	2575876			
ΦNE 05354			2574567	2576063	2575977			
ΦNE 15322	SAV2442		2576155	2577006	2576506	-		hypothetical protein
ΦNE 11498			2576155	2577006	2576750			
ΦNE 05078	SAV2443		2577328	2578263	2577916	-		hypothetical protein
ΦNE 03490	SAV2444		2578489	2579889	2578745	-		hypothetical protein
ΦNE 08390			2578489	2579889	2578746			
ΦNE 12198			2578489	2579889	2579002			
ΦNE 07498	SAV2445	<i>opuCD</i>	2580183	2580878	2580629	-		probable glycine betaine/carnitine/choline ABC transporter
ΦNE 04878		<i>opuCD</i>	2580183	2580878	2580697			
ΦNE 11649	SAV2446	<i>opuCC</i>	2580878	2581819	2581312	-		glycine betaine/carnitine/choline ABC transporter
ΦNE 00085		<i>opuCC</i>	2580878	2581819	2581400			
ΦNE 12081		<i>opuCC</i>	2580878	2581819	2581737			
ΦNE 12575		<i>opuCC</i>	2580878	2581819	2581737			
ΦNE 04718		<i>opuCC</i>	2580878	2581819	2581741			
ΦNE 07417	SAV2447	<i>opuCB</i>	2581836	2582471	2581907	-		probable glycine betaine/carnitine/choline ABC transporter
ΦNE 14285	SAV2448	<i>opuCA</i>	2582468	2583700	2582821	-		glycine betaine/carnitine/choline ABC transporter
ΦNE 11368	SAV2449		2584364	2584963	2584464	-		conserved hypothetical protein
ΦNE 11763			2584364	2584963	2584464			
ΦNE 04078			2584364	2584963	2584489			
ΦNE 13491			2584364	2584963	2584610			
ΦNE 11648	SAV2450		2585143	2586780	2585305	+		hypothetical protein
ΦNE 04825			2585143	2586780	2585387			
ΦNE 06349			2585143	2586780	2585481			
ΦNE 09926			2585143	2586780	2585610			
ΦNE 12548			2585143	2586780	2585650			
ΦNE 10811			2585143	2586780	2585895			
ΦNE 08647			2585143	2586780	2585909			
ΦNE 08775			2585143	2586780	2586780			
ΦNE 08981	SAV2451		2587089	2588441	2587251	+		hypothetical protein
ΦNE 08781			2587089	2588441	2588295			
ΦNE 06100	SAV2452		2588503	2589690	2588534	-		hypothetical protein
ΦNE 12775			2588503	2589690	2588590			
ΦNE 12664			2588503	2589690	2588591			
ΦNE 13230			2588503	2589690	2589158			
ΦNE 12257			2588503	2589690	2589282			
ΦNE 07413			2588503	2589690	2589497			
ΦNE 11609	SAV2453		2590086	2590862	2590247	-		conserved hypothetical protein
ΦNE 13082			2590086	2590862	2590414			
ΦNE 03016			2590086	2590862	2590579			
ΦNE 03485			2590086	2590862	2590579			
ΦNE 03487			2590086	2590862	2590579			
ΦNE 04174			2590086	2590862	2590630			
ΦNE 06326	SAV2454		2590855	2591517	2591323	-		hypothetical protein
ΦNE 06334			2590855	2591517	2591323			
ΦNE 00440			2590855	2591517	2591415			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 13218			2590855	2591517	2591468			
ΦNE 13294	SAV2455		2591765	2592841	2591934	-		hypothetical protein
ΦNE 11161			2591765	2592841	2591980			
ΦNE 08665			2591765	2592841	2592045			
ΦNE 10586			2591765	2592841	2592111			
ΦNE 07464			2591765	2592841	2592271			
ΦNE 05359			2591765	2592841	2592372			
ΦNE 09312	SAV2457		2593463	2593720	2593679	-		hypothetical protein
ΦNE 05524	SAV2458		2594079	2594534	2594329	+		conserved hypothetical protein
ΦNE 03535	SAV2459		2594702	2596279	2594852	-		hypothetical protein
ΦNE 13892			2594702	2596279	2595225			
ΦNE 08251			2594702	2596279	2595772			
ΦNE 00743			2594702	2596279	2596179			
ΦNE 06183			2594702	2596279	2596215			
ΦNE 04845			2594702	2596279	2596248			
ΦNE 08545	SAV2460		2596474	2597223	2596501	+		hypothetical protein
ΦNE 11616			2596474	2597223	2596772			
ΦNE 09040			2596474	2597223	2597087			
ΦNE 12372			2596474	2597223	2597139			
ΦNE 15193	SAV2462		2597585	2598778	2598103	-		hypothetical protein
ΦNE 12341			2597585	2598778	2598385			
ΦNE 11376			2597585	2598778	2598670			
ΦNE 03046			2597585	2598778	2598739			
ΦNE 03047			2597585	2598778	2598739			
ΦNE 03052			2597585	2598778	2598739			
ΦNE 03057			2597585	2598778	2598739			
ΦNE 03065			2597585	2598778	2598739			
ΦNE 04005	SAV2463		2598790	2599539	2598827	-		oligopeptide transporter putative ATPase domain
ΦNE 07837			2598790	2599539	2598932			
ΦNE 07864			2598790	2599539	2598974			
ΦNE 05105			2598790	2599539	2599371			
ΦNE 06696			2598790	2599539	2599375			
ΦNE 09136	SAV2464		2599532	2600347	2599833	-		oligopeptide transporter putative ATPase domain
ΦNE 08046			2599532	2600347	2599955			
ΦNE 03694			2599532	2600347	2600001			
ΦNE 13066			2599532	2600347	2600001			
ΦNE 01677	SAV2465		2600344	2601213	2600867	-		oligopeptide transporter putative membrane permease domain
ΦNE 12978			2600344	2601213	2600870			
ΦNE 11728			2600344	2601213	2601098			
ΦNE 02472	SAV2466		2601210	2602145	2601239	-		oligopeptide transporter putative membrane permease domain
ΦNE 05350			2601210	2602145	2601516			
ΦNE 04010			2601210	2602145	2601568			
ΦNE 10589			2601210	2602145	2601891			
ΦNE 13633			2601210	2602145	2601895			
ΦNE 10778	SAV2467		2602158	2603756	2602166	-		oligopeptide transporter putative substrate binding domain
ΦNE 14290			2602158	2603756	2602494			
ΦNE 02792			2602158	2603756	2602580			



Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 07110			2602158	2603756	2602728			
ΦNE 08100			2602158	2603756	2602775			
ΦNE 04194			2602158	2603756	2603329			
ΦNE 00595			2602158	2603756	2603410			
ΦNE 05145			2602158	2603756	2603629			
ΦNE 13700	SAV2468		2603899	2605200	2603987	-		conserved hypothetical protein
ΦNE 04787			2603899	2605200	2604742			
ΦNE 10983	SAV2469		2605193	2606011	2605495	-		conserved hypothetical protein
ΦNE 03991			2605193	2606011	2605693			
ΦNE 04552			2605193	2606011	2605696			
ΦNE 09476			2605193	2606011	2605859			
ΦNE 12653			2605193	2606011	2605936			
ΦNE 03579	SAV2470		2606022	2606843	2606027	-		hypothetical protein
ΦNE 09320			2606022	2606843	2606063			
ΦNE 03768			2606022	2606843	2606253			
ΦNE 13551			2606022	2606843	2606296			
ΦNE 07780			2606022	2606843	2606384			
ΦNE 03928			2606022	2606843	2606402			
ΦNE 06926			2606022	2606843	2606711			
ΦNE 04362	SAV2473		2609453	2610991	2609606	+		hypothetical protein
ΦNE 08002			2609453	2610991	2609630			
ΦNE 05371			2609453	2610991	2609691			
ΦNE 13406			2609453	2610991	2610140			
ΦNE 11580			2609453	2610991	2610178			
ΦNE 12708			2609453	2610991	2610318			
ΦNE 01504			2609453	2610991	2610950			
ΦNE 05121			2609453	2610991	2610950			
ΦNE 05552	SAV2476		2612424	2612834	2612438	-		hypothetical protein
ΦNE 00313			2612424	2612834	2612695			
ΦNE 11667			2612424	2612834	2612800			
ΦNE 04707	SAV2477		2613101	2613613	2613267	-		hypothetical protein
ΦNE 05047			2613101	2613613	2613477			
ΦNE 03921	SAV2478		2613773	2614468	2613830	-		hypothetical protein
ΦNE 12495			2613773	2614468	2613835			
ΦNE 12332			2613773	2614468	2614023			
ΦNE 11265			2613773	2614468	2614422			
ΦNE 12835	SAV2479		2614757	2615038	2614765	+		hypothetical protein
ΦNE 02065			2614757	2615038	2614853			
ΦNE 06614	SAV2480		2615298	2615489	2615378	-		hypothetical protein
ΦNE 00282	SAV2481		2616050	2616844	2616557	-		hypothetical protein
ΦNE 11149	SAV2483		2617670	2617996	2617867	-		hypothetical protein
ΦNE 09762	SAV2484		2617996	2619321	2618605	-		hypothetical protein
ΦNE 14535			2617996	2619321	2618983			
ΦNE 06333			2617996	2619321	2618985			
ΦNE 01846	SAV2487		2621231	2622007	2621431	-		hypothetical protein
ΦNE 06282			2621231	2622007	2621870			
ΦNE 06578			2621231	2622007	2621970			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 09447	SAV2488		2622311	2623801	2622332	-		conserved hypothetical protein
ΦNE 11039			2622311	2623801	2623003			
ΦNE 01935			2622311	2623801	2623170			
ΦNE 07691			2622311	2623801	2623225			
ΦNE 00745			2622311	2623801	2623227			
ΦNE 00216			2622311	2623801	2623275			
ΦNE 00390			2622311	2623801	2623275			
ΦNE 03411			2622311	2623801	2623390			
ΦNE 02576			2622311	2623801	2623664			
ΦNE 02568	SAV2489		2623841	2625172	2623984	-		conserved hypothetical protein
ΦNE 14766			2623841	2625172	2623986			
ΦNE 00582			2623841	2625172	2624479			
ΦNE 06424			2623841	2625172	2624616			
ΦNE 12174			2623841	2625172	2624778			
ΦNE 15357			2623841	2625172	2624781			
ΦNE 08751			2623841	2625172	2624804			
ΦNE 11196			2623841	2625172	2624898			
ΦNE 00239			2623841	2625172	2625037			
ΦNE 00306			2623841	2625172	2625037			
ΦNE 02020	SAV2490		2625174	2625566	2625190	-		hypothetical protein
ΦNE 10209	SAV2492		2627790	2628056	2627821	+		hypothetical protein
ΦNE 03705			2627790	2628056	2627959			
ΦNE 05393			2627790	2628056	2627959			
ΦNE 11601	SAV2493		2628200	2628508	2628350	+		hypothetical protein
ΦNE 10624			2628200	2628508	2628515		*	
ΦNE 11084	SAV2494		2628616	2628849	2628663	-		hypothetical protein
ΦNE 08431			2628616	2628849	2628800			
ΦNE 09984			2628616	2628849	2628800			
ΦNE 06119	SAV2495		2628946	2630022	2629096	-		conserved hypothetical protein
ΦNE 04772			2628946	2630022	2629256			
ΦNE 04326			2628946	2630022	2629257			
ΦNE 06709			2628946	2630022	2629282			
ΦNE 09493			2628946	2630022	2629530			
ΦNE 14625			2628946	2630022	2629802			
ΦNE 12431	SAV2497		2632418	2633752	2632605	-		hypothetical protein
ΦNE 03242	SAV2498	<i>sarH3</i>	2634057	2634416	2634157	-		staphylococcal accessory regulator A homolog
ΦNE 02575	SAV2499	<i>sarH2</i>	2634737	2635480	2635232	+		staphylococcal accessory regulator A homolog
ΦNE 01952	SAV2500	<i>gtaB</i>	2635691	2636557	2635884	-		UTP-glucose-1-phosphate uridylyltransferase
ΦNE 02270	SAV2501	<i>tnp</i>	2636730	2638049	2637083	-		transposase
ΦNE 02964		<i>tnp</i>	2636730	2638049	2637994			
ΦNE 02992	SAV2502	<i>fnbB</i>	2638258	2641143	2638763	-		fibronectin-binding protein homolog
ΦNE 00088		<i>fnbB</i>	2638258	2641143	2638886			
ΦNE 06235		<i>fnbB</i>	2638258	2641143	2639739			
ΦNE 00140		<i>fnbB</i>	2638258	2641143	2639958			
ΦNE 14017		<i>fnbB</i>	2638258	2641143	2640018			
ΦNE 00627		<i>fnbB</i>	2638258	2641143	2640424			
ΦNE 05396		<i>fnbB</i>	2638258	2641143	2640873			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 02446	SAV2503	<i>fnb</i>	2641824	2644940	2644305	-		fibronectin-binding protein homolog
ΦNE 02646		<i>fnb</i>	2641824	2644940	2644523			
ΦNE 11549	SAV2505	<i>gntP</i>	2645409	2646767	2645660	-		gluconate permease
ΦNE 12924		<i>gntP</i>	2645409	2646767	2646026			
ΦNE 11806		<i>gntP</i>	2645409	2646767	2646179			
ΦNE 05112		<i>gntP</i>	2645409	2646767	2646676			
ΦNE 05115		<i>gntP</i>	2645409	2646767	2646676			
ΦNE 01589	SAV2506	<i>gntK</i>	2646884	2648437	2647108	-		gluconokinase
ΦNE 03786		<i>gntK</i>	2646884	2648437	2647460			
ΦNE 00576		<i>gntK</i>	2646884	2648437	2647542			
ΦNE 09486		<i>gntK</i>	2646884	2648437	2648043			
ΦNE 02437	SAV2507	<i>gntR</i>	2648461	2649141	2648542	-		gluconate operon transcriptional repressor
ΦNE 14622		<i>gntR</i>	2648461	2649141	2649133			
ΦNE 05616	SAV2508		2649294	2650058	2649548	-		hypothetical protein
ΦNE 02984			2649294	2650058	2649863			
ΦNE 12801			2649294	2650058	2650050			
ΦNE 09462	SAV2509		2650223	2650915	2650367	-		hypothetical protein
ΦNE 05634			2650223	2650915	2650500			
ΦNE 10441	SAV2510		2651146	2651634	2651218	-		conserved hypothetical protein
ΦNE 12937	SAV2511		2651701	2653524	2651912	-		conserved hypothetical protein
ΦNE 08737			2651701	2653524	2651956			
ΦNE 09154			2651701	2653524	2651996			
ΦNE 10894			2651701	2653524	2652079			
ΦNE 12086			2651701	2653524	2652305			
ΦNE 09231			2651701	2653524	2652492			
ΦNE 08003			2651701	2653524	2652590			
ΦNE 04449			2651701	2653524	2652599			
ΦNE 10842			2651701	2653524	2652599			
ΦNE 04773			2651701	2653524	2652725			
ΦNE 11294			2651701	2653524	2652818			
ΦNE 09527			2651701	2653524	2653068			
ΦNE 04803			2651701	2653524	2653189			
ΦNE 05000			2651701	2653524	2653287			
ΦNE 07937	SAV2512		2654001	2655278	2654186	-		hypothetical protein
ΦNE 02069			2654001	2655278	2654300			
ΦNE 05605			2654001	2655278	2654304			
ΦNE 11594			2654001	2655278	2654543			
ΦNE 12915			2654001	2655278	2654931			
ΦNE 00223	SAV2513		2655825	2656436	2655904	+		hypothetical protein
ΦNE 10052	SAV2515		2657651	2658421	2657730	+		hypothetical protein
ΦNE 14411			2657651	2658421	2657735			
ΦNE 14496			2657651	2658421	2657852			
ΦNE 13631			2657651	2658421	2657853			
ΦNE 13923			2657651	2658421	2657853			
ΦNE 13925			2657651	2658421	2657853			
ΦNE 13927			2657651	2658421	2657853			
ΦNE 13930			2657651	2658421	2657853			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 13936			2657651	2658421	2657853			
ΦNE 13978			2657651	2658421	2657853			
ΦNE 14368			2657651	2658421	2657853			
ΦNE 14492			2657651	2658421	2657853			
ΦNE 14493			2657651	2658421	2657853			
ΦNE 14494			2657651	2658421	2657853			
ΦNE 14495			2657651	2658421	2657853			
ΦNE 14575			2657651	2658421	2657853			
ΦNE 14576			2657651	2658421	2657853			
ΦNE 14577			2657651	2658421	2657853			
ΦNE 14578			2657651	2658421	2657853			
ΦNE 14579			2657651	2658421	2657853			
ΦNE 14580			2657651	2658421	2657853			
ΦNE 14582			2657651	2658421	2657853			
ΦNE 14584			2657651	2658421	2657853			
ΦNE 14586			2657651	2658421	2657853			
ΦNE 14587			2657651	2658421	2657853			
ΦNE 14591			2657651	2658421	2657853			
ΦNE 14667			2657651	2658421	2657853			
ΦNE 14668			2657651	2658421	2657853			
ΦNE 14669			2657651	2658421	2657853			
ΦNE 14726			2657651	2658421	2657853			
ΦNE 14728			2657651	2658421	2657853			
ΦNE 14729			2657651	2658421	2657853			
ΦNE 14733			2657651	2658421	2657853			
ΦNE 14734			2657651	2658421	2657853			
ΦNE 14735			2657651	2658421	2657853			
ΦNE 14736			2657651	2658421	2657853			
ΦNE 14737			2657651	2658421	2657853			
ΦNE 14738			2657651	2658421	2657853			
ΦNE 14740			2657651	2658421	2657853			
ΦNE 14741			2657651	2658421	2657853			
ΦNE 14743			2657651	2658421	2657853			
ΦNE 14745			2657651	2658421	2657853			
ΦNE 14746			2657651	2658421	2657853			
ΦNE 14748			2657651	2658421	2657853			
ΦNE 14752			2657651	2658421	2657853			
ΦNE 14754			2657651	2658421	2657853			
ΦNE 14775			2657651	2658421	2657853			
ΦNE 14785			2657651	2658421	2657853			
ΦNE 14882			2657651	2658421	2657853			
ΦNE 14899			2657651	2658421	2657853			
ΦNE 14900			2657651	2658421	2657853			
ΦNE 14900			2657651	2658421	2657853			
ΦNE 14969			2657651	2658421	2657853			
ΦNE 15079			2657651	2658421	2657853			
ΦNE 15083			2657651	2658421	2657853			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 15089			2657651	2658421	2657853			
ΦNE 15093			2657651	2658421	2657853			
ΦNE 15099			2657651	2658421	2657853			
ΦNE 15106			2657651	2658421	2657853			
ΦNE 15144			2657651	2658421	2657853			
ΦNE 14750			2657651	2658421	2657854			
ΦNE 15141			2657651	2658421	2657854			
ΦNE 10994			2657651	2658421	2658080			
ΦNE 08143	SAV2516	<i>fbp</i>	2658794	2660758	2658979	+		fructose-bisphosphatase
ΦNE 01975		<i>fbp</i>	2658794	2660758	2659350			
ΦNE 02338		<i>fbp</i>	2658794	2660758	2659350			
ΦNE 06609		<i>fbp</i>	2658794	2660758	2659873			
ΦNE 02774		<i>fbp</i>	2658794	2660758	2660044			
ΦNE 02445		<i>fbp</i>	2658794	2660758	2660275			
ΦNE 02463		<i>fbp</i>	2658794	2660758	2660335			
ΦNE 10881	SAV2517		2661100	2662179	2661170	+		conserved hypothetical protein
ΦNE 03402			2661100	2662179	2661853			
ΦNE 12163			2661100	2662179	2662181		*	
ΦNE 05603	SAV2518		2662284	2662877	2662552	-		conserved hypothetical protein
ΦNE 11951	SAV2519		2662908	2663867	2663088	-		hypothetical protein
ΦNE 13391			2662908	2663867	2663338			
ΦNE 09546			2662908	2663867	2663733			
ΦNE 13650			2662908	2663867	2663774			
ΦNE 04104			2662908	2663867	2663861			
ΦNE 11239	SAV2520		2663945	2664379	2664106	-		hypothetical protein
ΦNE 02392			2663945	2664379	2664286			
ΦNE 06196	SAV2521		2664605	2664889	2664603	+	*	conserved hypothetical protein
ΦNE 13298			2664605	2664889	2664606			
ΦNE 10416	SAV2522		2665060	2665866	2665279	+		conserved hypothetical protein
ΦNE 06488			2665060	2665866	2665573			
ΦNE 11704			2665060	2665866	2665697			
ΦNE 06870	SAV2523		2665987	2666658	2666379	-		hypothetical protein
ΦNE 11429			2665987	2666658	2666543			
ΦNE 07315	SAV2524	<i>ddh</i>	2666865	2667920	2667019	+		D-specific D-2-hydroxyacid dehydrogenase
ΦNE 13284	SAV2525		2668167	2668967	2668163	-	*	conserved hypothetical protein
ΦNE 13859			2668167	2668967	2668417			
ΦNE 13860			2668167	2668967	2668417			
ΦNE 08482			2668167	2668967	2668722			
ΦNE 03857			2668167	2668967	2668801			
ΦNE 03861			2668167	2668967	2668801			
ΦNE 09879	SAV2526		2669287	2669922	2669414	+		hypothetical protein
ΦNE 14514			2669287	2669922	2669811			
ΦNE 04500			2669287	2669922	2669915			
ΦNE 00284	SAV2527		2669937	2670659	2670015	+		conserved hypothetical protein
ΦNE 02253			2669937	2670659	2670088			
ΦNE 03197			2669937	2670659	2670091			
ΦNE 02600			2669937	2670659	2670291			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 11401			2669937	2670659	2670324			
ΦNE 11249			2669937	2670659	2670345			
ΦNE 13022			2669937	2670659	2670604			
ΦNE 03486	SAV2528	<i>srtA</i>	2670821	2671441	2670951	-		sortase
ΦNE 13599	SAV2529		2671635	2672126	2671701	+		hypothetical protein
ΦNE 04089			2671635	2672126	2671705			
ΦNE 11627			2671635	2672126	2671779			
ΦNE 08659	SAV2530		2672619	2673518	2673380	-		hypothetical protein
ΦNE 01751			2673532	2674212	2673621			
ΦNE 08339	SAV2531		2673532	2674212	2673756	-		hypothetical protein
ΦNE 03188			2673532	2674212	2673791			
ΦNE 06735	SAV2532		2674215	2675258	2674564	-		hypothetical protein
ΦNE 06563			2674215	2675258	2674679			
ΦNE 08308			2674215	2675258	2674760			
ΦNE 05330			2674215	2675258	2675237			
ΦNE 10747	SAV2534		2676203	2677129	2676378	+		conserved hypothetical protein
ΦNE 13034			2676203	2677129	2676785			
ΦNE 12580			2676203	2677129	2676956			
ΦNE 08619	SAV2535		2677210	2678178	2677501	-		conserved hypothetical protein
ΦNE 00187			2677210	2678178	2677522			
ΦNE 12724	SAV2537		2678697	2679107	2678866	-		conserved hypothetical protein
ΦNE 09292	SAV2538	<i>ptsG</i>	2679487	2681553	2679810	-		PTS system, glucose-specific II ABC component
ΦNE 05528		<i>ptsG</i>	2679487	2681553	2680043			
ΦNE 10609		<i>ptsG</i>	2679487	2681553	2680367			
ΦNE 09373		<i>ptsG</i>	2679487	2681553	2680581			
ΦNE 09373		<i>ptsG</i>	2679487	2681553	2680581			
ΦNE 14412		<i>ptsG</i>	2679487	2681553	2680925			
ΦNE 00211		<i>ptsG</i>	2679487	2681553	2681096			
ΦNE 00373		<i>ptsG</i>	2679487	2681553	2681096			
ΦNE 03274		<i>ptsG</i>	2679487	2681553	2681396			
ΦNE 12306	SAV2539		2681854	2683593	2682234	-		hypothetical protein
ΦNE 07818			2681854	2683593	2683101			
ΦNE 04814			2681854	2683593	2683316			
ΦNE 07476			2681854	2683593	2683333			
ΦNE 00047			2681854	2683593	2683449			
ΦNE 04017			2681854	2683593	2683485			
ΦNE 08313			2681854	2683593	2683541			
ΦNE 08702	SAV2540		2683644	2684333	2683720	-		conserved hypothetical protein
ΦNE 11998			2683644	2684333	2683844			
ΦNE 12224	SAV2541		2684326	2684721	2684445	-		conserved hypothetical protein
ΦNE 14640			2684326	2684721	2684688			
ΦNE 09433	SAV2542		2684934	2685821	2685029	-		hypothetical protein
ΦNE 12036			2684934	2685821	2685029			
ΦNE 13139			2684934	2685821	2685029			
ΦNE 06771			2684934	2685821	2685135			
ΦNE 11209			2684934	2685821	2685351			
ΦNE 11159			2684934	2685821	2685489			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 00643			2684934	2685821	2685538			
ΦNE 08297			2684934	2685821	2685626			
ΦNE 11917	SAV2543		2685979	2686197	2686151	+		hypothetical protein
ΦNE 06492	SAV2544		2686587	2687018	2687010	+		hypothetical protein
ΦNE 08964			2686587	2687018	2687010			
ΦNE 11357	SAV2545	<i>mvaA</i>	2687157	2688434	2687881	-		hydroxymethylglutaryl-CoA reductase
ΦNE 14634	SAV2546	<i>mvaS</i>	2688689	2689855	2689263	+		3-hydroxy-3-methylglutaryl CoA synthase
ΦNE 07991	SAV2548	<i>clpL</i>	2690950	2693055	2691042	+		ATP-dependent Clp proteinase chain
ΦNE 00319		<i>clpL</i>	2690950	2693055	2691045			
ΦNE 08133		<i>clpL</i>	2690950	2693055	2691488			
ΦNE 11419		<i>clpL</i>	2690950	2693055	2691546			
ΦNE 00686		<i>clpL</i>	2690950	2693055	2692490			
ΦNE 05348		<i>clpL</i>	2690950	2693055	2693017			
ΦNE 06146		<i>clpL</i>	2690950	2693055	2693017			
ΦNE 11788		<i>clpL</i>	2690950	2693055	2693017			
ΦNE 06146		<i>clpL</i>	2690950	2693055	2693017			
ΦNE 11788		<i>clpL</i>	2690950	2693055	2693017			
ΦNE 05131	SAV2549		2693124	2693294	2693194	-		hypothetical protein
ΦNE 05154			2693124	2693294	2693194			
ΦNE 05161			2693124	2693294	2693194			
ΦNE 04186			2693124	2693294	2693236			
ΦNE 08409	SAV2550	<i>feoB</i>	2693307	2695301	2693392	-		ferrous iron transport protein B homolog
ΦNE 04437		<i>feoB</i>	2693307	2695301	2693448			
ΦNE 09781		<i>feoB</i>	2693307	2695301	2694204			
ΦNE 12591		<i>feoB</i>	2693307	2695301	2694346			
ΦNE 14475		<i>feoB</i>	2693307	2695301	2694792			
ΦNE 10189		<i>feoB</i>	2693307	2695301	2695071			
ΦNE 13212		<i>feoB</i>	2693307	2695301	2695135			
ΦNE 04953	SAV2551		2695313	2695540	2695386	-		hypothetical protein
ΦNE 11912			2695313	2695540	2695453			
ΦNE 09037			2695313	2695540	2695542		*	
ΦNE 14609	SAV2552		2695756	2698245	2695893	-		hypothetical protein
ΦNE 10855			2695756	2698245	2696205			
ΦNE 13305			2695756	2698245	2697506			
ΦNE 01546			2695756	2698245	2697580			
ΦNE 07908			2695756	2698245	2697603			
ΦNE 03159			2695756	2698245	2697850			
ΦNE 09561			2695756	2698245	2698082			
ΦNE 11169	SAV2554	<i>rocA</i>	2699294	2700838	2699779	-		1-pyrroline-5-carboxylate dehydrogenase
ΦNE 04868		<i>rocA</i>	2699294	2700838	2699931			
ΦNE 08467		<i>rocA</i>	2699294	2700838	2699956			
ΦNE 11464		<i>rocA</i>	2699294	2700838	2700048			
ΦNE 00458		<i>rocA</i>	2699294	2700838	2700378			
ΦNE 07409		<i>rocA</i>	2699294	2700838	2700639			
ΦNE 08445	SAV2555		2701028	2701627	2701025	-	*	hypothetical protein
ΦNE 08913			2701028	2701627	2701314			
ΦNE 03601			2701028	2701627	2701367			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 07473			2701028	2701627	2701382			
ΦNE 02145			2701028	2701627	2701444			
ΦNE 04387	SAV2557	<i>copA</i>	2702297	2704705	2702439	+		copper-transporting ATPase
ΦNE 06372		<i>copA</i>	2702297	2704705	2702763			
ΦNE 09344		<i>copA</i>	2702297	2704705	2702856			
ΦNE 04996		<i>copA</i>	2702297	2704705	2703065			
ΦNE 05541		<i>copA</i>	2702297	2704705	2703227			
ΦNE 11363		<i>copA</i>	2702297	2704705	2703233			
ΦNE 11079		<i>copA</i>	2702297	2704705	2704038			
ΦNE 12878		<i>copA</i>	2702297	2704705	2704274			
ΦNE 09427		<i>copA</i>	2702297	2704705	2704392			
ΦNE 11762	SAV2558		2705243	2705449	2705434	+		hypothetical protein
ΦNE 08473	SAV2559		2705540	2706538	2705734	-		hypothetical protein
ΦNE 12617	SAV2560		2706561	2707715	2706764	-		hypothetical protein
ΦNE 01831			2706561	2707715	2706765			
ΦNE 01878			2706561	2707715	2706765			
ΦNE 02271			2706561	2707715	2706905			
ΦNE 06348			2706561	2707715	2707072			
ΦNE 01477			2706561	2707715	2707400			
ΦNE 13593			2706561	2707715	2707585			
ΦNE 13594			2706561	2707715	2707585			
ΦNE 00022	SAV2561	<i>crtN</i>	2708143	2709651	2708287	-		squalene synthase
ΦNE 11447		<i>crtN</i>	2708143	2709651	2708393			
ΦNE 03594		<i>crtN</i>	2708143	2709651	2709131			
ΦNE 15226		<i>crtN</i>	2708143	2709651	2709202			
ΦNE 13713	SAV2562	<i>crtM</i>	2709663	2710526	2709663	-		squalene desaturase
ΦNE 07303		<i>crtM</i>	2709663	2710526	2709665			
ΦNE 03760		<i>crtM</i>	2709663	2710526	2709783			
ΦNE 14521		<i>crtM</i>	2709663	2710526	2709786			
ΦNE 12847		<i>crtM</i>	2709663	2710526	2709790			
ΦNE 08294		<i>crtM</i>	2709663	2710526	2709801			
ΦNE 01557		<i>crtM</i>	2709663	2710526	2709826			
ΦNE 06949		<i>crtM</i>	2709663	2710526	2709877			
ΦNE 07682		<i>crtM</i>	2709663	2710526	2710037			
ΦNE 00663		<i>crtM</i>	2709663	2710526	2710068			
ΦNE 01593		<i>crtM</i>	2709663	2710526	2710194			
ΦNE 01602		<i>crtM</i>	2709663	2710526	2710194			
ΦNE 06581		<i>crtM</i>	2709663	2710526	2710537		*	
ΦNE 08865	SAV2563		2710563	2711690	2711070	-		conserved hypothetical protein
ΦNE 02946			2710563	2711690	2711210			
ΦNE 12883	SAV2564		2711696	2713189	2711949	-		hypothetical protein
ΦNE 11414			2711696	2713189	2712018			
ΦNE 14780			2711696	2713189	2712156			
ΦNE 09114			2711696	2713189	2712342			
ΦNE 14702			2711696	2713189	2712441			
ΦNE 11654			2711696	2713189	2712809			
ΦNE 08373	SAV2565		2713182	2713679	2713445	-		hypothetical protein



Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 04150			2713182	2713679	2713659			
ΦNE 05085	SAV2566		2713845	2714612	2714152	-		hypothetical protein
ΦNE 04670			2713845	2714612	2714325			
ΦNE 00179			2713845	2714612	2714370			
ΦNE 00516			2713845	2714612	2714370			
ΦNE 06336			2713845	2714612	2714371			
ΦNE 14402			2713845	2714612	2714394			
ΦNE 03895			2713845	2714612	2714476			
ΦNE 08500	SAV2567		2714973	2716784	2715119	-		hypothetical protein
ΦNE 10792			2714973	2716784	2715226			
ΦNE 12964			2714973	2716784	2715306			
ΦNE 12969			2714973	2716784	2715306			
ΦNE 12970			2714973	2716784	2715306			
ΦNE 12988			2714973	2716784	2715306			
ΦNE 12994			2714973	2716784	2715306			
ΦNE 13000			2714973	2716784	2715306			
ΦNE 13012			2714973	2716784	2715306			
ΦNE 13018			2714973	2716784	2715306			
ΦNE 13024			2714973	2716784	2715306			
ΦNE 13030			2714973	2716784	2715306			
ΦNE 13031			2714973	2716784	2715306			
ΦNE 09897			2714973	2716784	2715397			
ΦNE 08343			2714973	2716784	2715665			
ΦNE 07465			2714973	2716784	2715793			
ΦNE 04546			2714973	2716784	2715839			
ΦNE 12132			2714973	2716784	2715848			
ΦNE 02562			2714973	2716784	2715853			
ΦNE 03636			2714973	2716784	2715853			
ΦNE 04076			2714973	2716784	2715872			
ΦNE 01688			2714973	2716784	2715875			
ΦNE 08515			2714973	2716784	2715978			
ΦNE 14763			2714973	2716784	2716123			
ΦNE 13728			2714973	2716784	2716286			
ΦNE 07459			2714973	2716784	2716328			
ΦNE 12078			2714973	2716784	2716380			
ΦNE 13369			2714973	2716784	2716387			
ΦNE 00792			2714973	2716784	2716421			
ΦNE 02863			2714973	2716784	2716423			
ΦNE 13285	SAV2568		2717297	2717785	2717325	-		conserved hypothetical protein
ΦNE 11346			2717297	2717785	2717341			
ΦNE 02695			2717297	2717785	2717581			
ΦNE 00237	SAV2569	<i>isaA</i>	2718061	2718762	2718061	-		immunodominant antigen A
ΦNE 13112	SAV2570		2719370	2720425	2719477	-		hypothetical protein
ΦNE 06710			2719370	2720425	2719594			
ΦNE 09324			2719370	2720425	2719668			
ΦNE 13770			2719370	2720425	2719798			
ΦNE 08644	SAV2571		2720835	2721404	2720846	+		hypothetical protein

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 14301			2720835	2721404	2721128			
ΦNE 03781	SAV2572		2721782	2722102	2721825	+		hypothetical protein
ΦNE 03529			2721782	2722102	2721827			
ΦNE 12347			2721782	2722102	2721949			
ΦNE 12355			2721782	2722102	2721951			
ΦNE 03508			2721782	2722102	2721963			
ΦNE 05596			2721782	2722102	2722015			
ΦNE 09298			2721782	2722102	2722015			
ΦNE 11528			2721782	2722102	2722015			
ΦNE 10619	SAV2573		2722322	2722552	2722448	+		conserved hypothetical protein
ΦNE 00838	SAV2576		2723248	2724069	2723529	-		conserved hypothetical protein
ΦNE 09414			2723248	2724069	2723753			
ΦNE 04774			2723248	2724069	2723940			
ΦNE 02527			2723248	2724069	2723942			
ΦNE 07871			2723248	2724069	2723972			
ΦNE 11841	SAV2578		2724519	2725076	2724627	+		hypothetical protein
ΦNE 03283			2724519	2725076	2724932			
ΦNE 11432	SAV2579		2725069	2725773	2725159	+		hypothetical protein
ΦNE 14297			2725069	2725773	2725178			
ΦNE 11570			2725069	2725773	2725223			
ΦNE 12234			2725069	2725773	2725228			
ΦNE 12596	SAV2580		2725871	2726881	2725902	+		conserved hypothetical protein
ΦNE 04358			2725871	2726881	2726834			
ΦNE 14009	SAV2581		2726901	2727731	2727191	+		conserved hypothetical protein
ΦNE 07148	SAV2582		2727878	2728768	2727899	-		hypothetical protein
ΦNE 07148			2727878	2728768	2727899			
ΦNE 04499			2727878	2728768	2728468			
ΦNE 05189			2727878	2728768	2728762			
ΦNE 08001	SAV2583		2728865	2730205	2729090	-		hypothetical protein
ΦNE 11809			2728865	2730205	2729632			
ΦNE 13519	SAV2584		2730199	2731305	2730353	-		conserved hypothetical protein
ΦNE 00657			2730199	2731305	2730395			
ΦNE 06313			2730199	2731305	2730606			
ΦNE 13422			2730199	2731305	2730722			
ΦNE 07887			2730199	2731305	2731059			
ΦNE 12457			2730199	2731305	2731076			
ΦNE 02598			2730199	2731305	2731257			
ΦNE 02997			2730199	2731305	2731292			
ΦNE 00421	SAV2585		2731638	2731934	2731922	-		conserved hypothetical protein
ΦNE 10636	SAV2587		2732305	2732580	2732376	-		hypothetical protein
ΦNE 10654			2732305	2732580	2732376			
ΦNE 10910			2732305	2732580	2732376			
ΦNE 10922			2732305	2732580	2732376			
ΦNE 10643			2732305	2732580	2732382			
ΦNE 10939			2732305	2732580	2732399			
ΦNE 04914	SAV2588		2732924	2733790	2733226	-		conserved hypothetical protein
ΦNE 04893	SAV2591		2735688	2736410	2736259	-		conserved hypothetical protein

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 12366			2735688	2736410	2736286			
ΦNE 12473	SAV2594		2738024	2739706	2738057	+		conserved hypothetical protein
ΦNE 03919			2738024	2739706	2739296			
ΦNE 03406			2738024	2739706	2739354			
ΦNE 09691			2738024	2739706	2739470			
ΦNE 02296	SAV2597	<i>panD</i>	2741874	2742245	2741965	-		aspartate 1-decarboxylase
ΦNE 02521	SAV2598	<i>panC</i>	2742259	2743110	2742276	-		pantoate beta-alanine ligase
ΦNE 15175		<i>panC</i>	2742259	2743110	2742280			
ΦNE 07451		<i>panC</i>	2742259	2743110	2742423			
ΦNE 09121		<i>panC</i>	2742259	2743110	2742813			
ΦNE 11785		<i>panC</i>	2742259	2743110	2742813			
ΦNE 13997	SAV2599	<i>panB</i>	2743103	2743921	2743390	-		3-methyl-2-oxobutanoate hydroxymethyltransferase
ΦNE 06644		<i>panB</i>	2743103	2743921	2743753			
ΦNE 06886	SAV2600		2743994	2744854	2744051	+		hypothetical protein
ΦNE 13807			2743994	2744854	2744241			
ΦNE 10884			2743994	2744854	2744284			
ΦNE 05452			2743994	2744854	2744403			
ΦNE 06081			2743994	2744854	2744462			
ΦNE 09112			2743994	2744854	2744487			
ΦNE 00189			2743994	2744854	2744533			
ΦNE 04810			2743994	2744854	2744597			
ΦNE 12720	SAV2602		2745922	2746881	2746068	-		L-lactate dehydrogenase
ΦNE 07805			2745922	2746881	2746189			
ΦNE 13035	SAV2603		2747567	2749015	2748068	+		hypothetical protein
ΦNE 14529			2747567	2749015	2748399			
ΦNE 07788			2747567	2749015	2748419			
ΦNE 13324			2747567	2749015	2748756			
ΦNE 06796			2747567	2749015	2748793			
ΦNE 09991	SAV2604		2749096	2750469	2749169	-		hypothetical protein
ΦNE 14466			2749096	2750469	2749250			
ΦNE 14968			2749096	2750469	2749250			
ΦNE 15091			2749096	2750469	2749250			
ΦNE 00171			2749096	2750469	2749286			
ΦNE 00265			2749096	2750469	2749286			
ΦNE 13360			2749096	2750469	2749387			
ΦNE 02730			2749096	2750469	2749391			
ΦNE 11036			2749096	2750469	2749805			
ΦNE 13720			2749096	2750469	2750192			
ΦNE 04971	SAV2605		2750691	2751107	2750817	+		hypothetical protein
ΦNE 00109			2750691	2751107	2750939			
ΦNE 08555	SAV2606		2751230	2752120	2751484	+		fructose-bisphosphate aldolase homolog
ΦNE 08558			2751230	2752120	2751484			
ΦNE 12975			2751230	2752120	2751485			
ΦNE 08544			2751230	2752120	2751496			
ΦNE 08556			2751230	2752120	2751498			
ΦNE 00773	SAV2607	<i>mgo2</i>	2752314	2753810	2752712	-		malate/quinone oxidoreductase
ΦNE 11441	SAV2608		2754187	2754435	2754251	+		hypothetical protein

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 07242			2754187	2754435	2754260			
ΦNE 11969			2754187	2754435	2754346			
ΦNE 04821	SAV2609		2754495	2756114	2754730	-		acetate-CoA ligase
ΦNE 14556			2754495	2756114	2755876			
ΦNE 10562	SAV2610		2756287	2756730	2756573	-		conserved hypothetical protein
ΦNE 08980			2756287	2756730	2756579			
ΦNE 01537	SAV2612	<i>betA</i>	2757500	2759209	2757572	-		choline dehydrogenase
ΦNE 06805		<i>betA</i>	2757500	2759209	2758094			
ΦNE 09266		<i>betA</i>	2757500	2759209	2758298			
ΦNE 08137		<i>betA</i>	2757500	2759209	2758405			
ΦNE 04344		<i>betA</i>	2757500	2759209	2758468			
ΦNE 07263		<i>betA</i>	2757500	2759209	2758468			
ΦNE 11071		<i>betA</i>	2757500	2759209	2758680			
ΦNE 04143	SAV2613	<i>gbsA</i>	2759470	2760960	2759536	-		glycine betaine aldehyde dehydrogenase
ΦNE 02851		<i>gbsA</i>	2759470	2760960	2759716			
ΦNE 02132		<i>gbsA</i>	2759470	2760960	2759766			
ΦNE 05070		<i>gbsA</i>	2759470	2760960	2759948			
ΦNE 06306		<i>gbsA</i>	2759470	2760960	2760516			
ΦNE 04535		<i>gbsA</i>	2759470	2760960	2760638			
ΦNE 06718	SAV2614		2761210	2761776	2761327	+		conserved hypothetical protein
ΦNE 01962	SAV2615	<i>cutD</i>	2761947	2763569	2762451	-		choline transporter
ΦNE 04088		<i>cutD</i>	2761947	2763569	2762577			
ΦNE 04054		<i>cutD</i>	2761947	2763569	2762595			
ΦNE 06875		<i>cutD</i>	2761947	2763569	2762900			
ΦNE 11177		<i>cutD</i>	2761947	2763569	2763069			
ΦNE 05071		<i>cutD</i>	2761947	2763569	2763126			
ΦNE 02034		<i>cutD</i>	2761947	2763569	2763312			
ΦNE 12512	SAV2616		2764088	2764624	2764144	-		hypothetical protein
ΦNE 04459			2764088	2764624	2764234			
ΦNE 04385	SAV2617	<i>nrdD</i>	2764621	2766471	2765009	-		anaerobic ribonucleoside-triphosphate reductase
ΦNE 07822		<i>nrdD</i>	2764621	2766471	2765015			
ΦNE 11600		<i>nrdD</i>	2764621	2766471	2765354			
ΦNE 09460		<i>nrdD</i>	2764621	2766471	2765713			
ΦNE 12940		<i>nrdD</i>	2764621	2766471	2766171			
ΦNE 03796	SAV2618		2766661	2768031	2766739	-		hypothetical protein
ΦNE 13806			2766661	2768031	2766746			
ΦNE 12389			2766661	2768031	2766789			
ΦNE 14506			2766661	2768031	2766855			
ΦNE 03822			2766661	2768031	2767182			
ΦNE 02850			2766661	2768031	2767353			
ΦNE 13493			2766661	2768031	2767353			
ΦNE 12152			2766661	2768031	2767356			
ΦNE 02491			2766661	2768031	2767622			
ΦNE 12676			2766661	2768031	2767639			
ΦNE 07957			2766661	2768031	2767704			
ΦNE 07118	SAV2619		2768524	2769129	2768661	-		hypothetical protein
ΦNE 12167			2768524	2769129	2768765			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 08426			2768524	2769129	2768971			
ΦNE 03468	SAV2620		2769192	2771072	2769410	-		sulfite reductase flavoprotein
ΦNE 11305			2769192	2771072	2769689			
ΦNE 12193			2769192	2771072	2769786			
ΦNE 07081			2769192	2771072	2770030			
ΦNE 10714			2769192	2771072	2770051			
ΦNE 11923			2769192	2771072	2770225			
ΦNE 00268			2769192	2771072	2770457			
ΦNE 01461			2769192	2771072	2770477			
ΦNE 02085			2769192	2771072	2770698			
ΦNE 13059			2769192	2771072	2770854			
ΦNE 12700	SAV2621		2771466	2771963	2771495	-		hypothetical protein
ΦNE 03913			2771466	2771963	2771507			
ΦNE 02612			2771466	2771963	2771630			
ΦNE 13290			2771466	2771963	2771803			
ΦNE 10657			2771466	2771963	2771851			
ΦNE 14036			2771466	2771963	2771851			
ΦNE 03424	SAV2622		2773387	2775387	2773453	-		hypothetical protein
ΦNE 04001			2773387	2775387	2773476			
ΦNE 09285			2773387	2775387	2773483			
ΦNE 10873			2773387	2775387	2773499			
ΦNE 03533			2773387	2775387	2773767			
ΦNE 03977			2773387	2775387	2773936			
ΦNE 11160			2773387	2775387	2774394			
ΦNE 14619			2773387	2775387	2774621			
ΦNE 06543			2773387	2775387	2775249			
ΦNE 13515	SAV2623		2775384	2776139	2775482	-		hypothetical protein
ΦNE 01691			2775384	2776139	2775647			
ΦNE 05569			2775384	2776139	2775769			
ΦNE 03689			2775384	2776139	2775785			
ΦNE 03452			2775384	2776139	2775799			
ΦNE 05069	SAV2624		2776247	2777134	2776740	-		hypothetical protein
ΦNE 06186			2776247	2777134	2776984			
ΦNE 05304	SAV2625		2777145	2777810	2777457	-		hypothetical protein
ΦNE 12784			2777145	2777810	2777660			
ΦNE 02121	SAV2627	<i>phoB</i>	2778234	2779658	2779030	+		alkaline phosphatase III precursor
ΦNE 15181		<i>phoB</i>	2778234	2779658	2779089			
ΦNE 04781		<i>phoB</i>	2778234	2779658	2779195			
ΦNE 13911		<i>phoB</i>	2778234	2779658	2779195			
ΦNE 09454		<i>phoB</i>	2778234	2779658	2779309			
ΦNE 13140	SAV2629		2780641	2781402	2781185	-		hypothetical protein
ΦNE 08684			2780641	2781402	2781195			
ΦNE 02802			2780641	2781402	2781227			
ΦNE 06861			2780641	2781402	2781238			
ΦNE 14705			2780641	2781402	2781238			
ΦNE 13125		<i>clfB</i>	2781518	2784151	2781516		*	
ΦNE 13153		<i>clfB</i>	2781518	2784151	2781516		*	

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 07323	SAV2630	<i>clfB</i>	2781518	2784151	2782704	-		Clumping factor B
ΦNE 03615		<i>clfB</i>	2781518	2784151	2782814			
ΦNE 02818		<i>clfB</i>	2781518	2784151	2782956			
ΦNE 11940		<i>clfB</i>	2781518	2784151	2783056			
ΦNE 11936		<i>clfB</i>	2781518	2784151	2783081			
ΦNE 00642		<i>clfB</i>	2781518	2784151	2783132			
ΦNE 03129		<i>clfB</i>	2781518	2784151	2783211			
ΦNE 12227		<i>clfB</i>	2781518	2784151	2783212			
ΦNE 08433		<i>clfB</i>	2781518	2784151	2783298			
ΦNE 00826		<i>clfB</i>	2781518	2784151	2783316			
ΦNE 15231		<i>clfB</i>	2781518	2784151	2783557			
ΦNE 07441		<i>clfB</i>	2781518	2784151	2783954			
ΦNE 05159	SAV2631		2784501	2785205	2784971	-		hypothetical protein
ΦNE 13909			2784501	2785205	2785060			
ΦNE 07559			2784501	2785205	2785120			
ΦNE 10668	SAV2632	<i>arcC</i>	2785304	2786272	2785332	-		carbamate kinase
ΦNE 04271		<i>arcC</i>	2785304	2786272	2785550			
ΦNE 07288	SAV2633	<i>arcD</i>	2786262	2787692	2786315	-		arginine/ornithine antiporter
ΦNE 00539		<i>arcD</i>	2786262	2787692	2786433			
ΦNE 12496		<i>arcD</i>	2786262	2787692	2786456			
ΦNE 03994		<i>arcD</i>	2786262	2787692	2786458			
ΦNE 04673		<i>arcD</i>	2786262	2787692	2786503			
ΦNE 05038		<i>arcD</i>	2786262	2787692	2786927			
ΦNE 02118		<i>arcD</i>	2786262	2787692	2786940			
ΦNE 00746	SAV2634	<i>arcB</i>	2787783	2788793	2788093	-		ornithine transcarbamoylase
ΦNE 03256		<i>arcB</i>	2787783	2788793	2788188			
ΦNE 13890		<i>arcB</i>	2787783	2788793	2788319			
ΦNE 01608		<i>arcB</i>	2787783	2788793	2788498			
ΦNE 04053	SAV2635	<i>arcA</i>	2788826	2790061	2788948	-		arginine deiminase
ΦNE 03618		<i>arcA</i>	2788826	2790061	2788949			
ΦNE 05244		<i>arcA</i>	2788826	2790061	2788986			
ΦNE 14719		<i>arcA</i>	2788826	2790061	2788998			
ΦNE 02276		<i>arcA</i>	2788826	2790061	2789164			
ΦNE 12461		<i>arcA</i>	2788826	2790061	2789227			
ΦNE 07482		<i>arcA</i>	2788826	2790061	2789246			
ΦNE 10660		<i>arcA</i>	2788826	2790061	2789358			
ΦNE 04557		<i>arcA</i>	2788826	2790061	2789361			
ΦNE 13137		<i>arcA</i>	2788826	2790061	2789628			
ΦNE 11542		<i>arcA</i>	2788826	2790061	2789858			
ΦNE 06838		<i>arcA</i>	2788826	2790061	2790016			
ΦNE 13057	SAV2636		2790408	2790857	2790506	-		hypothetical protein
ΦNE 11761			2790408	2790857	2790576			
ΦNE 14597			2790408	2790857	2790576			
ΦNE 00400			2790408	2790857	2790618			
ΦNE 12533			2790408	2790857	2790658			
ΦNE 12752			2790408	2790857	2790748			
ΦNE 09030	SAV2637	<i>aur</i>	2791224	2792753	2792521	-		zinc metalloproteinase aureolysin

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 08682	SAV2638	<i>isaB</i>	2793177	2793704	2793212	-		immunodominant antigen B
ΦNE 07630	SAV2639		2793962	2794420	2794006	+		conserved hypothetical protein
ΦNE 13671			2793962	2794420	2794287			
ΦNE 11257	SAV2640		2794660	2796534	2794724	+		hypothetical protein
ΦNE 12185			2794660	2796534	2795247			
ΦNE 05231			2794660	2796534	2795540			
ΦNE 04751			2794660	2796534	2795731			
ΦNE 05700			2794660	2796534	2795947			
ΦNE 00195			2794660	2796534	2796034			
ΦNE 00389			2794660	2796534	2796034			
ΦNE 04988			2794660	2796534	2796136			
ΦNE 07828			2794660	2796534	2796487			
ΦNE 00382	SAV2641		2796610	2798562	2796656	+		fructose phosphotransferase system enzyme fruA homolog
ΦNE 02784			2796610	2798562	2796657			
ΦNE 13387			2796610	2798562	2796658			
ΦNE 00588			2796610	2798562	2796660			
ΦNE 00597			2796610	2798562	2796660			
ΦNE 01473			2796610	2798562	2796660			
ΦNE 12783			2796610	2798562	2796660			
ΦNE 13358			2796610	2798562	2796660			
ΦNE 13366			2796610	2798562	2796660			
ΦNE 13383			2796610	2798562	2796660			
ΦNE 13384			2796610	2798562	2796660			
ΦNE 13418			2796610	2798562	2796660			
ΦNE 13429			2796610	2798562	2796660			
ΦNE 13431			2796610	2798562	2796660			
ΦNE 05456			2796610	2798562	2797695			
ΦNE 05040			2796610	2798562	2798288			
ΦNE 08302			2796610	2798562	2798548			
ΦNE 07093	SAV2642	<i>pmi</i>	2798576	2799514	2798642	+		mannose-6-phosphate isomerase
ΦNE 07094		<i>pmi</i>	2798576	2799514	2798706			
ΦNE 12815		<i>pmi</i>	2798576	2799514	2798728			
ΦNE 04717		<i>pmi</i>	2798576	2799514	2799358			
ΦNE 06343	SAV2643		2799626	2802607	2799954	-		hypothetical protein
ΦNE 08272			2799626	2802607	2800203			
ΦNE 11406			2799626	2802607	2802003			
ΦNE 02659	SAV2644		2802818	2804677	2803509	+		hypothetical protein
ΦNE 14542			2802818	2804677	2803731			
ΦNE 12767			2802818	2804677	2804324			
ΦNE 07147			2802818	2804677	2804543			
ΦNE 10479			2802818	2804677	2804625			
ΦNE 05462	SAV2645		2804942	2805502	2805063	-		hypothetical protein
ΦNE 04073			2804942	2805502	2805068			
ΦNE 00505	SAV2646		2805671	2807578	2805693	-		conserved hypothetical protein
ΦNE 12751			2805671	2807578	2805796			
ΦNE 03078			2805671	2807578	2805931			
ΦNE 09723			2805671	2807578	2806013			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 11485			2805671	2807578	2806581			
ΦNE 10751			2805671	2807578	2806602			
ΦNE 07999			2805671	2807578	2807267			
ΦNE 02604			2805671	2807578	2807583		*	
ΦNE 02354	SAV2647		2807819	2809177	2808116	-		hypothetical protein
ΦNE 12096			2807819	2809177	2808921			
ΦNE 01876			2807819	2809177	2808973			
ΦNE 12898			2807819	2809177	2809113			
ΦNE 03626			2807819	2809177	2809133			
ΦNE 03013	SAV2648		2809170	2810678	2809426	-		hypothetical protein
ΦNE 11879			2809170	2810678	2809528			
ΦNE 13433			2809170	2810678	2809779			
ΦNE 08657			2809170	2810678	2809899			
ΦNE 03692			2809170	2810678	2810098			
ΦNE 03105			2809170	2810678	2810123			
ΦNE 13682			2809170	2810678	2810193			
ΦNE 06262			2809170	2810678	2810248			
ΦNE 00083			2809170	2810678	2810498			
ΦNE 07965	SAV2649		2810696	2813086	2810739	-		preprotein translocase secA homolog
ΦNE 15186			2810696	2813086	2811202			
ΦNE 06606			2810696	2813086	2811385			
ΦNE 06536			2810696	2813086	2811395			
ΦNE 07764			2810696	2813086	2811465			
ΦNE 12755			2810696	2813086	2811537			
ΦNE 00063			2810696	2813086	2811724			
ΦNE 11870			2810696	2813086	2812243			
ΦNE 06770			2810696	2813086	2812655			
ΦNE 12662			2810696	2813086	2812865			
ΦNE 04051			2810696	2813086	2812918			
ΦNE 03906	SAV2650		2813076	2814116	2813317	-		hypothetical protein
ΦNE 06809			2813076	2814116	2813348			
ΦNE 11845			2813076	2814116	2813645			
ΦNE 00878			2813076	2814116	2813986			
ΦNE 00273	SAV2651		2814013	2815581	2814119	-		hypothetical protein
ΦNE 11289			2814013	2815581	2814177			
ΦNE 02497			2814013	2815581	2814180			
ΦNE 15303			2814013	2815581	2814214			
ΦNE 05152			2814013	2815581	2814220			
ΦNE 04967			2814013	2815581	2814221			
ΦNE 08126			2814013	2815581	2814342			
ΦNE 15204			2814013	2815581	2814476			
ΦNE 11731			2814013	2815581	2814824			
ΦNE 02762			2814013	2815581	2814828			
ΦNE 09267	SAV2652		2815571	2817124	2815629	-		hypothetical protein
ΦNE 04305			2815571	2817124	2816152			
ΦNE 04313			2815571	2817124	2816152			
ΦNE 11124			2815571	2817124	2816152			



Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 09398			2815571	2817124	2816158			
ΦNE 08021			2815571	2817124	2816216			
ΦNE 11181			2815571	2817124	2816296			
ΦNE 02681			2815571	2817124	2816321			
ΦNE 03558			2815571	2817124	2816920			
ΦNE 09790	SAV2653		2817135	2818346	2817261	-		hypothetical protein
ΦNE 10579			2817135	2818346	2817314			
ΦNE 12290			2817135	2818346	2817317			
ΦNE 02810			2817135	2818346	2817359			
ΦNE 08822			2817135	2818346	2817548			
ΦNE 08053			2817135	2818346	2817560			
ΦNE 07973			2817135	2818346	2817561			
ΦNE 01728			2817135	2818346	2817671			
ΦNE 01583			2817135	2818346	2817671			
ΦNE 10706			2817135	2818346	2817702			
ΦNE 13893			2817135	2818346	2817702			
ΦNE 06395			2817135	2818346	2817705			
ΦNE 07279			2817135	2818346	2817800			
ΦNE 11024			2817135	2818346	2817803			
ΦNE 07537			2817135	2818346	2817878			
ΦNE 11118			2817135	2818346	2817944			
ΦNE 03661	SAV2654		2818476	2825291	2818846	-		hypothetical protein
ΦNE 13337			2818476	2825291	2819383			
ΦNE 13342			2818476	2825291	2819987			
ΦNE 00264			2818476	2825291	2820277			
ΦNE 09452			2818476	2825291	2820352			
ΦNE 12564			2818476	2825291	2820352			
ΦNE 11529			2818476	2825291	2822530			
ΦNE 04676			2818476	2825291	2822536			
ΦNE 02011			2818476	2825291	2823121			
ΦNE 08225			2818476	2825291	2823198			
ΦNE 08662			2818476	2825291	2823934			
ΦNE 11137			2818476	2825291	2824069			
ΦNE 11967			2818476	2825291	2824072			
ΦNE 14518			2818476	2825291	2824483			
ΦNE 05415			2818476	2825291	2824485			
ΦNE 04712			2818476	2825291	2824739			
ΦNE 12370			2818476	2825291	2824966			
ΦNE 12578			2818476	2825291	2825236			
ΦNE 06330	SAV2655		2825835	2826527	2825876	-		conserved hypothetical protein
ΦNE 11230	SAV2658		2827664	2828023	2827789	+		hypothetical protein
ΦNE 11724	SAV2659		2828108	2828719	2828635	-		conserved hypothetical protein
ΦNE 04485	SAV2660		2828798	2829274	2828829	-		hypothetical protein
ΦNE 03481			2828798	2829274	2828838			
ΦNE 07977			2828798	2829274	2828839			
ΦNE 06434			2828798	2829274	2828841			
ΦNE 04057			2828798	2829274	2828897			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 11474			2828798	2829274	2828997			
ΦNE 02386			2828798	2829274	2829137			
ΦNE 02687			2829277	2829777	2829317			
ΦNE 14612	SAV2661		2829277	2829777	2829526	-		conserved hypothetical protein
ΦNE 03156			2829277	2829777	2829647			
ΦNE 07326	SAV2662	<i>capC</i>	2830012	2830779	2830372	-		capsular polysaccharide biosynthesis
ΦNE 12920		<i>capC</i>	2830012	2830779	2830437			
ΦNE 11295		<i>capC</i>	2830012	2830779	2830499			
ΦNE 04689		<i>capC</i>	2830012	2830779	2830509			
ΦNE 02030	SAV2663	<i>capB</i>	2830776	2831468	2830850	-		capsular polysaccharide biosynthesis
ΦNE 08394		<i>capB</i>	2830776	2831468	2830899			
ΦNE 11334		<i>capB</i>	2830776	2831468	2831460			
ΦNE 12143	SAV2664	<i>capA</i>	2831485	2832147	2832019	-		capsular polysaccharide biosynthesis
ΦNE 11052	SAV2665	<i>icaR</i>	2832996	2833556	2833178	-		ica operon transcriptional regulator
ΦNE 11044		<i>icaR</i>	2832996	2833556	2833193			
ΦNE 11831		<i>icaR</i>	2832996	2833556	2833214			
ΦNE 09269		<i>icaR</i>	2832996	2833556	2833446			
ΦNE 04722	SAV2666	<i>icaA</i>	2833720	2834958	2833794	+		intercellular adhesion protein A
ΦNE 14410		<i>icaA</i>	2833720	2834958	2833797			
ΦNE 09625		<i>icaA</i>	2833720	2834958	2833856			
ΦNE 09758		<i>icaA</i>	2833720	2834958	2833856			
ΦNE 09770		<i>icaA</i>	2833720	2834958	2833856			
ΦNE 09806		<i>icaA</i>	2833720	2834958	2833856			
ΦNE 09841		<i>icaA</i>	2833720	2834958	2833856			
ΦNE 11465		<i>icaA</i>	2833720	2834958	2834106			
ΦNE 12499		<i>icaA</i>	2833720	2834958	2834636			
ΦNE 04780		<i>icaA</i>	2833720	2834958	2834642			
ΦNE 11914		<i>icaA</i>	2833720	2834958	2834702			
ΦNE 08875		<i>icaA</i>	2833720	2834958	2834722			
ΦNE 09217		<i>icaA</i>	2833720	2834958	2834722			
ΦNE 11413		<i>icaA</i>	2833720	2834958	2834866			
ΦNE 06087	SAV2667	<i>icaD</i>	2834922	2835227	2835055	+		intercellular adhesion protein D
ΦNE 11335		<i>icaD</i>	2834922	2835227	2835057			
ΦNE 01598		<i>icaD</i>	2834922	2835227	2835058			
ΦNE 03146	SAV2668	<i>icaB</i>	2835224	2836096	2835342	+		intercellular adhesion protein B
ΦNE 14557	SAV2669	<i>icaC</i>	2836083	2837135	2836128	+		intercellular adhesion protein C
ΦNE 05081		<i>icaC</i>	2836083	2837135	2836763			
ΦNE 06051		<i>icaC</i>	2836083	2837135	2837047			
ΦNE 12308		<i>icaC</i>	2836083	2837135	2837047			
ΦNE 00266		<i>icaC</i>	2836083	2837135	2837113			
ΦNE 00325		<i>icaC</i>	2836083	2837135	2837113			
ΦNE 12300		<i>icaC</i>	2836083	2837135	2837130			
ΦNE 04872	SAV2671	<i>lip</i>	2837470	2839515	2839112	-		triacylglycerol lipase precursor
ΦNE 12464	SAV2672	<i>hisI</i>	2840605	2841237	2840858	-		histidine biosynthesis bifunctional protein HisIE
ΦNE 04758		<i>hisI</i>	2840605	2841237	2841047			
ΦNE 12061	SAV2673	<i>hisF</i>	2841234	2841992	2841469	-		cyclase-like protein hisF
ΦNE 03963		<i>hisF</i>	2841234	2841992	2841562			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 04869	SAV2674		2841989	2842693	2842191	-		hypothetical protein
ΦNE 03892			2841989	2842693	2842195			
ΦNE 09374			2841989	2842693	2842216			
ΦNE 09380			2841989	2842693	2842216			
ΦNE 08447			2841989	2842693	2842334			
ΦNE 12151	SAV2675	<i>hisH</i>	2842686	2843264	2842824	-		amidotransferase hisH
ΦNE 11258		<i>hisH</i>	2842686	2843264	2842888			
ΦNE 11259		<i>hisH</i>	2842686	2843264	2842891			
ΦNE 02790		<i>hisH</i>	2842686	2843264	2843041			
ΦNE 08819		<i>hisH</i>	2842686	2843264	2843041			
ΦNE 05034		<i>hisH</i>	2842686	2843264	2843059			
ΦNE 00062	SAV2676	<i>hisB</i>	2843261	2843839	2843458	-		imidazoleglycerol-phosphate dehydratase
ΦNE 06380		<i>hisB</i>	2843261	2843839	2843518			
ΦNE 02701		<i>hisB</i>	2843261	2843839	2843561			
ΦNE 13480		<i>hisB</i>	2843261	2843839	2843564			
ΦNE 13145		<i>hisB</i>	2843261	2843839	2843670			
ΦNE 02252	SAV2677		2843808	2844821	2843870	-		hypothetical protein
ΦNE 13560			2843808	2844821	2844127			
ΦNE 14349			2843808	2844821	2844127			
ΦNE 00731			2843808	2844821	2844164			
ΦNE 10193			2843808	2844821	2844402			
ΦNE 14028			2843808	2844821	2844760			
ΦNE 00416	SAV2678		2844837	2846087	2844873	-		hypothetical protein
ΦNE 02448			2844837	2846087	2845323			
ΦNE 02001			2844837	2846087	2845700			
ΦNE 02009			2844837	2846087	2845700			
ΦNE 01818	SAV2679	<i>hisG</i>	2846080	2846694	2846359	-		ATP phosphoribosyltransferase
ΦNE 02348		<i>hisG</i>	2846080	2846694	2846634			
ΦNE 15276		<i>hisG</i>	2846080	2846694	2846645			
ΦNE 09578	SAV2680		2846712	2847530	2846760	-		hypothetical protein
ΦNE 03523			2846712	2847530	2847227			
ΦNE 00619			2846712	2847530	2847311			
ΦNE 14435	SAV2681		2847834	2848958	2848147	-		hypothetical protein
ΦNE 13874			2847834	2848958	2848647			
ΦNE 01573			2847834	2848958	2848741			
ΦNE 12301	SAV2682		2849076	2849573	2849483	-		conserved hypothetical protein
ΦNE 12301			2849076	2849573	2849483			
ΦNE 06467	SAV2683		2849620	2850453	2849621	-		conserved hypothetical protein
ΦNE 02640	SAV2684		2850450	2852057	2850478	-		hypothetical protein
ΦNE 00726			2850450	2852057	2851213			
ΦNE 00683	SAV2685		2852215	2852769	2852231	-		conserved hypothetical protein
ΦNE 01613			2852215	2852769	2852499			
ΦNE 04657	SAV2686		2852798	2853646	2853239	-		conserved hypothetical protein
ΦNE 07854			2852798	2853646	2853341			
ΦNE 00734			2852798	2853646	2853372			
ΦNE 02732	SAV2688	<i>drp35</i>	2854693	2855667	2854835	-		Drp35
ΦNE 12111		<i>drp35</i>	2854693	2855667	2854952			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 13419	SAV2689		2855908	2856864	2855937	+		conserved hypothetical protein
ΦNE 07083			2855908	2856864	2855990			
ΦNE 05335			2855908	2856864	2856080			
ΦNE 08989			2855908	2856864	2856169			
ΦNE 12851			2855908	2856864	2856169			
ΦNE 13869			2855908	2856864	2856638			
ΦNE 00709			2855908	2856864	2856674			
ΦNE 14602	SAV2690	<i>pcp</i>	2857016	2857654	2857091	+		pyrrolidone-carboxylate peptidase
ΦNE 03122		<i>pcp</i>	2857016	2857654	2857157			
ΦNE 03122		<i>pcp</i>	2857016	2857654	2857157			
ΦNE 11060		<i>pcp</i>	2857016	2857654	2857260			
ΦNE 04754	SAV2691		2857773	2858540	2858313	-		hypothetical protein
ΦNE 09586			2857773	2858540	2858354			
ΦNE 12749			2857773	2858540	2858409			
ΦNE 09329	SAV2693		2859035	2859499	2859239	+		hypothetical protein
ΦNE 02592			2859035	2859499	2859422			
ΦNE 02837	SAV2694		2859737	2860555	2860062	+		2-oxoglutarate/malate translocator
ΦNE 09484	SAV2696		2861568	2862476	2861624	-		hypothetical protein
ΦNE 13670			2861568	2862476	2861669			
ΦNE 11439			2861568	2862476	2861929			
ΦNE 06096			2861568	2862476	2861998			
ΦNE 04759			2861568	2862476	2862143			
ΦNE 10026			2861568	2862476	2862150			
ΦNE 14292	SAV2697		2862698	2863273	2862754	+		hypothetical protein
ΦNE 00295			2862698	2863273	2862890			
ΦNE 03149			2862698	2863273	2863054			
ΦNE 08648	SAV2698		2863435	2864451	2863477	+		hypothetical protein
ΦNE 03556			2863435	2864451	2863481			
ΦNE 12053			2863435	2864451	2863484			
ΦNE 12056			2863435	2864451	2863484			
ΦNE 13695			2863435	2864451	2863579			
ΦNE 12455			2863435	2864451	2863996			
ΦNE 07874			2863435	2864451	2864023			
ΦNE 09337	SAV2699		2864688	2865488	2865252	+		hypothetical protein
ΦNE 02821	SAV2700		2865622	2866134	2865887	-		conserved hypothetical protein
ΦNE 09820			2865622	2866134	2866091			
ΦNE 11238	SAV2701	<i>vraD</i>	2866417	2867175	2866810	+		hypothetical protein
ΦNE 07568		<i>vraD</i>	2866417	2867175	2866826			
ΦNE 03823		<i>vraD</i>	2866417	2867175	2867118			
ΦNE 07472	SAV2702	<i>vraE</i>	2867165	2869045	2867235	+		hypothetical protein
ΦNE 06193		<i>vraE</i>	2867165	2869045	2867568			
ΦNE 09390		<i>vraE</i>	2867165	2869045	2868328			
ΦNE 02496		<i>vraE</i>	2867165	2869045	2868479			
ΦNE 05599		<i>vraE</i>	2867165	2869045	2868643			
ΦNE 03993		<i>vraE</i>	2867165	2869045	2868841			
ΦNE 12126	SAV2705		2870038	2870607	2870177	-		hypothetical protein
ΦNE 03720			2870038	2870607	2870180			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 09317			2870038	2870607	2870359			
ΦNE 08451			2870038	2870607	2870420			
ΦNE 01767			2870038	2870607	2870421			
ΦNE 03436			2870038	2870607	2870533			
ΦNE 13101			2870038	2870607	2870608		*	
ΦNE 10895			2870038	2870607	2870612		*	
ΦNE 14388	SAV2706		2870867	2871262	2870874	-		hypothetical protein
ΦNE 03664			2870867	2871262	2871132			
ΦNE 02441	SAV2707		2871330	2871683	2871509	-		hypothetical protein
ΦNE 09932			2871330	2871683	2871577			
ΦNE 13476	SAV2704	<i>cspB</i>	2873016	2873735	2873161	+		cold shock protein
ΦNE 13476	SAV2710	<i>gidB</i>	2873016	2873735	2873161	-		glucose inhibited division protein B
ΦNE 13747	SAV2711	<i>gidA</i>	2873735	2875612	2873902	-		glucose inhibited division protein A
ΦNE 12375		<i>gidA</i>	2873735	2875612	2874522			
ΦNE 07232		<i>gidA</i>	2873735	2875612	2874915			
ΦNE 05453		<i>gidA</i>	2873735	2875612	2874917			
ΦNE 02858		<i>gidA</i>	2873735	2875612	2875072			
ΦNE 13310		<i>gidA</i>	2873735	2875612	2875218			
ΦNE 02246		<i>gidA</i>	2873735	2875612	2875236			
ΦNE 08904		<i>gidA</i>	2873735	2875612	2875251			
ΦNE 14505	SAV2712	<i>thdF</i>	2875679	2877058	2875888	-		possible thiophene and furan oxidation protein
ΦNE 10847		<i>thdF</i>	2875679	2877058	2876202			
ΦNE 07508		<i>thdF</i>	2875679	2877058	2876314			
ΦNE 03570		<i>thdF</i>	2875679	2877058	2876559			
ΦNE 14721		<i>thdF</i>	2875679	2877058	2876634			
ΦNE 02773	MW0055		64924	65184	65003	-		conserved hypothetical protein
ΦNE 11453	MW0062		71547	72767	71751	-		hypothetical protein similar to macrolide-efflux determinant
ΦNE 01577			71547	72767	72094			
ΦNE 00163			71547	72767	72388			
ΦNE 04322			71547	72767	72417			
ΦNE 08666			71547	72767	72512			
ΦNE 00271			71547	72767	72628			
ΦNE 06064			71547	72767	72635			
ΦNE 02293	MW0063		72760	73311	73040	-		conserved hypothetical protein
ΦNE 02272	MW0064		73424	74284	73504	+		hypothetical protein similar to transcriptional regulator LysR family
ΦNE 14519			73424	74284	73738			
ΦNE 09523			73424	74284	73743			
ΦNE 14627			73424	74284	73982			
ΦNE 13937			73424	74284	74189			
ΦNE 00711	MW0065		74639	75172	74656	-		hypothetical protein
ΦNE 13134			74639	75172	74744			
ΦNE 14037			74639	75172	75011			
ΦNE 04321			74639	75172	75033			
ΦNE 10944			74639	75172	75115			
ΦNE 14686	MW0066		75272	76006	75352	+		hypothetical protein similar to transcriptional regulator
ΦNE 14449			75272	76006	75939			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 05443	MW0073		84355	85047	84555	+		hypothetical protein
ΦNE 04871	MW0098		117191	117598	117275	+		hypothetical protein
ΦNE 8743			117191	117598	117376			truncated replication initiator protein
ΦNE 03653	MW0120		140106	140591	140510	+		truncated replication initiator protein
ΦNE 11395	MW0122		141994	142215	142007	+		tuncated hypothetical protein similar to transposase
ΦNE 12845			141994	142215	142021			exotoxin homolog
ΦNE 11339			141994	142215	142123			
ΦNE 07299	MW0263		311165	315604	315567	+		conserved hypothetical protein
ΦNE 02763	MW0387	<i>set21</i>	435077	435775	435613	+		exotoxin homolog
ΦNE 04807			435077	435775	435771			
ΦNE 03693	MW0398	<i>lpl11</i>	447351	448121	447583	+		exotoxin homolog
ΦNE 06707			447351	448121	448016			
ΦNE 12877	MW0551		637142	638551	638505	+		hypothetical protein
ΦNE 12877	MW0552		638555	639181	638505	+		hypothetical protein
ΦNE 12423	MW0553		639317	639949	639835	+		conserved hypothetical protein
ΦNE 04808	MW0554		640037	640654	640106	+		conserved hypothetical protein
ΦNE 03645			640037	640654	640306			
ΦNE 6382			640037	640654	640344			
ΦNE 13227	MW0555		640729	641358	640743	+		conserved hypothetical protein
ΦNE 02045			640729	641358	640813			
ΦNE 06114			640729	641358	641076			
ΦNE 13227	MW0558		642993	643622	643021	+		conserved hypothetical protein
ΦNE 10899			642993	643622	643393			
ΦNE 13580			642993	643622	643513			
ΦNE 04799			642993	643622	643560			
ΦNE 06624	MW0559		644075	644704	644346	+		conserved hypothetical protein
ΦNE 04898			644075	644704	644609			
ΦNE 09453	MW0560		644828	645469	645292	+		hypothetical protein
ΦNE 03457	MW0562		646376	647002	646904	+		hypothetical protein
ΦNE 7212	MW0689		774468	775973	774945	-		hypothetical protein
ΦNE 12203	MW0695		782764	783735	782151	+		hypothetical protein
ΦNE 03435	MW0764	<i>clfA</i>	857002	859842	858094	+		fibrinogen binding protein
ΦNE 03828	MW0765		860063	860539	860219	+		truncated VWbp
ΦNE 13084	MW0766		860591	861589	861572	+		truncated VWbp
ΦNE 05133	MW0918		1010888	1011175	1010981	+		hypothetical protein
ΦNE 13405			1010888	1011175	1011104			
ΦNE 08636	MW0919		1011181	1012662	1011536	+		hypothetical protein
ΦNE 11178	MW1199		1314367	1314579	1314570	+		hypothetical protein
ΦNE 06097	MW1201		1315360	1315821	1315601	+		hypothetical protein
ΦNE 02413			1315360	1315821	1315804			
ΦNE 10446	MW1309	<i>truncated-tnp</i>	1430644	1431050	1430864	+		truncated tranposase
ΦNE 04975	MW1324	<i>ebh</i>	1441540	1471254	1465314	-		hypothetical protein
ΦNE 6297	MW1327		1474553	1475593	1474965	-		threonine deaminase IIvA homolog
ΦNE 10206	MW1380	<i>truncated-lytA</i>	1531688	1533142	1532395	-		truncated amidase
ΦNE 6174	MW1381		1533153	1533455	1533310	-		holin
ΦNE 07984	MW1422		1563980	1564237	1564299	-		hypothetical protein
ΦNE 07984	MW1423		1564237	1564638	1564299	-		hypothetical protein

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 13121	MW1436		1571120	1571443	1571494			phage repressor
ΦNE 13121	MW1437		1571516	1571917	1571494	+		hypothetical protein
ΦNE 06384	MW1442	<i>int</i>	1573725	1574930	1573784	+		glutamate-1-semialdehyde 2,1-aminomutase
ΦNE 05098			1573725	1574930	1573798			
ΦNE 04815			1573725	1574930	1573967			
ΦNE 06992	MW1611	<i>hemL</i>	1738049	1739335	1738701	-		
ΦNE 03201	MW1699		1846761	1853321	1852098	-		hypothetical protein
ΦNE 00462			1846761	1853321	1852276			
ΦNE 03507	MW1742		1891660	1892127	1891970	-		hypothetical protein
ΦNE 00599	MW1743		1891660	1892127	67871			hypothetical protein
ΦNE 04923	MW1749		1895586	1899698	1896041	-		hypothetical protein
ΦNE 09975			1895586	1899698	1896136			
ΦNE 06129			1895586	1899698	1896229			
ΦNE 06137			1895586	1899698	1896229			
ΦNE 09365			1895586	1899698	1896413			
ΦNE 06830			1895586	1899698	1896918			
ΦNE 06182			1895586	1899698	1896959			
ΦNE 07209			1895586	1899698	1897289			
ΦNE 02003			1895586	1899698	1898062			
ΦNE 04498			1895586	1899698	1898149			
ΦNE 14392			1895586	1899698	1898280			
ΦNE 12443			1895586	1899698	1898302			
ΦNE 06966			1895586	1899698	1898678			
ΦNE 12874			1895586	1899698	1899127			
ΦNE 02937	MW1759	<i>bsaE</i>	1909529	1910290	1909921	-		hypothetical protein
ΦNE 11199		<i>bsaE</i>	1909529	1910290	1910014			
ΦNE 06692	MW1760	<i>bsaF</i>	1910287	1910979	1910423			hypothetical protein
ΦNE 06691		<i>bsaF</i>	1910287	1910979	1910435			
ΦNE 02041		<i>bsaF</i>	1910287	1910979	1910718			
ΦNE 03278	MW1761	<i>bsaP</i>	1911002	1912375	1911087	-		hypothetical protein
ΦNE 03627	MW1762	<i>bsaD</i>	1912385	1912903	1912665	-		hypothetical protein
ΦNE 14413		<i>bsaD</i>	1912385	1912903	1912695			
ΦNE 09472	MW1763	<i>bsaC</i>	1912919	1914163	1913250			hypothetical protein
ΦNE 11359		<i>bsaC</i>	1912919	1914163	1913815			
ΦNE 09465	MW1764	<i>bsaB</i>	1914156	1917149	1915206			hypothetical protein
ΦNE 08838		<i>bsaB</i>	1914156	1917149	1915648			
ΦNE 02421		<i>bsaB</i>	1914156	1917149	1916101			
ΦNE 10646		<i>bsaB</i>	1914156	1917149	1916186			
ΦNE 06632		<i>bsaB</i>	1914156	1917149	1916642			
ΦNE 04517			1914156	1917149	1916978			
ΦNE 05631	MW1771		1925009	1925563	1925021	-		conserved hypothetical protein
ΦNE 07344	MW1879	<i>truncated-mapW</i>	2043597	2045647	2044206	-		truncated mapW protein
ΦNE 11550	MW1918		2075355	2075759	2075565	-		hypothetical protein
ΦNE 07347	MW1932		2083152	2083901	2083690	-		phage antirepressor
ΦNE 12791	MW1947		2098129	2098572	2098183	-		hypothetical protein
ΦNE 12114			2098129	2098572	2098205			

Mutant no.	ORF	Gene name	Gene begin	Gene end	Hit begin	Strand	IGR	Gene product
ΦNE 03866			2098129	2098572	2098501			
ΦNE 14443			2098129	2098572	2098571			
ΦNE 08734	MW1949		2098129	2098572	2099869	-		hypothetical protein
ΦNE 06539	MW1950		2100019	2100234	2100153	-		hypothetical protein
ΦNE 05066	MW2125		2291448	2292056	2291564	-		hypothetical protein
ΦNE 02690			2291448	2292056	2291588			
ΦNE 02436	MW2197	<i>modA</i>	2345483	2346265	2345928	-		probable molybdate binding protein
ΦNE 04363	MW2233		2380849	2381163	2380872	+		truncated transposase
ΦNE 03736	MW2377		2532845	2533621	2533340	-		TcaA protein
ΦNE 14390	MW2383		2537461	2539038	2537482	-		hypothetical protein
ΦNE 09585	MW2384		2539234	2539983	2539692	+		hypothetical protein
ΦNE 08070	MW2395		2550354	2550716	2550512	-		hypothetical protein
ΦNE 13502			2550354	2550716	2699871			
ΦNE 03748	MW2534		2699848	2700534	2700074	-		hypothetical protein
ΦNE 04965	MW0517	<i>sdrD</i>	632692	636849	600277			Ser-Asp rich fibrinogen-binding bone sialoprotein binding protein
ΦNE 00449	SA0385	<i>set9</i>	444488	445366	146548	+		exotoxin 9
ΦNE 00038	SA0877	<i>prfC</i>	994216	995778	994499	+		peptide chain release factor 3
ΦNE 00473	SA1787		2034646	2034903	2034666	-		hypothetical protein
ΦNE 00646	SA1797		2041163	2041423	2041321	-		hypothetical protein
ΦNE 00832			2041163	2041423	2041338			
ΦNE 13388			2041163	2041423	2041378			
ΦNE 06296	SA1801		2042941	2043693	2043648	-		antirepressor
ΦNE 01711	SA1802		2043744	2044073	2043893	+		hypothetical protein
ΦNE 13281	SA1804		2044293	2044556	2044548	-		hypothetical transcriptional regulator
ΦNE 03466	SA1806		2045419	2046351	2045543	+		probable ATP-dependent helicase
ΦNE 11541			2045419	2046351	2045835			
ΦNE 12794			2045419	2046351	2045931			
ΦNE 03584			2045419	2046351	2045933			
ΦNE 05547	SAS067		2121531	2121701	2121700	-		probable molybdate binding protein
ΦNE 02052	SA2074	<i>modA</i>	2334301	2335085	2334684	-		hypothetical protein

Summary of all insertion mutants that have an identifiable BLAST hit in one of three completed staphylococcal genomes (Mu50, MW2, and N315). The prefixes indicate which genome sequence the *S. aureus* strain Newman insertion mutant matches: SAV corresponds to Mu50, MW corresponds to MW2, and SA and SAS correspond to N315.

An asterisk in the intergenic region (IGR) column indicates an insertion in an intergenic region, but within 10 nucleotides of a neighboring gene.