

Table S2: List of variable genes identified in the genomes of *B. catenulatum*/*B. pseudocatenulatum* strains through

CGH experiments

ORF	Product	DSM20438	202B	249B	318B	853B	DSM16992	660-1	660-7	676	MB271
BIFPSEUDO_02358	phosphoribosyl isomerase	+	+	+	+	+	-	+	-	+	+
BIFPSEUDO_02359	carbohydrate kinase	+	+	+	+	+	-	-	+	+	+
BIFPSEUDO_02360	kB family carbohydrate kinase	+	+	+	+	+	-	+	-	+	+
BIFPSEUDO_02361	sulfatase	+	+	+	+	+	+	+	-	+	+
BIFPSEUDO_02365	NADPH:quinone oxidoreductases or alcohol dehydrogenase	+	+	+	+	+	-	+	-	-	+
BIFPSEUDO_02369	putative transport protein of outer membrane lipoproteins	+	+	+	+	+	+	-	+	-	-
BIFPSEUDO_02370	hypothetical protein prot	+	+	+	+	+	+	-	+	+	+
BIFPSEUDO_02374	putative ATP-binding component of an ABC transporter	+	+	+	+	-	+	+	+	+	+
BIFPSEUDO_02392	translation elongation factors	+	+	+	+	+	+	+	+	+	-
BIFPSEUDO_02394	hypothetical protein	+	+	+	+	+	-	+	+	+	-
BIFPSEUDO_02395	hypothetical protein	+	+	+	+	+	+	+	+	-	+
BIFPSEUDO_02408	oligopeptide transport protein of the ABC superfamily	+	-	+	+	+	+	+	+	-	+
BIFPSEUDO_02409	peptide ABC transporter permease	+	+	+	+	+	-	+	+	+	+
BIFPSEUDO_02410	ABC peptide transporter, permease component	+	-	+	+	-	-	-	-	-	+
BIFPSEUDO_02411	hypothetical protein	+	+	+	+	-	+	+	+	-	+
BIFPSEUDO_02415	two-component system histidine kinase	+	-	+	+	+	+	+	+	+	+
BIFPSEUDO_02418	LysR-type transcriptional regulators	+	-	+	-	+	+	+	+	+	+
BIFPSEUDO_02420	beta-galactosidase I	+	+	+	+	+	-	+	-	+	-
BIFPSEUDO_02421	binding-protein-dependent transport systems	+	+	+	-	-	-	-	-	-	-
BIFPSEUDO_02422	ABC transporter	+	+	+	-	-	+	+	-	+	+
BIFPSEUDO_02423	ABC transporter ATP-binding protein	+	+	+	-	-	+	+	-	+	-
BIFPSEUDO_02436	FtsX-like protein involved in cell division	+	+	+	+	+	-	+	-	+	+
BIFPSEUDO_02437	ATPase involved in cell division	+	+	+	+	-	-	-	-	-	-
BIFPSEUDO_02438	peptide chain release factor RF2	+	-	+	+	-	+	+	-	+	+
BIFPSEUDO_02439	hypothetical protein	+	+	+	+	+	-	+	-	+	+
BIFPSEUDO_02440	hypothetical protein	+	+	+	+	+	+	+	-	+	-
BIFPSEUDO_02457	ABC-type transporter, ATPase and permease components	+	+	+	+	+	-	+	-	+	+
BIFPSEUDO_02458	hypothetical protein	+	+	+	+	+	+	+	-	+	+
BIFPSEUDO_02459	serine/threonine protein kinase	+	+	+	+	+	-	-	-	-	-
BIFPSEUDO_02460	methyltransferase	+	+	+	+	+	+	+	-	+	+
BIFPSEUDO_02479	predicted transcriptional regulator	+	+	+	+	+	+	-	+	+	+
BIFPSEUDO_02482	hypothetical protein	+	+	+	+	+	-	+	+	+	+
BIFPSEUDO_02483	ABC superfamily ATP binding cassette transporter	+	+	+	+	+	+	+	-	+	+
BIFPSEUDO_02485	hypothetical protein	+	+	+	+	+	+	-	+	+	+
BIFPSEUDO_02491	putative sialate O-acetyltransferase	+	+	+	+	+	-	+	-	+	+
BIFPSEUDO_02496	glycine betaine/L-proline ABC transporter	+	+	+	+	-	+	-	+	+	-
BIFPSEUDO_02497	binding-protein-dependent transport protein	+	+	+	+	+	-	+	+	+	-
BIFPSEUDO_02498	sugar-binding lipoprotein	+	+	+	+	+	-	+	-	-	-

BIFPSEUDO_02504	acyl-CoA thioesterase II	+	-	-	+	+	+	+	+	+	+
BIFPSEUDO_02512	D-alanyl-D-alanine carboxypeptidase	+	-	+	-	+	+	+	+	+	+
BIFPSEUDO_02518	putative cyclic diguanylate phosphodiesterase domain protein	+	+	-	+	+	+	+	+	+	+
BIFPSEUDO_02519	hypothetical protein	+	+	-	+	-	-	-	-	-	-
BIFPSEUDO_02520	Polyphosphate(polyP) polymerase	+	+	-	+	+	+	+	-	+	+
BIFPSEUDO_02523	group 1 glycosyl transferase	+	+	-	+	+	+	+	+	-	+
BIFPSEUDO_02524	membrane protein	+	+	+	+	+	-	+	-	+	-
BIFPSEUDO_02538	OsmC-like protein	+	+	+	+	+	-	+	-	-	-
BIFPSEUDO_02544	hypothetical protein	+	+	+	+	-	-	+	-	+	-
BIFPSEUDO_02551	putative alpha/beta superfamily hydrolase	+	-	+	-	+	-	-	-	-	-
BIFPSEUDO_02553	sugar (Glycoside-Pentoside-Hexuronide) transporter	+	-	+	-	+	+	+	+	+	+
BIFPSEUDO_02555	LacI transcriptional regulators	+	-	+	-	+	+	+	+	+	+
BIFPSEUDO_02566	transcriptional regulator, GntR family	+	-	+	-	-	-	+	+	+	+
BIFPSEUDO_02569	putative homoserine kinase type II	+	-	+	-	-	-	+	-	-	-
BIFPSEUDO_02581	hypothetical protein	+	+	+	+	+	-	-	-	-	-
BIFPSEUDO_02594	hypothetical protein	+	-	-	-	+	+	+	+	+	+
BIFPSEUDO_02596	Conserved hypothetical protein transglutaminase family	+	+	-	-	+	+	+	+	+	+
BIFPSEUDO_02635	hypothetical protein	+	+	+	+	+	+	+	-	+	+
BIFPSEUDO_02643	predicted dehydrogenase	+	+	+	+	+	-	+	-	-	-
BIFPSEUDO_02653	beta-1,4-xylosidase	+	-	-	+	+	+	+	+	+	+
BIFPSEUDO_02654	dipeptide ABC transporter	+	-	-	-	+	+	+	+	+	+
BIFPSEUDO_02655	fused ATPase and permease components of ABC-type	+	-	-	-	+	+	+	+	+	+
BIFPSEUDO_02657	ABC-type dipeptide/oligopeptide/nickel transport system	+	-	-	-	+	+	+	+	+	+
BIFPSEUDO_02658	acetate kinase	+	-	-	-	+	+	+	+	+	+
BIFPSEUDO_02660	probable ferredoxin FdxC	+	-	+	-	+	+	+	+	+	+
BIFPSEUDO_02662	UDP-N-acetylenolpyruvoylglucosamine reductase	+	-	+	-	+	+	+	+	+	+
BIFPSEUDO_02672	5,10-methenyltetrahydrofolate synthetase	+	-	-	-	+	+	+	+	+	+
BIFPSEUDO_02674	hypothetical protein	+	-	+	-	+	+	+	+	+	+
BIFPSEUDO_02677	beta-N-acetylglucosaminidase	+	-	-	-	+	+	+	+	+	+
BIFPSEUDO_02681	guanine-hypoxanthine permease	+	+	+	+	+	-	+	-	+	+
BIFPSEUDO_02687	LysR-type transcriptional regulators	+	+	+	-	+	+	+	+	+	+
BIFPSEUDO_02693	phospho-2-dehydro-3-deoxyheptonate aldolase	+	+	-	-	+	+	+	+	+	+
BIFPSEUDO_02702	hypothetical protein	+	-	-	-	+	+	+	+	+	+
BIFPSEUDO_02716	biotin-[acetyl-CoA-carboxylase] ligase	+	+	+	+	+	+	-	+	-	+
BIFPSEUDO_02749	nicotinate phosphoribosyltransferase	+	+	+	+	+	+	+	-	+	+
BIFPSEUDO_02753	hypothetical protein	+	+	+	+	-	-	-	-	-	-
BIFPSEUDO_02774	hypothetical protein	+	+	+	+	+	+	+	-	+	+
BIFPSEUDO_02780	hypothetical protein	+	+	-	+	-	-	-	-	+	-
BIFPSEUDO_02787	putative 6-phosphogluconate dehydrogenase	+	-	-	+	-	-	-	-	-	-
BIFPSEUDO_02795	ABC transporter ATP-binding protein	+	+	+	+	+	+	-	+	-	-

BIFPSEUDO_02796	ABC transporter permease	+	+	+	+	+	-	+	+	+	-
BIFPSEUDO_02798	Solute binding protein of ABC transporter system	+	+	+	+	+	-	+	-	+	-
BIFPSEUDO_02805	hypothetical protein	+	+	+	+	+	-	+	+	+	+
BIFPSEUDO_02808	hypothetical protein	+	+	+	+	-	-	-	-	-	-
BIFPSEUDO_02809	IcIR-type transcriptional regulator	+	+	+	+	+	+	-	+	+	+
BIFPSEUDO_02810	metallophosphatase superfamily	+	+	+	+	-	-	-	-	-	-
BIFPSEUDO_02819	Major Facilitator Superfamily	+	+	+	+	-	-	-	-	-	-
BIFPSEUDO_02822	formate--tetrahydrofolate ligase	+	+	+	+	-	+	+	+	+	+
BIFPSEUDO_02839	hypothetical protein	+	+	+	-	+	-	+	-	+	+
BIFPSEUDO_02841	sugar permease of ABC transporter system	+	+	+	-	-	-	-	-	-	-
BIFPSEUDO_02842	sugar ABC superfamily ATP binding cassette transporter	+	+	+	-	+	+	-	-	-	-
BIFPSEUDO_02843	COG1653: ABC-type sugar transport system	+	+	+	-	+	+	+	+	+	+
BIFPSEUDO_02845	exo-alpha-L-arabinofuranosidase	+	+	-	-	+	-	+	-	-	-
BIFPSEUDO_02847	transcriptional regulator, LacI family/carbohydrate kinase	+	+	+	+	-	-	-	-	-	-
BIFPSEUDO_02870	hypothetical protein	+	+	+	+	+	+	-	+	-	+
BIFPSEUDO_02872	polyphosphate kinas	+	+	+	+	-	+	-	+	-	-
BIFPSEUDO_02877	alpha-L-arabinofuranosidase	+	+	+	+	+	-	-	-	-	-
BIFPSEUDO_02878	zinc metalloprotease ZmpB, putative	+	+	+	+	-	+	+	+	+	+
BIFPSEUDO_02882	ABC transporter, putative molybdenum transport system	+	+	+	+	-	+	+	+	+	+
BIFPSEUDO_02885	2-polyprenylphenol 6-hydroxylase	+	-	-	+	+	+	+	+	+	+
BIFPSEUDO_02890	replicative DNA helicase	+	+	+	-	+	+	+	+	+	+
BIFPSEUDO_02900	hyp prot BIFANG_02039	+	+	+	+	+	-	+	-	-	+
BIFPSEUDO_02910	conserved hyp prot	+	-	+	+	+	+	+	+	+	+
BIFPSEUDO_02911	hypothetical protein BIFADO_02088	+	-	-	-	+	+	+	+	+	-
BIFPSEUDO_02914	possible peptidyl-prolyl cis-trans isomerase	+	-	-	-	-	+	+	-	-	-
BIFPSEUDO_02926	hypothetical protein BIFDEN_01759	+	+	+	+	-	-	-	-	-	-
BIFPSEUDO_02928	DNA gyrase B subuni	+	+	+	+	+	+	+	-	+	+
BIFPSEUDO_02934	hypothetical protein BIFCAT_00541	+	+	+	-	+	-	+	+	+	+
BIFPSEUDO_02952	pyridine transhydrogenase subunit	+	+	+	+	+	-	-	-	+	-
BIFPSEUDO_02954	Response regulator	+	+	+	+	-	-	+	+	+	+
BIFPSEUDO_02958	ABC-type multidrug transport system	+	+	+	+	+	+	+	+	-	-
BIFPSEUDO_02961	two component transcriptional regulator	+	+	+	+	+	+	+	+	+	-
BIFPSEUDO_02971	ABC-type dipeptide/oligopeptide/nickel transport system	+	+	-	+	+	+	+	-	+	+
BIFPSEUDO_02974	oppA2 Oligopeptide-binding protein oppA	+	+	-	+	+	+	-	-	-	+
BIFPSEUDO_02975	ABC-type oligopeptide transport system	+	+	+	+	+	-	+	-	+	-
BIFPSEUDO_02982	sugar transporter	+	+	+	+	+	-	+	-	+	+
BIFPSEUDO_02983	Nudix_Hydrolase	+	+	+	+	+	+	+	+	+	-
BIFPSEUDO_02995	hypothetical protein BIFCAT_00471	+	-	-	+	+	+	+	+	+	+
BIFPSEUDO_02999	FemAB family	+	+	+	+	-	+	+	+	+	+

BIFPSEUDO_03005	oppD1 Oligopeptide transport ATP-binding	+	+	+	+	+	+	+	+	+	-
BIFPSEUDO_03006	ABC-ATPase subunit interface	+	+	+	+	+	+	+	-	+	-
BIFPSEUDO_03008	Transcriptional regulator/sugar kinase	+	+	+	+	+	-	+	-	+	+
BIFPSEUDO_03013	UDP-N-acetylmuramate-L-alanine ligase	+	+	-	+	+	+	+	+	+	+
BIFPSEUDO_03016	UDP-N-acetylmuramoyl-L-alanyl-D-glutamate synthetase	+	-	-	-	+	+	+	+	+	+
BIFPSEUDO_03030	putative transport system permease	+	+	+	+	+	-	+	-	+	+
BIFPSEUDO_03035	hyp prot BIFADO_02223	+	+	+	+	+	+	+	-	+	+
BIFPSEUDO_03038	ABC transporter component	+	+	+	+	+	+	+	-	+	-
BIFPSEUDO_03041	dual-specificity protein kinase	+	+	+	+	-	-	-	-	-	-
BIFPSEUDO_03051	possible lipoprotein signal peptidase	+	+	+	+	+	-	+	-	+	-
BIFPSEUDO_03058	hyp prot BIFADO_02257	+	+	+	+	+	-	+	-	+	+
BIFPSEUDO_03061	prepilin signal peptidase	+	+	+	+	+	-	+	-	+	+
BIFPSEUDO_03063	Bacterial type II secretion system protein F domain	+	+	-	+	+	+	+	+	+	+
BIFPSEUDO_03069	pilus retraction ATPase PilT	+	+	-	+	-	-	-	-	-	-
BIFPSEUDO_03071	4-methyl-5-beta-hydroxyethylthiazole	+	+	-	+	-	-	-	-	-	-
BIFPSEUDO_03080	Solute binding protein of ABC transporter	+	+	+	+	+	-	-	+	-	-
BIFPSEUDO_03110	hypothetical protein	+	+	+	+	+	-	+	-	+	-
BIFPSEUDO_03112	CRISPR/Cas system-associated protein Cas2	+	+	+	+	+	-	-	-	-	-
BIFPSEUDO_03113	CRISPR/Cas system-associated protein Cas1	+	+	+	+	+	-	-	-	-	-
BIFPSEUDO_03115	CRISPR-associated Csh2 family protein	+	+	+	+	+	-	-	-	+	+
BIFPSEUDO_03116	CRISPR-associated protein Cas8c/Csd1	+	+	+	+	+	-	-	-	-	-
BIFPSEUDO_03118	CRISPR-associated helicase Cas3	+	+	+	+	+	+	+	-	+	+
BIFPSEUDO_03119	putative CRISPR-associated helicase	+	+	+	+	-	-	-	-	-	-
BIFPSEUDO_03134	tetR-type transcriptional regulator	+	+	+	+	+	-	+	+	+	+
BIFPSEUDO_03136	ligase/carboxylase and argininosuccinate lyase	+	+	-	-	+	+	+	+	+	+
BIFPSEUDO_03142	The Major Facilitator Superfamily (MFS)	+	-	-	-	-	-	-	+	-	-
BIFPSEUDO_03145	glucosylceramidase	+	+	-	-	+	+	+	+	+	+
BIFPSEUDO_03170	MutT/nudix family protein	+	-	+	+	-	-	-	-	+	+
BIFPSEUDO_03172	putative transposase, IS891/IS1136/IS1341 family	+	-	-	+	+	+	-	+	+	-
BIFPSEUDO_03173	transposase IS200-family protein	+	-	-	+	-	-	-	-	-	+
BIFPSEUDO_03174	helicases of superfamily II	+	-	+	+	+	+	-	-	-	+
BIFPSEUDO_03180	hyp prot BIFCAT_00317	+	+	+	+	+	+	+	-	+	+
BIFPSEUDO_03181	hypothetical protein	+	+	+	+	+	+	+	+	+	-
BIFPSEUDO_03185	beta-galactosidase	+	+	+	+	+	-	-	-	-	-
BIFPSEUDO_03190	hypothetical protein	+	+	+	+	+	+	-	+	-	+
BIFPSEUDO_03192	putative transport protein	+	+	+	+	+	+	+	+	-	+
BIFPSEUDO_03202	hyp prot BIFCAT_01424	+	+	-	-	+	+	+	+	+	+
BIFPSEUDO_03203	Sortase C	+	+	-	-	+	+	+	+	+	+
BIFPSEUDO_03204	hyp prot BIFCAT_01422	+	+	-	-	+	+	+	+	+	+
BIFPSEUDO_03205	EntS/YbdA MFS transporter	+	+	-	-	+	+	+	+	+	+

BIFPSEUDO_03217	Glycosyl hydrolases family 2	+	+	-	+	+	+	+	+	+	+
BIFPSEUDO_03218	LacI-type transcriptional regulator	+	+	-	-	-	+	+	+	+	+
BIFPSEUDO_03219	hyp prot BLJ_0327	+	+	-	-	-	-	-	-	-	-
BIFPSEUDO_03221	amidohydrolase 2	+	+	-	-	+	+	+	+	+	-
BIFPSEUDO_03223	mandelate racemase/muconate lactonizing enzyme	+	+	-	-	-	-	-	-	+	-
BIFPSEUDO_03224	extracellular solute-binding protein, family 1	+	+	-	-	-	+	-	+	-	-
BIFPSEUDO_03225	binding-protein-dependent transport systems	+	+	-	-	-	-	-	-	-	-
BIFPSEUDO_03226	binding-protein-dependent transport systems	+	+	-	+	+	-	+	-	+	+
BIFPSEUDO_03227	periplasmic-binding protein/LacI transcriptional regulator	+	+	-	-	-	+	+	+	-	-
BIFPSEUDO_03228	Type 1 glutamine amidotransferase	+	+	-	-	-	-	-	+	-	-
BIFPSEUDO_03229	LysR-type transcriptional regulators	+	+	+	+	+	-	+	+	+	+
BIFPSEUDO_03230	LacI-family transcriptional regulator	+	+	-	-	+	+	+	+	+	+
BIFPSEUDO_03232	Glycosidases	+	+	+	-	+	+	+	+	-	-
BIFPSEUDO_03235	Beta-galactosidase	+	+	+	+	+	+	+	-	+	-
BIFPSEUDO_03237	hypothetical protein	+	+	-	-	-	-	-	-	-	-
BIFPSEUDO_03238	Mn2+ and Fe2+ transporters	+	+	+	-	+	+	-	+	-	+
BIFPSEUDO_03239	hypothetical protein	+	+	-	-	-	-	+	+	+	+
BIFPSEUDO_03240	Aldo-keto reductases	+	+	+	-	+	+	+	+	+	+
BIFPSEUDO_03245	Exonuclease-Endonuclease-Phosphatase (EEP)	+	+	+	+	-	-	-	-	-	-
BIFPSEUDO_03249	abi-like protein	+	+	+	+	+	-	+	+	+	+
BIFPSEUDO_03251	lysyl-tRNA synthetase	+	+	-	+	+	-	+	+	+	+
BIFPSEUDO_03254	UDP-GalNAc:betaGlcNAc	+	-	-	+	+	-	+	-	+	-
BIFPSEUDO_03256	Nitroreductase	+	-	-	+	-	-	-	-	-	-
BIFPSEUDO_03257	Polysaccharide pyruvyl transferase	+	+	-	+	-	-	-	-	-	-
BIFPSEUDO_03258	putative maltose O-acetyltransferase	+	-	-	+	-	-	-	-	-	-
BIFPSEUDO_03259	putative glycosyltransferase	+	-	-	+	-	-	-	-	-	-
BIFPSEUDO_03260	MatE	+	-	-	+	-	-	-	-	-	-
BIFPSEUDO_03261	glycosyltransferase	+	+	-	+	-	-	-	-	-	-
BIFPSEUDO_03262	spore coat protein	+	+	-	+	+	+	+	+	+	+
BIFPSEUDO_03264	WblC	+	+	-	-	-	-	-	-	-	-
BIFPSEUDO_03265	Cell envelope biogenesis	+	+	-	-	+	+	+	+	+	+
BIFPSEUDO_03267	Capsular polysaccharide synthesis protein	+	-	-	-	-	-	-	-	-	-
BIFPSEUDO_03268	ligase RfaL	+	-	-	-	-	-	-	+	-	-
BIFPSEUDO_03271	Polysaccharide pyruvyl transferase	+	-	-	-	+	-	-	-	-	-
BIFPSEUDO_03274	Membrane protein	+	-	-	-	-	-	-	-	-	-
BIFPSEUDO_03276	putative transposase	+	-	+	-	+	+	+	+	+	+
BIFPSEUDO_03278	hyp prot	+	-	+	-	+	+	+	+	+	+
BIFPSEUDO_03282	putative transcriptional regulator	+	-	-	-	+	-	-	-	-	-
BIFPSEUDO_03283	hyp prot BIFADO_01854	+	-	+	-	-	+	+	+	+	+
BIFPSEUDO_03285	hyp prot	+	-	+	+	-	+	+	+	+	+

BIFPSEUDO_03286	hyp prot BIFCAT_01216	+	-	+	-	-	-	-	-	-	-
BIFPSEUDO_03289	Fic/DOC family	+	-	-	-	-	+	+	+	+	+
BIFPSEUDO_03290	hypothetical protein BIFCAT_01189	+	-	+	-	+	+	+	+	+	+
BIFPSEUDO_03291	hypothetical protein	+	-	+	-	-	+	+	+	+	+
BIFPSEUDO_03292	hypothetical protein BIFCAT_01188	+	-	-	+	+	+	+	+	+	+
BIFPSEUDO_03294	glycosyl hydrolase	+	-	+	+	-	-	-	-	-	-
BIFPSEUDO_03295	carbohydrate ABC transporter membrane protein	+	-	+	+	-	-	-	-	-	-
BIFPSEUDO_03296	sugar ABC transporter permease	+	-	+	+	-	-	-	-	-	-
BIFPSEUDO_03297	family 1 extracellular solute-binding protein	+	-	+	+	-	-	-	-	-	-
BIFPSEUDO_03298	regulatory protein LacI	+	-	+	+	-	-	-	-	-	-
BIFPSEUDO_03303	Sugar-binding protein of ABC transporter	+	+	+	+	-	-	-	-	-	-
BIFPSEUDO_03309	transcriptional regulator	+	+	+	+	+	-	+	-	+	+
BIFPSEUDO_03310	predicted protein	+	+	+	+	+	-	+	+	+	+
BIFPSEUDO_03311	Alpha amylase	+	+	+	+	+	-	+	+	+	+
BIFPSEUDO_03313	glycosyltransferase	+	+	+	+	+	-	+	-	+	-
BIFPSEUDO_03321	alpha-amylase	+	+	+	+	+	-	+	+	+	+
BIFPSEUDO_03331	glycine cleavage system protein H	+	-	+	+	+	+	+	+	+	+
BIFPSEUDO_03343	hypothetical protein	+	+	+	+	+	+	+	+	+	-
BIFPSEUDO_03348	hypothetical protein BIFDEN_01361	+	+	+	+	+	-	+	-	+	+
BIFPSEUDO_03359	FHA domain-containing protein	+	+	+	+	+	-	+	-	+	+
BIFPSEUDO_03379	hypothetical protein	+	+	-	+	-	-	+	+	+	+
BIFPSEUDO_03380	hypothetical protein	+	+	+	+	-	-	+	+	+	+
BIFPSEUDO_03381	hypothetical protein	+	+	-	+	+	-	-	-	-	-
BIFPSEUDO_03382	hyp prot BIFDEN_01597	+	+	+	+	+	+	+	+	+	-
BIFPSEUDO_03383	hypothetical protein	+	+	-	+	-	-	-	-	-	-
BIFPSEUDO_03388	hyp prot BIFDEN_01603	+	+	-	+	-	-	-	-	-	-
BIFPSEUDO_03390	hyp prot BIFDEN_01604	+	+	-	+	+	+	-	+	-	+
BIFPSEUDO_03391	transRDD family protein	+	+	-	+	-	-	+	-	+	-
BIFPSEUDO_03407	hypothetical protein BIFCAT_00302	+	-	-	+	+	+	+	+	+	+
BIFPSEUDO_03409	type I restriction-modification system	+	-	-	+	+	+	+	+	+	+
BIFPSEUDO_03411	type I restriction modification system	+	-	-	+	+	+	+	+	+	+
BIFPSEUDO_03421	hypothetical protein BIFCAT_01101	+	-	-	-	+	+	+	+	+	+
BIFPSEUDO_03427	short-chain dehydrogenase/reductase	+	+	+	+	+	-	+	-	+	+
BIFPSEUDO_03434	tyrosyl-tRNA(Tyr) deacylase	+	-	-	+	-	-	-	-	-	-
BIFPSEUDO_03435	hypothetical protein BIFCAT_01080	+	+	+	+	+	-	+	-	+	+
BIFPSEUDO_03436	anchored-chain amino acid transport	+	+	+	+	+	-	+	-	+	+
BIFPSEUDO_03443	ptidyl-tRNA hydrolase	+	+	+	+	+	+	+	+	+	-
BIFPSEUDO_03468	hypothetical protein BIFCAT_01048	+	+	+	+	+	+	+	-	+	+
BIFPSEUDO_03473	hypothetical protein BIFCAT_01043	+	+	+	+	+	-	+	+	+	-
BIFPSEUDO_03476	methylenetetrahydrofolate dehydrogenase	+	+	+	+	-	+	-	+	-	-
BIFPSEUDO_03485	tyryl-CoA dehydrogenase	+	+	+	+	+	-	+	+	+	+

BIFPSEUDO_03486	hypothetical protein BIFCAT_01029	+	+	+	+	+	+	+	+	-	+
BIFPSEUDO_03503	tetracycline resistance protein TetW	+	-	-	-	+	-	-	-	-	-
BIFPSEUDO_03504	mobilization protein	+	+	-	-	+	+	+	+	-	+
BIFPSEUDO_03505	hypothetical protein	+	-	-	-	-	+	-	+	-	-
BIFPSEUDO_03506	hyp prot	+	-	-	-	-	-	-	-	-	-
BIFPSEUDO_03507	phage-related integrases	+	-	+	-	+	+	+	+	+	+
BIFPSEUDO_03525	phosphoglycerate mutase family	+	+	+	+	+	-	+	-	-	-
BIFPSEUDO_03543	NifS-like aminotranferase	+	+	+	+	+	-	+	+	+	+
BIFPSEUDO_03551	diadenosine tetraphosphate	+	+	+	+	+	+	+	-	-	+
BIFPSEUDO_03554	putative transport protein	+	+	+	+	+	+	+	-	+	+
BIFPSEUDO_03577	hypothetical protein	+	+	+	+	+	+	+	-	+	+
BIFPSEUDO_03589	3-oxoacyl-[acyl-carrier protein] reductase	+	+	+	+	+	-	+	-	-	+
BIFPSEUDO_03592	carbonate dehydratase	+	+	+	+	+	-	+	-	+	+
BIFPSEUDO_03599	putative protein-L-isoaspartate methyltransferase	+	+	+	+	+	+	+	-	+	+
BIFPSEUDO_03634	glutamate-aspartate symport protein	+	+	+	+	+	-	-	-	+	-
BIFPSEUDO_03640	hypothetical protein	+	+	+	-	+	-	-	-	+	-
BIFPSEUDO_03661	hypothetical protein	+	-	+	-	+	+	+	+	+	+
BIFPSEUDO_03673	membrane spanning protein TolA	+	+	+	+	+	+	+	+	-	+
BIFPSEUDO_03674	membrane spanning protein TolA	+	+	+	+	+	-	+	-	+	+
BIFPSEUDO_03679	IMP dehydrogenase 1/CBS domain protein	+	+	+	+	+	+	+	+	-	+
BIFPSEUDO_03681	probable pyrazinamidase/nicotinamidase	+	+	+	+	+	-	+	+	+	+
BIFPSEUDO_03685	hypothetical protein BIFCAT_00771	+	+	+	+	-	+	+	+	-	-
BIFPSEUDO_03686	glycine betaine/L-proline ABC transporter	+	+	+	+	+	-	+	+	+	+
BIFPSEUDO_03697	Preprotein translocase SecE subunit	+	+	+	+	+	+	+	-	+	+
BIFPSEUDO_03698	Cof-like hydrolase	+	+	+	+	+	+	+	-	+	+
BIFPSEUDO_03700	hypothetical protein	+	+	+	+	+	-	+	-	+	+
BIFPSEUDO_03701	Nicotinamide mononucleotide transporter	+	+	+	+	-	-	-	+	-	-
BIFPSEUDO_03703	transcriptional regulator	+	+	+	+	+	-	+	-	+	+
BIFPSEUDO_03720	adenylate/guanylate cyclase	+	+	+	+	-	+	+	+	-	+
BIFPSEUDO_03721	MerR superfamily	+	+	+	+	-	-	-	-	-	-
BIFPSEUDO_03722	hyp prot BIFCAT_00746	+	+	+	+	-	-	-	-	-	-
BIFPSEUDO_03723	haloacid dehalogenase-like family	+	+	+	+	+	-	-	-	-	+
BIFPSEUDO_03731	hyp prot BIFCAT_00730	+	+	+	+	+	-	+	-	+	+
BIFPSEUDO_03737	succinyl-CoA synthetase alpha chain	+	+	+	+	+	+	+	-	-	-
BIFPSEUDO_03745	putative phosphatidylinositol synthase	+	+	+	+	+	+	+	-	+	+
BIFPSEUDO_03750	CDP-diacylglycerol--glycerol-3-phosphate 3-phosphatidyl-transferase	+	+	+	+	+	-	-	-	-	-
BIFPSEUDO_03751	ATP phosphoribosyltransferase	+	+	+	+	+	-	+	-	-	+
BIFPSEUDO_03774	hyp prot BIFCAT_00688	+	+	+	+	+	+	+	-	+	+
BIFPSEUDO_03794	acetamidase/formamidase family protein	+	+	+	+	+	-	-	+	+	+
BIFPSEUDO_03800	phosphatase	+	+	+	+	+	-	+	-	-	-
BIFPSEUDO_03809	tRNA synthetase RNA-binding domain	+	+	+	+	+	+	+	-	+	+

BIFPSEUDO_03810	hyp prot BIFADO_01947	+	+	+	+	-	-	+	+	+	+
BIFPSEUDO_03812	Metal dependent phosphohydrolases	+	+	+	+	-	-	-	-	-	-
BIFPSEUDO_03821	argC N-acetyl-gamma-glutamyl-phosphate reductase	+	+	+	+	+	-	+	+	+	+
BIFPSEUDO_03826	hypothetical protein	+	-	-	+	-	-	-	-	-	-
BIFPSEUDO_03830	conserved hyp prot	+	+	+	+	+	-	-	+	+	+
BIFPSEUDO_03832	hypothetical protein	+	+	+	+	+	+	+	-	+	+
BIFPSEUDO_03835	putative DNA methyltransferase	+	+	+	+	+	+	+	+	-	-
BIFPSEUDO_03843	Sodium:dicarboxylate symporter family	+	-	+	+	+	+	+	+	+	+
BIFPSEUDO_03844	putative ABC transport protein	+	-	+	-	+	+	+	+	+	+
BIFPSEUDO_03845	ABC-type cobalt transport system	+	-	+	+	+	+	+	+	+	+
BIFPSEUDO_03877	ATP-dependent DNA helicase	+	-	+	+	+	+	+	+	+	+
BIFPSEUDO_03880	hypothetical protein BIFANG_02761	+	+	-	-	+	-	+	-	-	-
BIFPSEUDO_03883	putative DNA helicase II	+	-	-	-	+	+	+	+	+	+
BIFPSEUDO_03884	hypothetical protein BLJ_0932	+	+	-	+	+	+	-	-	-	-
BIFPSEUDO_03891	two-component sensor histidine kinase	+	+	+	+	+	-	+	-	-	-
BIFPSEUDO_03894	putative Ser/Thr protein kinase	+	+	-	+	+	-	+	+	-	+
BIFPSEUDO_03896	ABC-type multidrug transport system,	+	+	-	+	-	-	-	-	-	-
BIFPSEUDO_03909	Metal-dependent amidase/aminoacylase/carboxypeptidase	+	+	-	+	+	+	+	+	+	+
BIFPSEUDO_03910	Cof-like hydrolase	+	-	+	+	+	+	+	+	+	+
BIFPSEUDO_03912	ABC metal ion transporter	+	+	-	+	+	+	+	+	+	+
BIFPSEUDO_03914	hyp prot BIFCAT_00567	+	-	+	+	+	+	+	+	+	+
BIFPSEUDO_03917	hyp prot BLJ_1149	+	-	+	+	+	+	+	+	+	+
BIFPSEUDO_03920	hypothetical protein	+	-	-	+	+	+	+	+	+	+
BIFPSEUDO_03923	conserved hyp prot	+	-	-	-	-	-	+	+	-	-
BIFPSEUDO_03925	filamentation induced by cAMP protein Fic	+	+	+	+	+	-	+	+	+	+
BIFPSEUDO_03926	hypothetical protein BLJ_1159	+	+	+	+	+	+	+	+	-	+
BIFPSEUDO_03928	hyp prot Blon_0981	+	-	-	+	-	-	-	-	+	+
BIFPSEUDO_03932	toxin-antitoxin system, antitoxin component, Xre family	+	+	+	+	+	-	+	-	-	-
BIFPSEUDO_03937	putative Gas vesicle protein	+	+	-	+	+	-	+	-	+	-
BIFPSEUDO_03940	conserved hyp prot	+	-	+	+	+	-	+	+	+	+
BIFPSEUDO_03955	transfer complex protein	+	-	-	+	-	-	-	+	+	-
BIFPSEUDO_03960	ATPase central domain-containing protein	+	-	+	+	+	+	+	+	+	+
BIFPSEUDO_03967	hypothetical protein	+	+	+	+	+	-	+	+	+	+
BIFPSEUDO_03988	ParB-like partition proteins	+	+	+	+	+	-	+	-	-	-
BIFPSEUDO_03991	hypothetical protein BIFCAT_00030	+	+	+	+	+	+	+	+	-	-
BIFPSEUDO_04002	DNA gyrase subunit B, novobiocin-sensitive	+	+	+	+	+	-	+	+	+	+
BIFPSEUDO_04010	metal-dependent hydrolase	+	+	+	+	-	+	+	-	+	+
BIFPSEUDO_04015	U ribosomal protein S8P	+	+	+	+	+	-	+	-	+	-
BIFPSEUDO_04029	hypothetical protein BIFCAT_00070	+	+	+	+	+	-	+	-	+	-
BIFPSEUDO_04031	Sortase D	+	+	+	+	-	+	+	+	-	-

BIFPSEUDO_04032	hypothetical protein	+	+	+	+	-	+	+	+	+	+
BIFPSEUDO_04035	serine/threonine-protein kinase	+	-	+	+	+	+	+	+	+	+
BIFPSEUDO_04043	sensor histidine kinase	+	+	+	+	+	-	+	-	+	-
BIFPSEUDO_04048	putative NADH-flavin reductase	+	+	-	+	-	+	-	+	+	+
BIFPSEUDO_04053	E1-E2_ATPase	+	+	-	+	+	-	-	-	+	-
BIFPSEUDO_04055	aromatic amino acid transport protein	+	-	+	-	-	+	+	+	+	+
BIFPSEUDO_04061	Xre-type transcriptional regulator	+	+	-	+	-	-	-	-	-	-
BIFPSEUDO_04062	glycosyl transferase	+	+	+	+	-	+	+	+	+	+
BIFPSEUDO_04075	hypothetical membrane-spanning protein	+	+	+	+	+	-	-	-	-	-
BIFPSEUDO_04077	BC-type polysaccharide transport system	+	+	+	+	+	+	+	+	-	-
BIFPSEUDO_04078	ABC-type polysaccharide transport system	+	+	+	+	+	-	+	+	+	-
BIFPSEUDO_04079	sugar ABC uptake system, permease component""	+	+	+	+	+	-	-	-	-	-
BIFPSEUDO_04092	hypothetical protein	+	+	+	+	+	+	-	+	+	+
BIFPSEUDO_04093	hyp prot BAD_0085	+	+	+	+	+	+	+	-	-	-
BIFPSEUDO_04095	H(+)-transporting two-sector ATPase	+	+	+	+	-	-	-	-	-	-
BIFPSEUDO_04096	hyp prot BIFCAT_00124	+	+	+	+	+	-	+	+	+	+
BIFPSEUDO_04099	sortase		-	+	-	-	-	-	+	-	-
BIFPSEUDO_04100	fimbrial subunit	+	+	+	+	-	-	-	+	-	-
BIFPSEUDO_04101	hyp prot	+	+	+	+	+	-	+	-	-	-
BIFPSEUDO_04102	fimbrial subunit FimA	+	+	+	+	-	+	+	+	+	+
BIFPSEUDO_04104	hyp prot	+	+	+	+	-	-	-	-	-	-
BIFPSEUDO_04112	MarR-type transcriptional regulator	+	-	+	-	+	+	+	+	+	+
BIFPSEUDO_04113	ABC-type multidrug transport system	+	-	+	-	+	+	+	+	+	+
BIFPSEUDO_04115	hyp prot BIFCAT_00139	+	-	+	-	+	+	+	+	+	+
BIFPSEUDO_04133	hyp prot BIFANG_02039	+	+	+	+	+	-	-	-	-	-
BIFPSEUDO_04134	hypothetical protein BIFPSEUDO_04407	+	+	+	-	-	-	-	-	-	-
BIFPSEUDO_04135	major facilitator superfamily MFS_1	+	+	+	-	-	-	-	-	-	-
BIFPSEUDO_04141	Predicted ATPase	+	+	+	+	-	-	-	-	-	-
BIFPSEUDO_04144	glucose-1-phosphate thymidyltransferase	+	+	-	-	-	-	-	-	-	-
BIFPSEUDO_04145	RmlD substrate binding domain	+	+	+	-	+	+	+	+	+	+
BIFPSEUDO_04146	Ramnose biosynthesis dTDP-glucose 4,6-dehydratase	+	+	-	-	-	-	-	-	-	-
BIFPSEUDO_04149	cell wall biogenesis glycosyltransferase	+	-	-	-	+	-	+	-	-	-
BIFPSEUDO_04150	Predicted acyltransferases	+	+	-	-	-	-	-	-	-	-
BIFPSEUDO_04151	Rhamnan synthesis protein F	+	+	-	-	-	-	-	-	-	-
BIFPSEUDO_04152	C superfamily ATP binding cassette transporter ABC protein	+	+	-	-	-	-	-	-	-	-
BIFPSEUDO_04153	ABC-2 type transporter	+	+	-	-	-	-	-	-	-	-
BIFPSEUDO_04155	phosphoglycerol transferase	+	+	+	-	+	-	+	-	+	+
BIFPSEUDO_04160	Major Facilitator Superfamily	+	+	+	+	+	-	+	+	+	+
BIFPSEUDO_04167	putative dihydrolipoamide succinyltransferase	+	+	+	-	+	+	+	+	+	+
BIFPSEUDO_04172	Major intrinsic protein (MIP) superfamily	+	+	+	+	+	-	+	+	+	+

BIFPSEUDO_04173	hypothetical protein	+	+	+	+	+	-	-	-	-	-
BIFPSEUDO_04175	hypothetical protein BIFADO_01725	+	+	+	+	-	-	-	-	-	-
BIFPSEUDO_04176	glutamyl-tRNA synthetase	+	+	+	+	+	-	+	+	+	+
BIFPSEUDO_04187	uridine 5'-monophosphate synthase	+	+	+	-	+	+	+	+	+	+
BIFPSEUDO_04195	hypothetical protein BIFADO_01699	+	+	+	+	+	+	+	-	+	+
BIFPSEUDO_04201	hypothetical protein BAD_1451	+	+	+	+	-	-	-	-	-	-
BIFPSEUDO_04225	ATP synthase	+	+	+	+	+	+	+	-	+	+
BIFPSEUDO_04253	hypothetical protein	+	+	+	+	+	+	+	-	-	-
BIFPSEUDO_04256	ABC-type sugar transport system, periplasmic component	+	+	+	-	+	+	+	+	+	+
BIFPSEUDO_04259	ABC-type sugar transport system, permease component	+	+	+	-	+	+	+	+	+	+
BIFPSEUDO_04266	hypothetical protein	+	-	-	-	+	+	+	+	+	+
BIFPSEUDO_04271	Glutamine amidotransferases class-II	+	+	+	+	+	+	+	+	-	+
BIFPSEUDO_04280	hypothetical protein BIFDEN_00979	+	+	+	+	-	-	-	-	-	-
BIFPSEUDO_04289	binding-protein-dependent transport systems	+	+	+	-	+	+	+	+	+	-
BIFPSEUDO_04290	binding-protein-dependent transport systems	+	+	+	-	+	-	+	+	+	-
BIFPSEUDO_04291	extracellular solute-binding protein, family 1	+	+	+	+	+	-	+	+	+	+
BIFPSEUDO_04292	hypothetical protein	+	+	-	-	+	-	+	-	+	+
BIFPSEUDO_04293	regulatory protein, LacI	+	+	-	-	+	-	-	+	-	-
BIFPSEUDO_04295	putative glycosyl hydrolase family protein	+	+	-	+	+	-	-	-	-	-
BIFPSEUDO_04296	diguanylate cyclase/phosphodiesterase	+	+	-	+	+	-	-	-	-	-
BIFPSEUDO_04300	glucosamine-6-phosphate deaminase	+	+	+	+	+	-	-	+	+	+
BIFPSEUDO_04305	permease of ABC transporter for sugars	+	+	-	+	+	-	+	-	-	-
BIFPSEUDO_04306	family 1 extracellular solute-binding protein	+	+	-	+	-	-	-	-	-	-
BIFPSEUDO_04309	putative sugar transporter	+	+	+	+	+	-	+	-	+	+
BIFPSEUDO_04317	hypothetical protein BIFCAT_01448	+	+	+	+	+	-	+	-	-	+
BIFPSEUDO_04326	hypothetical protein BIFDEN_00901	+	+	+	+	-	-	-	-	-	-
BIFPSEUDO_04334	kaline phosphatase	+	+	+	+	+	-	-	-	-	-
BIFPSEUDO_04336	sortase	+	+	+	+	-	-	-	-	-	-
BIFPSEUDO_04337	cell wall surface anchor family protein	+	+	+	+	-	-	-	-	-	-
BIFPSEUDO_04338	putative surface-anchored fimbrial subunit	+	+	-	-	-	-	-	-	+	+
BIFPSEUDO_04343	putative ABC transport system membrane protein	+	+	+	+	-	-	-	-	-	-
BIFPSEUDO_04348	ABC-type polysaccharide transport system	+	+	+	+	+	-	+	-	+	+
BIFPSEUDO_04354	hypothetical protein	+	+	+	+	-	-	-	-	-	-
BIFPSEUDO_04356	hyp prot BIFDEN_00870	+	+	+	+	+	-	+	-	+	-
BIFPSEUDO_04357	Permease protein of ABC transporter	+	+	+	+	+	-	+	-	+	+
BIFPSEUDO_04358	ABC transporter permease	+	+	+	+	+	-	+	+	+	-
BIFPSEUDO_04362	LysR-type transcriptional regulators	+	+	+	+	+	+	+	-	+	+
BIFPSEUDO_04363	probable alpha-1,4-glucosidase	+	+	+	+	+	+	+	+	-	+
BIFPSEUDO_04364	ABC transporter solute-binding protein	+	+	+	+	+	-	+	-	+	-
BIFPSEUDO_04365	probable phosphoglycerate mutase protein	+	+	+	+	+	-	+	-	+	+

BIFPSEUDO_04367	hypothetical protein	+	+	+	+	-	-	-	-	-	-
BIFPSEUDO_04378	hypothetical protein BIFDEN_02462	+	+	+	+	+	+	+	-	+	+
BIFPSEUDO_04379	beta-N-acetylglucosaminidase	+	+	+	+	+	-	+	-	+	+
BIFPSEUDO_04380	UspA domain protein	+	+	+	+	+	-	-	-	-	+
BIFPSEUDO_04381	ATP-dependent Clp protease ATP-binding subunit ClpC	+	+	+	+	+	-	+	-	-	+
BIFPSEUDO_04384	The Major Facilitator Superfamily (MFS)	+	+	-	+	+	-	+	+	+	+
BIFPSEUDO_04391	ABC-type polar amino acid transport system, ATPase component	+	+	+	+	-	+	+	+	+	-
BIFPSEUDO_04415	hypothetical protein	+	+	+	+	+	-	+	+	+	+
BIFPSEUDO_04422	Endonuclease	+	-	+	+	+	+	+	+	+	+
BIFPSEUDO_04432	putative response regulator	+	-	+	+	+	+	+	+	+	+
BIFPSEUDO_04434	proline iminopeptidase	+	-	-	+	-	-	-	-	-	-
BIFPSEUDO_04453	Trimeric dUTP diphosphatases	+	+	+	+	+	+	+	-	+	+
BIFPSEUDO_04454	Predicted esterase	+	+	+	+	+	+	-	-	+	+
BIFPSEUDO_04457	tRNA-specific adenosine deaminase	+	+	+	+	+	-	+	-	-	-
BIFPSEUDO_04460	Transcriptional regulator/sugar kinase	+	+	-	-	+	+	-	+	-	+
BIFPSEUDO_04461	ABC-type sugar transport system, periplasmic component	+	+	-	-	+	+	-	-	-	+
BIFPSEUDO_04462	ABC-type polysaccharide transport system	+	+	-	+	+	+	-	+	-	+
BIFPSEUDO_04463	ABC-type sugar transport system, permease component	+	+	-	-	+	+	+	-	+	+
BIFPSEUDO_04465	catabolic threonine dehydratase	+	+	+	+	-	+	-	-	-	-
BIFPSEUDO_04467	hypothetical protein	+	-	-	-	-	+	-	+	+	+
BIFPSEUDO_04468	Esterases and lipases	+	+	+	+	-	-	-	-	-	-