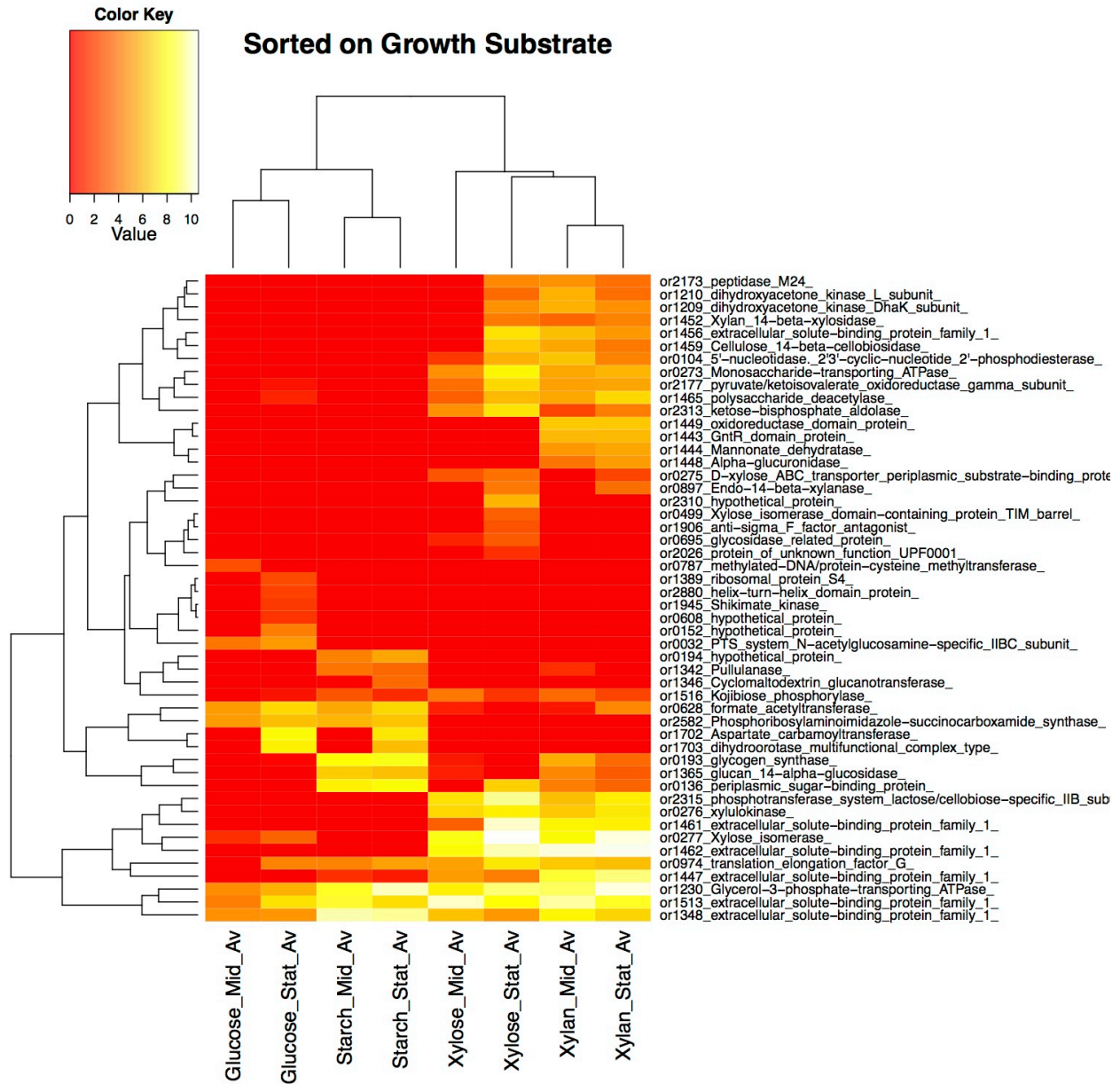


Supplemental Figure 1. Hierarchical clustered heat map of the 50 most significant normalized LC-MS/MS protein detection numbers in the supernatant fraction as analyzed by ANOVA. ANOVAs performed to determine differences between growth substrates.



Supplemental Table S1. Proteins predicted to be secreted via the Sec pathway, excluding those with additional transmembrane domains. TM refers to transmembrane domains. Green highlight represents those proteins predicted to be active on carbohydrates.

GeneID	Product	TM Domains	Sec Tag
Tsac_0008	Spore germination protein-like Gmad2	0	Y
Tsac_0042	basic membrane lipoprotein	0	Y
Tsac_0050	FMN-binding domain protein	0	Y
Tsac_0087	ABC-type metal ion transporter, periplasmic subunit	0	Y
Tsac_0091	hypothetical protein	0	Y
Tsac_0115	phosphotransferase system lactose/cellobiose-specific IIB subunit	0	Y
Tsac_0167	extracellular solute-binding protein family 1	0	Y
Tsac_0203	extracellular solute-binding protein family 1	0	Y
Tsac_0312	protein of unknown function DUF1779	0	Y
Tsac_0426	hypothetical protein	0	Y
Tsac_0561	FMN-binding domain protein	0	Y
Tsac_0691	glycoside hydrolase family 26	0	Y
Tsac_0692	extracellular solute-binding protein family 1	0	Y
Tsac_0716	hypothetical protein	0	Y
Tsac_0796	hypothetical protein	0	Y
Tsac_0822	SpoIID/LytB domain protein	0	Y
Tsac_0832	copper amine oxidase-like domain-containing protein	0	Y
Tsac_0881	parvulin-like peptidyl-prolyl isomerase	0	Y
Tsac_0886	hypothetical protein	0	Y
Tsac_0898	Sulphatase-modifying factor protein	0	Y
Tsac_0913	secretion protein HlyD family protein	0	Y
Tsac_1154	hypothetical protein	0	Y
Tsac_1165	extracellular solute-binding protein family 1	0	Y
Tsac_1166	glycoside hydrolase family 26	0	Y
Tsac_1191	delta-lactam-biosynthetic de-N-acetylase	0	Y
Tsac_1239	Peptidase M23	0	Y
Tsac_1251	ABC-type transporter, periplasmic subunit family 3	0	Y
Tsac_1273	hypothetical protein	0	Y
Tsac_1303	ApbE family lipoprotein	0	Y
Tsac_1308	NLP/P60 protein	0	Y
Tsac_1365	glucan 1,4-alpha-glucosidase	0	Y
Tsac_1461	extracellular solute-binding protein family 1	0	Y
Tsac_1462	extracellular solute-binding protein family 1	0	Y
Tsac_1466	copper amine oxidase-like domain-containing protein	0	Y
Tsac_1504	hypothetical protein	0	Y
Tsac_1513	extracellular solute-binding protein family 1	0	Y
Tsac_1583	phosphate binding protein	0	Y
Tsac_1624	cell wall hydrolase SleB	0	Y
Tsac_1892	peptidase S11 D-alanyl-D-alanine carboxypeptidase 1	0	Y
Tsac_2088	extracellular solute-binding protein family 1	0	Y
Tsac_2096	hypothetical protein	0	Y
Tsac_2258	extracellular solute-binding protein family 1	0	Y
Tsac_2325	extracellular solute-binding protein family 1	0	Y

Tsac_2369	hypothetical protein	0	Y
Tsac_2374	Peptidase M23	0	Y
Tsac_2514	hypothetical protein	0	Y
Tsac_2515	hypothetical protein	0	Y
Tsac_2516	hypothetical protein	0	Y
Tsac_2571	lipoprotein, YaeC family	0	Y
Tsac_2601	ABC transporter substrate binding protein	0	Y
Tsac_2602	Extracellular ligand-binding receptor	0	Y
Tsac_0005	hypothetical protein	1	Y
Tsac_0006	hypothetical protein	1	Y
Tsac_0017	hypothetical protein	1	Y
Tsac_0049	hypothetical protein	1	Y
Tsac_0068	ABC-type transporter, periplasmic subunit	1	Y
Tsac_0095	hypothetical protein	1	Y
Tsac_0104	5'-Nucleotidase domain-containing protein	1	Y
Tsac_0136	periplasmic sugar-binding protein	1	Y
Tsac_0146	Ig domain protein	1	Y
Tsac_0147	glycosyl hydrolase 53 domain protein	1	Y
Tsac_0151	extracellular solute-binding protein family 1	1	Y
Tsac_0301	S-layer domain-containing protein	1	Y
Tsac_0302	S-layer domain-containing protein	1	Y
Tsac_0303	Fibronectin type III domain protein	1	Y
Tsac_0330	cell wall hydrolase/autolysin	1	Y
Tsac_0334	efflux transporter, RND family, MFP subunit	1	Y
Tsac_0342	extracellular solute-binding protein family 1	1	Y
Tsac_0344	S-layer domain-containing protein	1	Y
Tsac_0361	S-layer domain-containing protein	1	Y
Tsac_0362	hypothetical protein	1	Y
Tsac_0373	carboxyl-terminal protease	1	Y
Tsac_0378	hypothetical protein	1	Y
Tsac_0441	hypothetical protein	1	Y
Tsac_0450	metallophosphoesterase	1	Y
Tsac_0497	extracellular solute-binding protein family 1	1	Y
Tsac_0579	cell envelope-related transcriptional attenuator	1	Y
Tsac_0655	hypothetical protein	1	Y
Tsac_0715	copper amine oxidase-like domain-containing protein	1	Y
Tsac_0718	hypothetical protein	1	Y
Tsac_0723	hypothetical protein	1	Y
Tsac_0760	extracellular solute-binding protein family 1	1	Y
Tsac_0798	hypothetical protein	1	Y
Tsac_0799	hypothetical protein	1	Y
Tsac_0800	hypothetical protein	1	Y
Tsac_0827	Septum formation initiator	1	Y
Tsac_0878	S-layer domain-containing protein	1	Y
Tsac_0894	hypothetical protein	1	Y
Tsac_0897	glycoside hydrolase family 11	1	Y
Tsac_1143	hypothetical protein	1	Y
Tsac_1157	extracellular solute-binding protein family 1	1	Y
Tsac_1279	EppA_BapA family protein	1	Y
Tsac_1324	hypothetical protein	1	Y
Tsac_1342	alpha amylase catalytic region	1	Y
Tsac_1343	extracellular solute-binding protein family 1	1	Y
Tsac_1346	alpha amylase catalytic region	1	Y
Tsac_1348	extracellular solute-binding protein family 1	1	Y
Tsac_1409	flavodoxin	1	Y
Tsac_1427	Propeptide PepSY amd peptidase M4	1	Y
Tsac_1447	extracellular solute-binding protein family 1	1	Y

Tsac_1456	extracellular solute-binding protein family 1	1	Y
Tsac_1459	glycoside hydrolase family 10	1	Y
Tsac_1509	extracellular solute-binding protein family 1	1	Y
Tsac_1525	hypothetical protein	1	Y
Tsac_1536	glycoside hydrolase family 18	1	Y
Tsac_1557	sporulation lipoprotein, YhcN/YlaJ family	1	Y
Tsac_1572	protein of unknown function DUF881	1	Y
Tsac_1644	ABC-type transporter, periplasmic subunit	1	Y
Tsac_1684	SpoIID/LytB domain protein	1	Y
Tsac_1907	peptidase S11 D-alanyl-D-alanine carboxypeptidase 1	1	Y
Tsac_1931	stage III sporulation protein AH	1	Y
Tsac_2035	hypothetical protein	1	Y
Tsac_2066	cell wall hydrolase/autolysin	1	Y
Tsac_2139	NLP/P60 protein	1	Y
Tsac_2143	Lytic transglycosylase catalytic	1	Y
Tsac_2153	Propeptide PepSY and peptidase M4	1	Y
Tsac_2187	Sporulation uncharacterized protein YkwD	1	Y
Tsac_2231	Extracellular ligand-binding receptor	1	Y
Tsac_2243	ABC transporter, periplasmic molybdate-binding protein	1	Y
Tsac_2296	extracellular solute-binding protein family 1	1	Y
Tsac_2304	extracellular solute-binding protein family 1	1	Y
Tsac_2356	hypothetical protein	1	Y
Tsac_2372	efflux transporter, RND family, MFP subunit	1	Y
Tsac_2378	Peptidoglycan-binding domain 1 protein	1	Y
Tsac_2389	copper amine oxidase-like domain-containing protein	1	Y
Tsac_2460	hypothetical protein	1	Y
Tsac_2467	glycoside hydrolase family 18	1	Y
Tsac_2468	beta-lactamase	1	Y
Tsac_2552	cell wall hydrolase/autolysin	1	Y
Tsac_2557	ABC-type transporter, periplasmic subunit	1	Y
Tsac_2655	ABC-type transporter, periplasmic subunit family 3	1	Y

Supplemental Table S2. Those proteins that containing transmembrane domains and are not freely secreted. A number of these proteins have predicted secretory tags, however, these also have more than 1 transmembrane domain suggesting that they are ultimately membrane localized.

GeneID	Product	TM Domains	Sec Tag
Tsac_0013	hypothetical protein	1	N
Tsac_0016	hypothetical protein	1	N
Tsac_0025	Capsule synthesis protein, CapA	1	N
Tsac_0043	Formiminotransferase-cyclodeaminase	1	N
Tsac_0072	hypothetical protein	1	N
Tsac_0075	hypothetical protein	1	N
Tsac_0082	hypothetical protein	1	N
Tsac_0099	hypothetical protein	1	N
Tsac_0123	hypothetical protein	1	N
Tsac_0126	penicillin-binding protein, 1A family	1	N
Tsac_0137	periplasmic binding protein/LacI transcriptional regulator	1	N
Tsac_0140	LacI family transcriptional regulator	1	N
Tsac_0142	hypothetical protein	1	N
Tsac_0179	L-lactate dehydrogenase	1	N
Tsac_0183	hypothetical protein	1	N
Tsac_0190	protein of unknown function DUF881	1	N
Tsac_0191	cellulose biosynthesis protein	1	N
Tsac_0197	flavin reductase domain protein FMN-binding protein	1	N
Tsac_0198	band 7 protein	1	N
Tsac_0230	67 kDa myosin-cross-reactive antigen family protein	1	N
Tsac_0231	transcriptional regulator, TetR family	1	N
Tsac_0258	hypothetical protein	1	N
Tsac_0283	hypothetical protein	1	N
Tsac_0284	hypothetical protein	1	N
Tsac_0290	hypothetical protein	1	N
Tsac_0299	Peptidase M23	1	N
Tsac_0300	stage II sporulation protein D	1	N
Tsac_0305	hypothetical protein	1	N
Tsac_0331	thiamine biosynthesis Thi4 protein	1	N
Tsac_0338	glycoside hydrolase family 5	1	N
Tsac_0363	polysaccharide deacetylase	1	N
Tsac_0389	copper amine oxidase-like domain-containing protein	1	N
Tsac_0408	hypothetical protein	1	N
Tsac_0417	hypothetical protein	1	N
Tsac_0419	aldo/keto reductase	1	N
Tsac_0424	hypothetical protein	1	N
Tsac_0425	hypothetical protein	1	N
Tsac_0437	peptidase S1 and S6 chymotrypsin/Hap	1	N
Tsac_0439	Protein of unknown function YychH	1	N
Tsac_0440	YychH family protein	1	N
Tsac_0444	hypothetical protein	1	N
Tsac_0445	Peptidase M23	1	N
Tsac_0448	Peptidase M1 membrane alanine aminopeptidase	1	N
Tsac_0469	hypothetical protein	1	N
Tsac_0481	hypothetical protein	1	N
Tsac_0482	hypothetical protein	1	N
Tsac_0490	hypothetical protein	1	N
Tsac_0493	FAD dependent oxidoreductase	1	N
Tsac_0503	peptidase S1 and S6 chymotrypsin/Hap	1	N

Tsac_0508	hypothetical protein	1	N
Tsac_0525	putative phosphoesterase	1	N
Tsac_0538	hypothetical protein	1	N
Tsac_0577	signal peptidase I	1	N
Tsac_0593	glycosyl transferase family 2	1	N
Tsac_0659	hypothetical protein	1	N
Tsac_0662	transposase IS4 family protein	1	N
Tsac_0666	G5 domain protein	1	N
Tsac_0672	hypothetical protein	1	N
Tsac_0673	AAA ATPase central domain protein	1	N
Tsac_0708	hypothetical protein	1	N
Tsac_0710	hypothetical protein	1	N
Tsac_0711	hypothetical protein	1	N
Tsac_0732	UDP-N-acetylmuramate--L-alanine ligase	1	N
Tsac_0739	peptidase S1 and S6 chymotrypsin/Hap	1	N
Tsac_0757	spore cortex-lytic enzyme	1	N
Tsac_0758	germination protein YpeB	1	N
Tsac_0786	hypothetical protein	1	N
Tsac_0793	hypothetical protein	1	N
Tsac_0794	hypothetical protein	1	N
Tsac_0868	Peptidase M23	1	N
Tsac_0879	hypothetical protein	1	N
Tsac_0882	SAF domain protein	1	N
Tsac_0888	hypothetical protein	1	N
Tsac_0892	hypothetical protein	1	N
Tsac_0893	hypothetical protein	1	N
Tsac_0908	phage holin, LL-H family	1	N
Tsac_0910	hypothetical protein	1	N
Tsac_0929	hypothetical protein	1	N
Tsac_0934	serine/threonine protein kinase	1	N
Tsac_0985	PGAP1 family protein	1	N
Tsac_0991	cysteinyl-tRNA synthetase	1	N
Tsac_0997	preprotein translocase, SecE subunit	1	N
Tsac_1056	N-acetylmuramoyl-L-alanine amidase CwID	1	N
Tsac_1062	YbbR family protein	1	N
Tsac_1067	Pyruvate/ketoisovalerate oxidoreductase	1	N
Tsac_1068	phospholipid/glycerol acyltransferase	1	N
Tsac_1089	peptidase U61 LD-carboxypeptidase A	1	N
Tsac_1113	hypothetical protein	1	N
Tsac_1129	Peptidoglycan-binding domain 1 protein	1	N
Tsac_1155	oxidoreductase domain protein	1	N
Tsac_1162	hypothetical protein	1	N
Tsac_1183	LmbE family protein	1	N
Tsac_1189	hypothetical protein	1	N
Tsac_1221	hypothetical protein	1	N
Tsac_1240	carboxyl-terminal protease	1	N
Tsac_1245	FHA domain containing protein	1	N
Tsac_1247	penicillin-binding protein transpeptidase	1	N
Tsac_1293	hypothetical protein	1	N
Tsac_1300	extracellular solute-binding protein family 1	1	N
Tsac_1302	polysaccharide deacetylase	1	N
Tsac_1304	protein of unknown function DUF1312	1	N
Tsac_1305	penicillin-binding protein transpeptidase	1	N
Tsac_1311	phenylacetic acid degradation-related protein	1	N
Tsac_1353	XRE family transcriptional regulator	1	N
Tsac_1421	ATP synthase subunit b	1	N
Tsac_1432	NMT1/THI5 like domain protein	1	N

Tsac_1518	polysaccharide deacetylase	1	N
Tsac_1538	Peptidase M23	1	N
Tsac_1543	hypothetical protein	1	N
Tsac_1562	cell division protein FtsL	1	N
Tsac_1563	stage V sporulation protein D	1	N
Tsac_1571	Polypeptide-transport-associated domain protein FtsQ-type	1	N
Tsac_1591	hypothetical protein	1	N
Tsac_1602	hypothetical protein	1	N
Tsac_1627	hypothetical protein	1	N
Tsac_1628	hypothetical protein	1	N
Tsac_1633	alkyl hydroperoxide reductase/ Thiol specific antioxidant/ Mal allergen	1	N
Tsac_1637	Protein of unknown function DUF2078, membrane	1	N
Tsac_1657	UBA/THIF-type NAD/FAD binding protein	1	N
Tsac_1668	hypothetical protein	1	N
Tsac_1679	hypothetical protein	1	N
Tsac_1687	preprotein translocase, YajC subunit	1	N
Tsac_1705	Dihydroorotate dehydrogenase, electron transfer subunit	1	N
Tsac_1726	serine/threonine protein kinase with PASTA sensor(s)	1	N
Tsac_1786	hypothetical protein	1	N
Tsac_1791	flagellar basal body-associated protein FlIL	1	N
Tsac_1795	hypothetical protein	1	N
Tsac_1835	polysaccharide deacetylase	1	N
Tsac_1878	hypothetical protein	1	N
Tsac_1903	hypothetical protein	1	N
Tsac_1915	hypothetical protein	1	N
Tsac_1916	Thiamin pyrophosphokinase catalytic domain-containing protein	1	N
Tsac_1918	stage IV sporulation protein B	1	N
Tsac_1932	stage III sporulation protein AG	1	N
Tsac_1946	hypothetical protein	1	N
Tsac_1947	Fimbrial assembly family protein	1	N
Tsac_1950	hypothetical protein	1	N
Tsac_1951	hypothetical protein	1	N
Tsac_1953	hypothetical protein	1	N
Tsac_1955	Tfp pilus assembly protein PilE-like protein	1	N
Tsac_1970	penicillin-binding protein transpeptidase	1	N
Tsac_1973	aminodeoxychorismate lyase	1	N
Tsac_1982	hypothetical protein	1	N
Tsac_1985	hypothetical protein	1	N
Tsac_2004	transketolase	1	N
Tsac_2006	hypothetical protein	1	N
Tsac_2007	hypothetical protein	1	N
Tsac_2027	Uncharacterized conserved protein UCP02828, putative membrane fusion protein	1	N
Tsac_2037	hypothetical protein	1	N
Tsac_2041	ubiquitin-associated- domain-containing protein	1	N
Tsac_2049	sporulation protein YqfD	1	N
Tsac_2063	hypothetical protein	1	N
Tsac_2067	stage II sporulation protein P	1	N
Tsac_2097	competence protein ComEA helix-hairpin-helix repeat protein	1	N
Tsac_2098	peptidase S11 D-alanyl-D-alanine carboxypeptidase 1	1	N
Tsac_2113	Peptidase M23	1	N
Tsac_2119	penicillin-binding protein 2	1	N
Tsac_2121	rod shape-determining protein MreC	1	N
Tsac_2136	Sporulation domain-containing protein	1	N
Tsac_2148	ErfK/YbiS/YcfS/YnhG family protein	1	N
Tsac_2165	hypothetical protein	1	N
Tsac_2177	pyruvate/ketoisovalerate oxidoreductase, gamma subunit	1	N

Tsac_2191	sporulation protein YunB	1	N
Tsac_2219	permease for cytosine/purines uracil thiamine allantoin	1	N
Tsac_2226	molybdenum ABC transporter, periplasmic molybdate-binding protein	1	N
Tsac_2253	hypothetical protein	1	N
Tsac_2292	fumarate reductase/succinate dehydrogenase flavoprotein domain protein	1	N
Tsac_2349	peptidase S1 and S6 chymotrypsin/Hap	1	N
Tsac_2375	LmbE family protein	1	N
Tsac_2387	Potassium-transporting ATPase C chain	1	N
Tsac_2391	penicillin-binding protein, 1A family	1	N
Tsac_2395	thiamine biosynthesis Thi4 protein	1	N
Tsac_2409	hypothetical protein	1	N
Tsac_2411	phage-like protein	1	N
Tsac_2430	hypothetical protein	1	N
Tsac_2464	LemA family protein	1	N
Tsac_2492	VanW family protein	1	N
Tsac_2513	hypothetical protein	1	N
Tsac_2520	hypothetical protein	1	N
Tsac_2525	hypothetical protein	1	N
Tsac_2591	hypothetical protein	1	N
Tsac_2592	hypothetical protein	1	N
Tsac_2593	hypothetical protein	1	N
Tsac_2594	hypothetical protein	1	N
Tsac_2596	hypothetical protein	1	N
Tsac_2607	HutP family protein	1	N
Tsac_2611	hypothetical protein	1	N
Tsac_2616	OmpA/MotB domain protein	1	N
Tsac_0009	integral membrane sensor signal transduction histidine kinase	2	N
Tsac_0015	protein of unknown function DUF421	2	N
Tsac_0034	methyl-accepting chemotaxis sensory transducer	2	N
Tsac_0090	hypothetical protein	2	N
Tsac_0093	hypothetical protein	2	N
Tsac_0097	hypothetical protein	2	N
Tsac_0101	hypothetical protein	2	N
Tsac_0139	integral membrane sensor signal transduction histidine kinase	2	N
Tsac_0199	protein of unknown function DUF107	2	N
Tsac_0206	putative signal transduction histidine kinase	2	N
Tsac_0238	hypothetical protein	2	N
Tsac_0288	methyl-accepting chemotaxis sensory transducer with Cache sensor	2	N
Tsac_0345	hypothetical protein	2	N
Tsac_0356	glycosyl transferase family 2	2	N
Tsac_0359	integral membrane sensor signal transduction histidine kinase	2	N
Tsac_0442	integral membrane sensor signal transduction histidine kinase	2	N
Tsac_0457	hypothetical protein	2	N
Tsac_0485	2-keto-3-deoxygluconate permease	2	N
Tsac_0487	2-keto-3-deoxygluconate permease	2	N
Tsac_0516	methyl-accepting chemotaxis sensory transducer	2	N
Tsac_0517	XapX domain protein	2	N
Tsac_0612	putative PAS/PAC sensor protein	2	N
Tsac_0622	hypothetical protein	2	N
Tsac_0751	hypothetical protein	2	N
Tsac_0862	TRAG family protein	2	N
Tsac_0863	hypothetical protein	2	N
Tsac_0865	hypothetical protein	2	N
Tsac_0875	hypothetical protein	2	N
Tsac_0880	hypothetical protein	2	N
Tsac_0937	ATP-dependent metalloprotease FtsH	2	N

Tsac_0951	hypothetical protein	2	N
Tsac_1058	protein of unknown function DUF58	2	N
Tsac_1061	Conserved hypothetical protein CHP00159	2	N
Tsac_1085	hypothetical protein	2	N
Tsac_1100	hypothetical protein	2	N
Tsac_1110	hypothetical protein	2	N
Tsac_1160	NHL repeat containing protein	2	N
Tsac_1218	ATP-dependent metalloprotease FtsH	2	N
Tsac_1222	ABC-type uncharacterized transport system	2	N
Tsac_1289	ATPase, P-type (transporting), HAD superfamily, subfamily IC	2	N
Tsac_1327	hypothetical protein	2	N
Tsac_1328	hypothetical protein	2	N
Tsac_1329	hypothetical protein	2	N
Tsac_1347	methyl-accepting chemotaxis sensory transducer with Cache sensor	2	N
Tsac_1378	integral membrane sensor signal transduction histidine kinase	2	N
Tsac_1420	ATP synthase subunit c	2	N
Tsac_1455	integral membrane sensor signal transduction histidine kinase	2	N
Tsac_1477	lipopolysaccharide biosynthesis protein	2	N
Tsac_1526	hypothetical protein	2	N
Tsac_1529	FAD-dependent pyridine nucleotide-disulfide oxidoreductase	2	N
Tsac_1582	multi-sensor signal transduction histidine kinase	2	N
Tsac_1584	methyl-accepting chemotaxis sensory transducer	2	N
Tsac_1622	integral membrane sensor signal transduction histidine kinase	2	N
Tsac_1626	hypothetical protein	2	N
Tsac_1636	integral membrane sensor signal transduction histidine kinase	2	N
Tsac_1683	hypothetical protein	2	N
Tsac_1693	2-polyprenylphenol 6-hydroxylase	2	N
Tsac_1721	protein of unknown function DUF116	2	N
Tsac_1730	hypothetical protein	2	N
Tsac_1781	flagellar M-ring protein FliF	2	N
Tsac_1797	flagellar biosynthetic protein FliQ	2	N
Tsac_1844	CDP-diacylglycerol/glycerol-3-phosphate 3-phosphatidyltransferase	2	N
Tsac_1933	stage III sporulation protein AF	2	N
Tsac_1936	stage III sporulation protein AC	2	N
Tsac_1937	stage III sporulation protein AB	2	N
Tsac_2002	Lipoprotein signal peptidase	2	N
Tsac_2024	protein of unknown function YGGT	2	N
Tsac_2125	hypothetical protein	2	N
Tsac_2146	putative transmembrane anti-sigma factor	2	N
Tsac_2149	hypothetical protein	2	N
Tsac_2204	protein of unknown function DUF445	2	N
Tsac_2214	hypothetical protein	2	N
Tsac_2263	integral membrane sensor signal transduction histidine kinase	2	N
Tsac_2354	integral membrane sensor signal transduction histidine kinase	2	N
Tsac_2384	multi-sensor signal transduction histidine kinase	2	N
Tsac_2399	protein of unknown function DUF1003	2	N
Tsac_2416	phage tail tape measure protein, TP901 family	2	N
Tsac_2479	preprotein translocase, SecG subunit	2	N
Tsac_2512	hypothetical protein	2	N
Tsac_2567	hypothetical protein	2	N
Tsac_2595	hypothetical protein	2	N
Tsac_2612	signal transduction histidine kinase regulating citrate/malate metabolism	2	N
Tsac_2635	Cobalt transport protein cbiN	2	N
Tsac_0085	phosphoesterase PA-phosphatase related protein	3	N
Tsac_0098	hypothetical protein	3	N
Tsac_0353	hypothetical protein	3	N
Tsac_0400	hypothetical protein	3	N

Tsac_0518	integral membrane sensor signal transduction histidine kinase	3	N
Tsac_0532	MscS Mechanosensitive ion channel	3	N
Tsac_0533	Colicin V production protein	3	N
Tsac_0620	pro-sigmaK processing inhibitor BofA	3	N
Tsac_0642	protein of unknown function DUF1634	3	N
Tsac_0654	hypothetical protein	3	N
Tsac_0714	hypothetical protein	3	N
Tsac_0738	integral membrane sensor signal transduction histidine kinase	3	N
Tsac_0785	hypothetical protein	3	N
Tsac_0790	phosphoesterase PA-phosphatase related protein	3	N
Tsac_0887	Type II secretion system F domain-containing protein	3	N
Tsac_0949	GerA spore germination protein	3	N
Tsac_1133	protein of unknown function DUF1294	3	N
Tsac_1152	protein of unknown function DUF421	3	N
Tsac_1197	glycosyl transferase family 2	3	N
Tsac_1540	hypothetical protein	3	N
Tsac_1605	pro-sigmaK processing inhibitor BofA	3	N
Tsac_1894	hypothetical protein	3	N
Tsac_1901	stage V sporulation protein AC	3	N
Tsac_1952	hypothetical protein	3	N
Tsac_1956	Type II secretion system F domain-containing protein	3	N
Tsac_2262	protein of unknown function DUF6 transmembrane	3	N
Tsac_2281	hypothetical protein	3	N
Tsac_2463	protein of unknown function DUF477	3	N
Tsac_2481	hypothetical protein	3	N
Tsac_2533	hypothetical protein	3	N
Tsac_2654	polar amino acid ABC transporter, inner membrane subunit	3	N
Tsac_0055	protein of unknown function DUF988	4	N
Tsac_0125	aminopeptidase-like protein	4	N
Tsac_0141	hypothetical protein	4	N
Tsac_0192	SNARE associated protein	4	N
Tsac_0323	protein of unknown function DUF1385	4	N
Tsac_0332	protein of unknown function DUF214	4	N
Tsac_0352	protein of unknown function DUF6 transmembrane	4	N
Tsac_0355	GtrA family protein	4	N
Tsac_0409	hypothetical protein	4	N
Tsac_0449	sporulation protein YtaF	4	N
Tsac_0459	branched-chain amino acid transport	4	N
Tsac_0514	protein of unknown function DUF1212	4	N
Tsac_0515	membrane spanning protein	4	N
Tsac_0549	membrane protein insertase, YidC/Oxa1 family	4	N
Tsac_0616	CrcB-like protein	4	N
Tsac_0617	CrcB-like protein	4	N
Tsac_0648	cation diffusion facilitator family transporter	4	N
Tsac_0651	nucleoside recognition domain protein	4	N
Tsac_0657	Abortive infection protein	4	N
Tsac_0658	hypothetical protein	4	N
Tsac_0709	hypothetical protein	4	N
Tsac_0713	hypothetical protein	4	N
Tsac_0719	hypothetical protein	4	N
Tsac_0741	hypothetical protein	4	N
Tsac_0752	GerA spore germination protein	4	N
Tsac_0826	spore cortex biosynthesis protein YabQ	4	N
Tsac_0864	hypothetical protein	4	N
Tsac_0890	protein of unknown function DUF6 transmembrane	4	N
Tsac_0983	PilT protein domain protein	4	N
Tsac_1109	hypothetical protein	4	N

Tsac_1171	band 7 protein	4	N
Tsac_1198	Glycerol-3-phosphate acyltransferase	4	N
Tsac_1217	integral membrane protein TIGR01906	4	N
Tsac_1238	protein of unknown function DUF214	4	N
Tsac_1268	hypothetical protein	4	N
Tsac_1291	heavy metal translocating P-type ATPase	4	N
Tsac_1457	ABC-type transporter, integral membrane subunit	4	N
Tsac_1506	hypothetical protein	4	N
Tsac_1573	protein of unknown function DUF1290	4	N
Tsac_1625	protein of unknown function UPF0016	4	N
Tsac_1675	protein of unknown function DUF81	4	N
Tsac_1676	protein of unknown function DUF81	4	N
Tsac_1688	hypothetical protein	4	N
Tsac_1722	peptidase membrane zinc metallopeptidase	4	N
Tsac_1799	flagellar biosynthetic protein FlhB	4	N
Tsac_1819	membrane-associated zinc metalloprotease	4	N
Tsac_1899	stage V sporulation protein AE	4	N
Tsac_1909	stage II sporulation protein M	4	N
Tsac_1924	hypothetical protein	4	N
Tsac_1935	stage III sporulation protein AD	4	N
Tsac_1983	hypothetical protein	4	N
Tsac_2032	hypothetical protein	4	N
Tsac_2033	hypothetical protein	4	N
Tsac_2069	membrane protein of unknown function	4	N
Tsac_2112	peptidase M50	4	N
Tsac_2151	phage shock protein C, PspC	4	N
Tsac_2319	protein of unknown function DUF6 transmembrane	4	N
Tsac_2370	protein of unknown function DUF214	4	N
Tsac_2381	SNARE associated protein	4	N
Tsac_2504	PTS system mannose/fructose/sorbose family IID component	4	N
Tsac_2598	hypothetical protein	4	N
Tsac_2617	MotA/TolQ/ExbB proton channel	4	N
Tsac_2649	hypothetical protein	4	N
Tsac_0051	protein of unknown function DUF125 transmembrane	5	N
Tsac_0052	hypothetical protein	5	N
Tsac_0062	hypothetical protein	5	N
Tsac_0063	Cobalamin biosynthesis protein cbiB	5	N
Tsac_0100	cation diffusion facilitator family transporter	5	N
Tsac_0124	hypothetical protein	5	N
Tsac_0252	cobalt ABC transporter, inner membrane subunit CbiQ	5	N
Tsac_0336	ABC transporter related protein	5	N
Tsac_0382	ABC transporter related protein	5	N
Tsac_0420	protein of unknown function DUF606	5	N
Tsac_0430	VanZ family protein	5	N
Tsac_0473	hypothetical protein	5	N
Tsac_0597	exopolysaccharide biosynthesis polyprenyl glycosylphosphotransferase	5	N
Tsac_0650	nucleoside recognition domain protein	5	N
Tsac_0701	hypothetical protein	5	N
Tsac_0779	putative signal transduction histidine kinase	5	N
Tsac_0791	hypothetical protein	5	N
Tsac_0811	SNARE associated protein	5	N
Tsac_0885	Type II secretion system F domain-containing protein	5	N
Tsac_0895	peptidase A24A prepilin type IV	5	N
Tsac_0946	membrane protein-like protein	5	N
Tsac_1044	ABC-type transporter, integral membrane subunit	5	N
Tsac_1147	Protein of unknown function DUF2179	5	N
Tsac_1161	NHL repeat containing protein	5	N

Tsac_1229	hypothetical protein	5	N
Tsac_1298	protein of unknown function DUF624	5	N
Tsac_1380	ABC-2 type transporter	5	N
Tsac_1419	ATP synthase subunit a	5	N
Tsac_1441	thiW protein	5	N
Tsac_1484	hypothetical protein	5	N
Tsac_1495	BioY protein	5	N
Tsac_1530	Heptaprenyl diphosphate synthase component I	5	N
Tsac_1576	sigma-E processing peptidase SpoII GA	5	N
Tsac_1595	Glycerol-3-phosphate acyltransferase	5	N
Tsac_1646	ABC-type transporter, integral membrane subunit	5	N
Tsac_1798	flagellar biosynthetic protein FlIR	5	N
Tsac_1842	cell division FtsK/SpoIIIE	5	N
Tsac_1897	peptidase M50	5	N
Tsac_2075	protein of unknown function DUF1393	5	N
Tsac_2120	rod shape-determining protein MreD	5	N
Tsac_2142	UPF0756 membrane protein yeaL	5	N
Tsac_2225	molybdate ABC transporter, inner membrane subunit	5	N
Tsac_2250	ABC transporter related protein	5	N
Tsac_2364	Protein of unknown function DUF2179	5	N
Tsac_2531	hypothetical protein	5	N
Tsac_2539	protein of unknown function DUF988	5	N
Tsac_2548	ABC transporter related protein	5	N
Tsac_2555	ABC-type transporter, integral membrane subunit	5	N
Tsac_2570	ABC-type transporter, integral membrane subunit	5	N
Tsac_2624	membrane protein-like protein	5	N
Tsac_0149	ABC-type transporter, integral membrane subunit	6	N
Tsac_0165	ABC-type transporter, integral membrane subunit	6	N
Tsac_0166	ABC-type transporter, integral membrane subunit	6	N
Tsac_0201	ABC-type transporter, integral membrane subunit	6	N
Tsac_0242	heavy metal translocating P-type ATPase	6	N
Tsac_0246	ABC transporter permease	6	N
Tsac_0337	ABC transporter related protein	6	N
Tsac_0340	ABC-type transporter, integral membrane subunit	6	N
Tsac_0341	ABC-type transporter, integral membrane subunit	6	N
Tsac_0383	ABC transporter related protein	6	N
Tsac_0495	ABC-type transporter, integral membrane subunit	6	N
Tsac_0643	protein of unknown function DUF81	6	N
Tsac_0694	ABC-type transporter, integral membrane subunit	6	N
Tsac_0730	Abortive infection protein	6	N
Tsac_0761	ABC-type transporter, integral membrane subunit	6	N
Tsac_0762	ABC-type transporter, integral membrane subunit	6	N
Tsac_0777	ABC-2 type transporter	6	N
Tsac_0778	ABC-2 type transporter	6	N
Tsac_0788	proton-coupled thiamine transporter YuaJ	6	N
Tsac_0801	hypothetical protein	6	N
Tsac_0911	ABC-2 type transporter	6	N
Tsac_0967	diguanylate cyclase with GAF sensor	6	N
Tsac_1072	4Fe-4S ferredoxin iron-sulfur binding domain-containing protein	6	N
Tsac_1108	hypothetical protein	6	N
Tsac_1159	ABC-type transporter, integral membrane subunit	6	N
Tsac_1163	ABC-type transporter, integral membrane subunit	6	N
Tsac_1164	ABC-type transporter, integral membrane subunit	6	N
Tsac_1203	MIP family channel protein	6	N
Tsac_1223	ABC-2 type transporter	6	N
Tsac_1272	ABC-type transporter, integral membrane subunit	6	N
Tsac_1332	hypothetical protein	6	N

Tsac_1344	ABC-type transporter, integral membrane subunit	6	N
Tsac_1345	ABC-type transporter, integral membrane subunit	6	N
Tsac_1349	ABC-type transporter, integral membrane subunit	6	N
Tsac_1350	ABC-type transporter, integral membrane subunit	6	N
Tsac_1430	ABC-type transporter, integral membrane subunit	6	N
Tsac_1445	ABC-type transporter, integral membrane subunit	6	N
Tsac_1446	ABC-type transporter, integral membrane subunit	6	N
Tsac_1458	ABC-type transporter, integral membrane subunit	6	N
Tsac_1463	ABC-type transporter, integral membrane subunit	6	N
Tsac_1464	ABC-type transporter, integral membrane subunit	6	N
Tsac_1488	phosphoesterase PA-phosphatase related protein	6	N
Tsac_1490	CDP-alcohol phosphatidyltransferase	6	N
Tsac_1510	ABC-type transporter, integral membrane subunit	6	N
Tsac_1511	ABC-type transporter, integral membrane subunit	6	N
Tsac_1514	ABC-type transporter, integral membrane subunit	6	N
Tsac_1515	ABC-type transporter, integral membrane subunit	6	N
Tsac_1585	phosphate ABC transporter, inner membrane subunit PstC	6	N
Tsac_1586	phosphate ABC transporter, inner membrane subunit PstA	6	N
Tsac_1632	cytochrome c biogenesis protein transmembrane region	6	N
Tsac_1645	ABC-type transporter, integral membrane subunit	6	N
Tsac_1664	ABC-type transporter, integral membrane subunit	6	N
Tsac_1690	protein-export membrane protein SecD	6	N
Tsac_1691	protein-export membrane protein SecF	6	N
Tsac_2045	diacylglycerol kinase	6	N
Tsac_2078	ABC-2 type transporter	6	N
Tsac_2089	ABC-type transporter, integral membrane subunit	6	N
Tsac_2244	NifC-like ABC-type porter	6	N
Tsac_2256	ABC-type transporter, integral membrane subunit	6	N
Tsac_2257	ABC-type transporter, integral membrane subunit	6	N
Tsac_2265	lantibiotic protection ABC transporter permease subunit, MutG family	6	N
Tsac_2266	lantibiotic protection ABC transporter permease subunit, MutE/EpiE family	6	N
Tsac_2271	signal transduction histidine kinase, LytS	6	N
Tsac_2295	ABC-type transporter, integral membrane subunit	6	N
Tsac_2302	ABC-type transporter, integral membrane subunit	6	N
Tsac_2303	ABC-type transporter, integral membrane subunit	6	N
Tsac_2323	ABC-type transporter, integral membrane subunit	6	N
Tsac_2379	sporulation protein YtaF	6	N
Tsac_2541	YhgE/Pip N-terminal domain protein	6	N
Tsac_2556	ABC-type transporter, integral membrane subunit	6	N
Tsac_2608	protein of unknown function DUF554	6	N
Tsac_2628	SNARE associated protein	6	N
Tsac_2634	cobalt ABC transporter, inner membrane subunit CbiQ	6	N
Tsac_2636	cobalamin biosynthesis protein CbiM	6	N
Tsac_2650	metal dependent phosphohydrolase	6	N
Tsac_0058	Cobalamin synthase	7	N
Tsac_0150	ABC-type transporter, integral membrane subunit	7	N
Tsac_0202	ABC-type transporter, integral membrane subunit	7	N
Tsac_0575	sporulation integral membrane protein YtvI	7	N
Tsac_0580	UPF0182 protein	7	N
Tsac_0676	respiratory-chain NADH dehydrogenase subunit 1	7	N
Tsac_0693	ABC-type transporter, integral membrane subunit	7	N
Tsac_0918	UbiA prenyltransferase	7	N
Tsac_1123	Protein of unknown function DUF318, transmembrane	7	N
Tsac_1158	ABC-type transporter, integral membrane subunit	7	N
Tsac_1241	PDZ/DHR/GLGF domain protein	7	N
Tsac_1250	ABC-type transporter, integral membrane subunit	7	N

Tsac_1282	ABC-type transporter, integral membrane subunit	7	N
Tsac_1589	protein of unknown function DUF1614	7	N
Tsac_1599	peptidase M48 Ste24p	7	N
Tsac_1913	hypothetical protein	7	N
Tsac_1954	peptidase A24A domain protein	7	N
Tsac_1987	Abortive infection protein	7	N
Tsac_2034	hypothetical protein	7	N
Tsac_2047	7TM receptor with intracellular metal dependent phosphohydrolase	7	N
Tsac_2079	calcium-translocating P-type ATPase, PMCA-type	7	N
Tsac_2090	ABC-type transporter, integral membrane subunit	7	N
Tsac_2154	heavy metal translocating P-type ATPase	7	N
Tsac_2230	ABC-type transporter, integral membrane subunit	7	N
Tsac_2294	ABC-type transporter, integral membrane subunit	7	N
Tsac_2324	ABC-type transporter, integral membrane subunit	7	N
Tsac_2350	Conserved hypothetical protein CHP00245	7	N
Tsac_2386	Potassium-transporting ATPase B chain	7	N
Tsac_2466	Prolipoprotein diacylglycerol transferase	7	N
Tsac_2505	phosphotransferase system PTS sorbose-specific IIC subunit	7	N
Tsac_2547	protein of unknown function DUF81	7	N
Tsac_2603	ABC-type transporter, integral membrane subunit	7	N
Tsac_0039	ABC-type transporter, integral membrane subunit	8	N
Tsac_0089	ABC-type transporter, integral membrane subunit	8	N
Tsac_0119	phosphate transporter	8	N
Tsac_0320	zinc/iron permease	8	N
Tsac_0496	ABC-type transporter, integral membrane subunit	8	N
Tsac_0526	Protein of unknown function DUF2232, membrane	8	N
Tsac_0891	hypothetical protein	8	N
Tsac_0919	hypothetical protein	8	N
Tsac_0932	stage II sporulation protein E, protein serine/threonine phosphatase	8	N
Tsac_1059	transglutaminase domain-containing protein	8	N
Tsac_1071	hypothetical protein	8	N
Tsac_1168	glycosyltransferase 36	8	N
Tsac_1170	protein of unknown function DUF1648	8	N
Tsac_1187	Na ⁺ /Picotransporter	8	N
Tsac_1280	ABC-type transporter, integral membrane subunit	8	N
Tsac_1335	copper-translocating P-type ATPase	8	N
Tsac_1469	protein of unknown function DUF214	8	N
Tsac_1480	ATPase, P-type (transporting), HAD superfamily, subfamily IC	8	N
Tsac_1604	Undecaprenyl-diphosphatase	8	N
Tsac_1800	flagellar biosynthesis protein FlhA	8	N
Tsac_1817	phosphatidate cytidyltransferase	8	N
Tsac_1981	protein of unknown function UPF0118	8	N
Tsac_1986	Abortive infection protein	8	N
Tsac_1992	Protein of unknown function DUF318, transmembrane	8	N
Tsac_2339	ATPase, P-type (transporting), HAD superfamily, subfamily IC	8	N
Tsac_2376	YibE/F family protein	8	N
Tsac_2600	ABC-type transporter, integral membrane subunit	8	N
Tsac_0040	ABC-type transporter, integral membrane subunit	9	N
Tsac_0067	ABC-type transporter, integral membrane subunit	9	N
Tsac_0160	MATE efflux family protein	9	N
Tsac_0161	Auxin Efflux Carrier	9	N
Tsac_0346	PTS system, fructose subfamily, IIC subunit	9	N
Tsac_0971	PTS system, fructose subfamily, IIC subunit	9	N
Tsac_1186	spore germination protein	9	N
Tsac_1192	integral membrane protein	9	N
Tsac_2229	ABC-type transporter, integral membrane subunit	9	N
Tsac_2373	rod shape-determining protein RodA	9	N

Tsac_2390	hypothetical protein	9	N
Tsac_2604	ABC-type transporter, integral membrane subunit	9	N
Tsac_0032	PTS system, N-acetylglucosamine-specific IIBC subunit	10	N
Tsac_0048	Auxin Efflux Carrier	10	N
Tsac_0083	ferrous iron transport protein B	10	N
Tsac_0107	phosphotransferase system EIIC	10	N
Tsac_0134	ABC-type transporter, integral membrane subunit	10	N
Tsac_0196	sodium/calcium exchanger membrane region	10	N
Tsac_0351	oligosaccharyl transferase STT3 subunit	10	N
Tsac_0364	acyltransferase 3	10	N
Tsac_0455	protein of unknown function DUF1646	10	N
Tsac_0753	spore germination protein	10	N
Tsac_0782	amino acid transporter-like protein	10	N
Tsac_0813	Manganese transport protein mntH	10	N
Tsac_0948	spore germination protein	10	N
Tsac_1031	preprotein translocase, SecY subunit	10	N
Tsac_1200	arsenical-resistance protein	10	N
Tsac_1267	PTS system, cellobiose-specific IIC subunit	10	N
Tsac_1271	ABC-type transporter, integral membrane subunit	10	N
Tsac_1313	acyltransferase 3	10	N
Tsac_1323	metal ion transporter, NRAMP family	10	N
Tsac_1428	protein of unknown function DUF6 transmembrane	10	N
Tsac_1478	hypothetical protein	10	N
Tsac_1566	Phospho-N-acetylmuramoyl-pentapeptide-transferase	10	N
Tsac_1568	stage V sporulation protein E	10	N
Tsac_1984	major facilitator superfamily MFS_1	10	N
Tsac_2072	DNA internalization-related competence protein ComEC/Rec2	10	N
Tsac_2140	Auxin Efflux Carrier	10	N
Tsac_2164	sodium ion-translocating decarboxylase, beta subunit	10	N
Tsac_2286	spore germination protein	10	N
Tsac_2314	PTS system, galactitol-specific IIC subunit	10	N
Tsac_2352	major facilitator superfamily MFS_1	10	N
Tsac_2385	Potassium-transporting ATPase A chain	10	N
Tsac_2565	PTS system, lactose/cellobiose family IIC subunit	10	N
Tsac_0254	major facilitator superfamily MFS_1	11	N
Tsac_0272	ABC-type transporter, integral membrane subunit	11	N
Tsac_0314	Glycosyl transferase, family 4, conserved region-containing protein	11	N
Tsac_0520	natural resistance-associated macrophage protein	11	N
Tsac_0592	O-antigen polymerase	11	N
Tsac_0909	uracil-xanthine permease	11	N
Tsac_2614	natural resistance-associated macrophage protein	11	N
Tsac_0114	PTS system, lactose/cellobiose family IIC subunit	12	N
Tsac_0117	amino acid permease-associated region	12	N
Tsac_0239	MATE efflux family protein	12	N
Tsac_0263	putative sugar-specific permease SgaT/UlaA	12	N
Tsac_0309	amino acid permease-associated region	12	N
Tsac_0357	glycosyl transferase family 39	12	N
Tsac_0358	hypothetical protein	12	N
Tsac_0663	major facilitator superfamily MFS_1	12	N
Tsac_0766	amino acid permease-associated region	12	N
Tsac_0817	major facilitator superfamily MFS_1	12	N
Tsac_1246	cell cycle protein	12	N
Tsac_1314	amino acid permease-associated region	12	N
Tsac_1376	major facilitator superfamily MFS_1	12	N
Tsac_1607	hypothetical protein	12	N
Tsac_1640	drug resistance transporter, EmrB/QacA subfamily	12	N
Tsac_2150	amino acid permease-associated region	12	N

Tsac_2202	major facilitator superfamily MFS_1	12	N
Tsac_2247	hydroxymethylpyrimidine transporter CytX	12	N
Tsac_2261	amino acid permease-associated region	12	N
Tsac_2366	major facilitator superfamily MFS_1	12	N
Tsac_2572	stage V sporulation protein B	12	N
Tsac_0076	amino acid permease-associated region	13	N
Tsac_0769	arginine/ornithine antiporter	13	N
Tsac_2174	amino acid permease-associated region	13	N
Tsac_2396	integral membrane protein MviN	13	N
Tsac_2584	Xanthine/uracil/vitamin C permease	13	N
Tsac_0292	integral membrane protein MviN	14	N
Tsac_1483	drug resistance transporter, EmrB/QacA subfamily	14	N
Tsac_1433	O-antigen polymerase	15	N
Tsac_2269	carbon starvation protein CstA	15	N
Tsac_2336	Pyrophosphate-energized proton pump	15	N
Tsac_0675	NADH/Ubiquinone/plastoquinone (complex I)	16	N
Tsac_2176	oligopeptide transporter, OPT family	16	N
Tsac_0094	hypothetical protein	2	Y
Tsac_0251	hypothetical protein	2	Y
Tsac_0484	signal transduction histidine kinase regulating citrate/malate metabolism	2	Y
Tsac_1590	stage II sporulation protein P	2	Y
Tsac_1629	hypothetical protein	2	Y
Tsac_0245	hypothetical protein	6	Y
Tsac_0250	cobalamin (vitamin B12) biosynthesis CbiM protein	6	Y
Tsac_1796	flagellar biosynthetic protein FliP	6	Y
Tsac_1742	sporulation integral membrane protein YlBJ	8	Y
Tsac_2115	rod shape-determining protein RodA	8	Y
Tsac_1144	hypothetical protein	9	Y
Tsac_1934	stage III sporulation protein AE	9	Y
Tsac_0644	hypothetical protein	11	Y
Tsac_2065	hypothetical protein	12	Y
Tsac_2213	ammonium transporter	12	Y
Tsac_2215	ammonium transporter	12	Y

Supplemental Table S3. ANOVA p-values for those proteins which are predicted to be secreted or localized to the membrane ranked from strongest to weakest conditional expression during growth on different substrates.

Gene number and product	ANOVA
Tsac_1459.Cellulose.14.beta.cellobiosidase.	1.97E-14
Tsac_1447.extracellular.solute.binding.protein.family.1.	2.35E-13
Tsac_1462.extracellular.solute.binding.protein.family.1.	3.41E-12
Tsac_1456.extracellular.solute.binding.protein.family.1.	9.72E-12
Tsac_0136.periplasmic.sugar.binding.protein.	4.06E-10
Tsac_1513.extracellular.solute.binding.protein.family.1.	7.55E-10
Tsac_0032.PTS.system.N.acetylglucosamine.specific.IIBC.subunit.	1.26E-09
Tsac_1342.Pullulanase.	1.95E-09
Tsac_1461.extracellular.solute.binding.protein.family.1.	6.34E-09
Tsac_1365.glucan.14.alpha.glucosidase.	1.49E-08
Tsac_2177.pyruvate.ketoisovalerate.oxidoreductase.gamma.subunit.	5.54E-08
Tsac_0897.Endo.14.beta.xylanase.	8.73E-08
Tsac_0104.5..nucleotidase..2.3..cyclic.nucleotide.2..phosphodiesterase.	9.24E-08
Tsac_1346.Cyclomaltodextrin.glucanotransferase.	1.82E-07
Tsac_1348.extracellular.solute.binding.protein.family.1.	2.21E-07
Tsac_0042.basic.membrane.lipoprotein.	5.02E-07
Tsac_1347.chemotaxis.sensory.transducer.	6.64E-07
Tsac_1644.ABC.type.transporter.periplasmic.subunit.	1.13E-06
Tsac_1343.extracellular.solute.binding.protein.family.1.	1.34E-06
Tsac_1279.EppA.BapA.family.protein.	1.84E-06
Tsac_2304.extracellular.solute.binding.protein.family.1.	4.65E-06
Tsac_0034.chemotaxis.sensory.transducer.	7.37E-06
Tsac_0692.extracellular.solute.binding.protein.family.1.	7.79E-06
Tsac_0373.carboxyl.terminal.protease.	1.83E-05
Tsac_0203.extracellular.solute.binding.protein.family.1.	3.44E-05
Tsac_0151.extracellular.solute.binding.protein.family.1.	4.14E-05
Tsac_1455.histidine.kinase.internal.region.	0.00010067
Tsac_1273.hypothetical.protein.	0.00016097
Tsac_0937.ATP.dependent.metalloprotease.FtsH.	0.000163591
Tsac_1165.extracellular.solute.binding.protein.family.1.	0.000186136
Tsac_0005.hypothetical.protein.	0.000247081
Tsac_2541.YhgE.Pip.N.terminal.domain.protein.	0.000255451
Tsac_0167.extracellular.solute.binding.protein.family.1.	0.000310563
Tsac_2153.Propeptide.PepSY.amd.peptidase.M4.	0.000319521
Tsac_0832.copper.amine.oxidase.like.domain.containing.protein.	0.000422497
Tsac_0137.periplasmic.binding.protein.LacI.transcriptional.regulator.	0.000575378

Tsac_2395.thiamine.biosynthesis.Thi4.protein.	0.000685224
Tsac_1143.hypothetical.protein.	0.000977891
Tsac_2336.Pyrophosphate.energized.proton.pump.	0.001477411
Tsac_2325.extracellular.solute.binding.protein.family.1.	0.001550176
Tsac_0301.S.layer.domain.containing.protein.	0.00167856
Tsac_2504.PTS.system.mannose.fructose.sorbose.family.IID.component.	0.001912198
Tsac_0493.FAD.dependent.oxidoreductase.	0.002086729
Tsac_0913.secretion.protein.HlyD.family.protein.	0.002619399
Tsac_2571.lipoprotein.YaeC.family.	0.002974122
Tsac_2601.ABC.transporter.substrate.binding.protein.	0.003653495
Tsac_0017.hypothetical.protein.	0.004845978
Tsac_0383.Xenobiotic.transporting.ATPase.	0.00543876
Tsac_2602.Extracellular.ligand.binding.receptor.	0.005543996
Tsac_2557.ABC.type.transporter.periplasmic.subunit.	0.008087377

Supplemental Table S4. ANOVA p-values from the whole cell protein ranked from strongest to weakest conditional expression during growth on different substrates.

Gene number and product	ANOVA
Tsac_2310.hypothetical.protein.	2.28E-18
Tsac_1449.oxidoreductase.domain.protein.	9.22E-16
Tsac_1459.Cellulose.14.beta.cellobiosidase.	1.97E-14
Tsac_0499.Xylose.isomerase.domain.containing.protein.TIM.barrel.	7.57E-14
Tsac_1447.extracellular.solute.binding.protein.family.1.	2.35E-13
Tsac_0276.xylulokinase.	2.59E-12
Tsac_1462.extracellular.solute.binding.protein.family.1.	3.41E-12
Tsac_1456.extracellular.solute.binding.protein.family.1.	9.72E-12
Tsac_0273.Monosaccharide.transporting.ATPase.	1.02E-11
Tsac_0194.hypothetical.protein.	4.08E-11
Tsac_1906.anti.sigma.F.factor.antagonist.	4.23E-11
Tsac_2313.ketose.bisphosphate.aldolase.	1.28E-10
Tsac_2880.helix.turn.helix.domain.protein.	1.45E-10
Tsac_1465.polysaccharide.deacetylase.	1.77E-10
Tsac_2315.phosphotransferase.system.lactose.cellobiose.specific.IIB.subunit.	1.82E-10
Tsac_0695.glycosidase.related.protein.	2.05E-10
Tsac_0136.periplasmic.sugar.binding.protein.	4.06E-10
Tsac_1945.Shikimate.kinase.	4.17E-10
Tsac_1513.extracellular.solute.binding.protein.family.1.	7.55E-10
Tsac_1443.GntR.domain.protein.	7.76E-10
Tsac_0608.hypothetical.protein.	1.11E-09
Tsac_0032.PTS.system.N.acetylglucosamine.specific.IIBC.subunit.	1.26E-09
Tsac_1702.Aspartate.carbamoyltransferase.	1.54E-09
Tsac_1444.Mannonate.dehydratase.	1.70E-09
Tsac_1342.Pullulanase.	1.95E-09
Tsac_2026.protein.of.unknown.function.UPF0001.	2.24E-09
Tsac_0628.formate.acetyltransferase.	2.24E-09
Tsac_1703.dihydroorotase.multifunctional.complex.type.	3.76E-09
Tsac_0277.Xylose.isomerase.	5.42E-09
Tsac_1461.extracellular.solute.binding.protein.family.1.	6.34E-09
Tsac_1209.dihydroxyacetone.kinase.DhaK.subunit.	9.97E-09
Tsac_1452.Xylan.14.beta.xylosidase.	1.14E-08
Tsac_1448.Alpha.glucuronidase.	1.29E-08
Tsac_1365.glucan.14.alpha.glucosidase.	1.49E-08
Tsac_0974.translation.elongation.factor.G.	1.56E-08
Tsac_1389.ribosomal.protein.S4.	1.59E-08
Tsac_2582.Phosphoribosylaminoimidazole.succinocarboxamide.synthase.	1.97E-08

Tsac_0193.glycogen.synthase.	2.93E-08
Tsac_1210.dihydroxyacetone.kinase.L.subunit.	2.94E-08
Tsac_2177.pyruvate.ketoisovalerate.oxidoreductase.gamma.subunit.	5.54E-08
Tsac_1230.Glycerol.3.phosphate.transporting.ATPase.	6.56E-08
Tsac_0897.Endo.14.beta.xylanase.	8.73E-08
Tsac_0104.5..nucleotidase..2.3..cyclic.nucleotide.2..phosphodiesterase.	9.24E-08
Tsac_0787.methylated.DNA.protein.cysteine.methyltransferase.	1.04E-07
Tsac_2173.peptidase.M24.	1.18E-07
Tsac_0152.hypothetical.protein.	1.28E-07
Tsac_0274.D.xylose.ABC.transporter.periplasmic.substrate.binding.protein.	1.67E-07
Tsac_1346.Cyclomaltodextrin.glucoamylase.	1.82E-07
Tsac_1348.extracellular.solute.binding.protein.family.1.	2.21E-07
Tsac_1516.Kojibiose.phosphorylase.	2.29E-07