

**Supplementary Table S2** Manual annotations of CAZymes and sulfatases in *Polaribacter* sp. Hel1\_33\_49 and *Polaribacter* sp. Hel1\_85.

Locus	Product	EC number	CAZyme family	Gene
PHEL49_91	3-deoxy-D-manno-octulosonic-acid transferase, GT30 family	2.-.-.-	GT30	<i>kdtA</i>
PHEL49_120	lipopolysaccharide core biosynthesis glycosyltransferase, GT4 family		GT4	<i>lpsB</i>
PHEL49_134	conserved hypothetical protein (DUF1083), N-terminal CBMnc domain		CBMnc	
PHEL49_164	penicillin-binding protein 1A, GT51 family	2.4.1.129	GT51	<i>pbp1A</i>
PHEL49_169	membrane-bound lytic murein transglycosylase D precursor, two CBM50 domains, GH23 family	4.2.2.n1	GH23, CBM50 (2x)	<i>mltD</i>
PHEL49_213	glycosyltransferase, GT4 family	2.4.1.-	GT4	
PHEL49_215	glycosyltransferase, GT4 family	2.4.1.-	GT4	
PHEL49_216	putative glycosyltransferase			
PHEL49_217	glycosyltransferase, GT2 family	2.4.1.-	GT2	
PHEL49_321	endo-beta-N-acetylglucosaminidase, CBM50 domain, GH73 family	3.2.1.-	GH73, CBM50	
PHEL49_359	glycoside hydrolase, CBM48 domain, GH13 family		GH13, CBM48	
PHEL49_367	maltose phosphorylase, GH65 family	2.4.1.8	GH65	<i>mapA</i>
PHEL49_368	putative neopullanase, GH13 family	3.2.1.135	GH13	<i>susA</i>
PHEL49_369	carbohydrate esterase, CE1 family	3.1.1.-	CE1	
PHEL49_370	glycoside hydrolase, GH31 family		GH31	
PHEL49_371	glycoside hydrolase, GH13 family		GH13	
PHEL49_372	maltoXose-producing alpha-amylase, GH13-19 family	3.2.1.-	GH13-19	<i>amy</i>
PHEL49_394	conserved hypothetical protein (FUF1083), N-terminal CBMnc domain		CBMnc	
PHEL49_453	carbohydrate-binding protein, CBM48 domain		CBM48	
PHEL49_490	glycosyltransferase, GT4 family	2.4.1.-	GT4	
PHEL49_498	arylsulfate sulfotransferase	2.8.2.22	AssT	<i>assT</i>
PHEL49_632	glycosyltransferase, GT2 family	2.4.1.-	GT2	
PHEL49_634	putative mannosyltransferase, GT4 family	2.4.1.-	GT4	
PHEL49_635	glycosyltransferase, GT2 family	2.4.1.-	GT2	
PHEL49_636	glycosyltransferase, GT4 family	2.4.1.-	GT4	
PHEL49_638	glycosyltransferase, GT2 family	2.4.1.-	GT2	
PHEL49_640	FAD-dependent GMC oxidoreductase, AAnc family		AAnc	
PHEL49_644	cholesterol oxidase, AA3 family		AA3	
PHEL49_644	cholesterol oxidase, AA3 family		AA3	
PHEL49_644	cholesterol oxidase, AA3 family		AA3	
PHEL49_677	glycoside hydrolase, GH113 family		GH113	
PHEL49_681	glycosyltransferase, GT2 family	2.4.1.-	GT2	
PHEL49_682	glycosyltransferase, GT2 family	2.4.1.-	GT2	

PHEL49_693	glycosyltransferase, GHnc family	3.2.1.-	GHnc	
PHEL49_709	glucosylceramidase, GH30-1 family	3.2.1.45	GH30-1	<i>gbaA</i>
PHEL49_710	putative endo-1,3-beta-glucanase, GH16 family	3.2.1.39	GH16	
PHEL49_711	glycoside hydrolase, two CBM6 domains, GH5-46 family	3.2.1.-	GH5-46, CBM6 (2x)	
PHEL49_748	putative feruloyl esterase, CE1 family	3.1.1.73	CE1	
PHEL49_761	putative glycoside hydrolase, GH16 family		GH16	
PHEL49_876	beta-glucosidase, GH3 family	3.2.1.21	GH3	<i>bglX1</i>
PHEL49_926	glycoside hydrolase, GHnc family	3.2.1.-	GHnc	
PHEL49_935	glycoside hydrolase, GHnc family	3.2.1.-	GHnc	
PHEL49_1016	putative carbohydrate esterase, CEnc family		CEnc	
PHEL49_1077	dolichol-phosphate mannosyltransferase, GT2 family	2.4.1.83	GT2	<i>ppmA</i>
PHEL49_1084	glycosyltransferase, GT5 family	2.4.1.-	GT5	
PHEL49_1176	glycosyltransferase WbsX family protein			
PHEL49_1177	glycosyltransferase WbsX family protein			
PHEL49_1178	glycosyltransferase, GT4 family	2.4.1.-	GT4	
PHEL49_1179	putative glycosyltransferase			
PHEL49_1180	glycosyltransferase, GT4 family	2.4.1.-	GT4	
PHEL49_1183	glycosyltransferase, GT4 family	2.4.1.-	GT4	
PHEL49_1198	peptidoglycan-binding LysM domain protein, CBM50 domain		CBM50	
PHEL49_1248	catalase / peroxidase	1.11.1.21	AAnc	<i>katG</i>
PHEL49_1257	beta-N-acetylglucosaminidase, GH3 family / serine peptidase, S12 family	3.2.1.52/3.4.21.-	GH3, S12	
PHEL49_1268	glycosyltransferase, GT4 family	2.4.1.-	GT4	
PHEL49_1269	glycosyltransferase, GT4 family	2.4.1.-	GT4	
PHEL49_1323	sulfatase (S1-51) / glycoside hydrolase (GH99)		S1-51, GH99	
PHEL49_1327	putative glycoside hydrolase, GH99 family		GH99	
PHEL49_1328	putative glycoside hydrolase, GH99 family		GH99	
PHEL49_1329	alpha-1,2-mannosidase, GH92 family	3.2.1.-	GH92	
PHEL49_1330	alpha-1,2-mannosidase, GH92 family	3.2.1.-	GH92	
PHEL49_1332	sulfatase, S1-15 family		S1-15	
PHEL49_1333	sulfatase, S1-nc family		S1-nc	
PHEL49_1334	sulfatase, S1-51 family		S1-51	
PHEL49_1336	sulfatase, S1-nc family		S1-nc	
PHEL49_1339	alpha-1,2-mannosidase, GH92 family	3.2.1.-	GH92	
PHEL49_1340	beta-glucosidase, GH3 family	3.2.1.21	GH3	<i>bglX2</i>
PHEL49_1341	beta-glucosidase, GH3 family	3.2.1.21	GH3	<i>bglX3</i>
PHEL49_1342	mucin-desulfating sulfatase (N-acetylglucosamine-6-sulfatase), S1-11 family	3.1.6.14	S1-11	
PHEL49_1345	alpha-1,2-mannosidase, GH92 family	3.2.1.-	GH92	
PHEL49_1354	unsaturated glucuronyl hydrolase, GH88 family	3.2.1.179	GH88	<i>uglA1</i>

PHEL49_1356	alpha-1,2-mannosidase, GH92 family	3.2.1.-	GH92	
PHEL49_1357	beta-galactosidase, GH2 family	3.2.1.23	GH2	<i>bgaC</i>
PHEL49_1358	sulfatase, S1-71 family		S1-71	
PHEL49_1359	mucin-desulfating sulfatase (N-acetylglucosamine-6-sulfatase), S1-11 family	3.1.6.14	S1-11	
PHEL49_1360	iduronate-2-sulfatase, S1-7 family	3.1.6.13	S1-7	
PHEL49_1373	endo-1,3(4)-beta-glucanase, GH16 family	3.2.1.6	GH16	<i>lamC1</i>
PHEL49_1384	beta-hexosaminidase, GH20 family	3.2.1.52	GH20	<i>nahA1</i>
PHEL49_1398	carbohydrate esterase, CE14 family	3.5.1.-	CE14	
PHEL49_1438	glycosyltransferase, GT2 family	2.4.1.-	GT2	
PHEL49_1439	beta-mannosidase, GH2 family	3.2.1.25	GH2	
PHEL49_1441	beta-N-acetylhexosaminidase, GH20 family	3.2.1.52	GH20	<i>nahA2</i>
PHEL49_1442	alpha-1,2-mannosidase, CBM32 domain, GH92 family	3.2.1.-	GH92, CBM32	
PHEL49_1474	lipopolysaccharide core biosynthesis glycosyltransferase, GT2 family	2.4.1.-	GT2	<i>waaE</i>
PHEL49_1475	glycosyltransferase, GT2 family	2.4.1.-	GT2	
PHEL49_1477	sulfatase		S1-nc	
PHEL49_1482	undecaprenyl-phosphate 4-deoxy-4-formamido-L-arabinose transferase, GT2 family	2.7.8.-	GT2	<i>arnC</i>
PHEL49_1499	endo-1,3-beta-xylanase, GH26 family	3.2.1.32	GH26	<i>txyA</i>
PHEL49_1561	glycosyltransferase, GT2 family	2.4.1.-	GT2	
PHEL49_1579	glycoside hydrolase, GHnc family	3.2.1.-	GHnc	
PHEL49_1580	glycoside hydrolase, GHnc family	3.2.1.-	GHnc	
PHEL49_1617	hypothetical protein containing three putative carbohydrate binding modules, CBM61		CBM61	
PHEL49_1618	putative endo-1,3(4)-beta-glucanase, GH81 family	3.2.1.6	GH81	
PHEL49_1644	carbohydrate binding protein, CBM9 domain		CBM9	
PHEL49_1673	sulfatase		S1-nc	
PHEL49_1705	glycosyltransferase, GT2 family	2.4.1.-	GT2	
PHEL49_1776	endo-1,3(4)-beta-glucanase, GH16 family	3.2.1.6	GH16	<i>lamA1</i>
PHEL49_1806	glycosyltransferase, GT4 family	2.4.1.-	GT4	
PHEL49_1900	conserved hypothetical protein, sialidase domain, GH74 family		GH74	
PHEL49_1939	bifunctional UDP-3-O-[3-hydroxymyristoyl] N-acetylglucosamine deacetylase / (3R)-hydroxymyristoyl-[acyl-carrier protein] dehydratase, CE11 family	3.5.1.- / 4.2.1.-	CE11	<i>lpxC / fabZ</i>
PHEL49_1992	carbohydrate esterase, CE14 family	3.1.1.-	CE14	
PHEL49_2041	lytic murein exotransglycosylase, GH23 family	4.2.2.n1	GH23	
PHEL49_2066	glycoside hydrolase, GHnc family	3.2.1.-	GHnc	
PHEL49_2071	carbohydrate binding protein, CBM4 domain		CBM4	
PHEL49_2074	glucan 1,3-beta-glucosidase, GH17 family	3.2.1.58	GH17	
PHEL49_2076	glucosylceramidase, GH30-1 family	3.2.1.45	GH30-1	
PHEL49_2077	glycoside hydrolase, GH17 family		GH17	
PHEL49_2078	beta-glucosidase, GH3 family	3.2.1.21	GH3	<i>bglX4</i>

PHEL49_2080	endo-1,3(4)-beta-glucanase, GH16 family	3.2.1.6	GH16	<i>lamC2</i>
PHEL49_2081	conserved hypothetical protein, CBM23 and CBM8 domains		CBM23, CBM8	
PHEL49_2082	glycoside hydrolase, GHnc family	3.2.1.-	GHnc	
PHEL49_2199	glycosyltransferase, GT2 family	2.4.1.-	GT2	
PHEL49_2210	glycosyltransferase, GT2 family	2.4.1.-	GT2	
PHEL49_2214	carbohydrate binding protein, CBM50 domain		CBM50	<i>ygaU</i>
PHEL49_2234	capsular glucan synthase, GT4 family	2.4.1.21	GT4	<i>glgA</i>
PHEL49_2236	putative alpha-1,4-glucan: phosphate maltosyltransferase, GH13-3 family	2.4.1.-	GH13-3	<i>glgE</i>
PHEL49_2237	1,4-alpha-glucan branching enzyme, CBM48 domain, GH13-9 family	2.4.1.18	GH13-9, CBM48	<i>glgB</i>
PHEL49_2239	alpha-glucosidase, GH31 family	3.2.1.20	GH31	<i>malA</i>
PHEL49_2274	endo-1,3(4)-beta-glucanase, GH16 family	3.2.1.6	GH16	<i>lamA2</i>
PHEL49_2323	lytic murein exotransglycosylase, GH23 family	4.2.2.n1	GH23	<i>mltF</i>
PHEL49_2324	glycosyltransferase, GT2 family	2.4.1.-	GT2	
PHEL49_2325	glycosyltransferase, GT4 family	2.4.1.-	GT4	
PHEL49_2400	lipid-A-disaccharide synthase, GT19 family	2.4.1.182	GT19	<i>lpxB</i>
PHEL49_2421	UDP-N-acetylglucosamine-N-acetylmuramyl- (pentapeptide) pyrophosphoryl-undecaprenol N-acetylglucosamine transferase, GT28 family	2.4.1.227	GT28	<i>murG</i>
PHEL49_2450	glycoside hydrolase, GH74 family		GH74	
PHEL49_2557	glycosyltransferase, GT83 family	2.4.1.-	GT83	
PHEL49_2579	sulfatase, S1-16 family		S1-16	
PHEL49_2592	glycosyltransferase, GT4 family		GT4	
PHEL49_2648	glycosyltransferase, GT4 family	2.4.1.-	GT4	
PHEL49_2653	glycoside hydrolase, GH26 family / putative mannan endo-1,4-beta-mannosidase		GH26	
PHEL49_2654	glycosyltransferase, GT2 family	2.4.1.-	GT2	

<b>Locus</b>	<b>Product</b>	<b>EC number</b>	<b>CAZyme family</b>	<b>Gene</b>
PHEL85_63	carbohydrate esterase, CE14 family		CE14	
PHEL85_113	glycosyltransferase, GT2 family		GT2	
PHEL85_119	lipopolysaccharide core biosynthesis glycosyltransferase WaaE, GT2 family	2.4.-.-	GT2	<i>waaE</i>
PHEL85_125	undecaprenyl-phosphate 4-deoxy-4-formamido-L-arabinose transferase, GT2 family	2.4.2.53	GT2	<i>arnC</i>
PHEL85_151	peptidoglycan-binding LysM domain protein, CBM50 domain		CBM50	
PHEL85_156	beta-glucosidase A, GH1 family	3.2.1.21	GH1	<i>bglA</i>
PHEL85_158	beta-glucosidase B, GH3 family	3.2.1.21	GH3	<i>bglB</i>
PHEL85_194	glycosyltransferase, GTnc family		GTnc	
PHEL85_205	sulfatase, S1-29 family		S1-29	
PHEL85_234	carbohydrate esterase, CE14 family		CE14	

PHEL85_265	glycosyltransferase, GT4 family		GT4	
PHEL85_269	glycosyltransferase, GT4 family		GT4	
PHEL85_270	glycosyltransferase, GTnc family		GTnc	
PHEL85_275	glycosyltransferase, GT2 family		GT2	
PHEL85_278	glycosyltransferase, GT2 family		GT2	
PHEL85_279	glycosyltransferase, GT4 family		GT4	
PHEL85_280	glycosyltransferase, GT4 family		GT4	
PHEL85_282	glycosyltransferase, GT4 family		GT4	
PHEL85_284	glycosyltransferase, GT4 family		GT4	
PHEL85_327	glycoside hydrolase, GH25 family		GH25	
PHEL85_377	bifunctional UDP-3-O-[3-hydroxymyristoyl] N-acetylglucosamine deacetylase, CE11 family / (3R)-hydroxymyristoyl-[acyl carrier protein] dehydratase	3.5.1-/4.2.1.59	CE11	<i>lpxC/fabZ</i>
PHEL85_431	peptidoglycan-binding LysM domain protein, CBM50 domain		CBM50 (2x)	
PHEL85_502	beta-hexosaminidase, GH3 family	3.2.1.52	GH3	<i>nagZ</i>
PHEL85_559	N-acetyl-alpha-D-glucosaminyl L-malate synthase, GT4 family		GT4	
PHEL85_682	alginate lyase (endo-gulonate lyase), CBM32 domain, PL7-3 family	4.2.2.3	PL7-3, CBM32	<i>alyA1</i>
PHEL85_701	glycosyltransferase, GT4 family		GT4	
PHEL85_722	glycosyltransferase, GT2 family		GT2	
PHEL85_727	sulfatase		S1-nc	
PHEL85_750	murein lytic exotransglycosylase, GH23 family	3.2.1.n1	GH23	<i>mltD1</i>
PHEL85_822	endo-1,3(4)-beta-glucanase, CBM6 domain, GH81 family	3.2.1.39	GH81, CBM6	
PHEL85_866	response regulator receiver domain / dolichyl-phosphate beta-glycosyltransferase, GT2 family	2.4.1.117	GT2	
PHEL85_869	glycoside hydrolase, GH5 family	3.2.1.-	GH5	
PHEL85_870	glycosyltransferase, GT4 family		GT4	
PHEL85_889	possible glucan exo-1,3-beta-glucosidase, GH17 family	3.2.1.58	GH17	<i>bgl2</i>
PHEL85_891	glycosylceramidase, GH30-1 family	3.2.1.45	GH30-1	<i>gba</i>
PHEL85_892	glycoside hydrolase, GH17 family		GH17	
PHEL85_893	beta-glucosidase, GH3 family	3.2.1.21	GH3	<i>bglX1</i>
PHEL85_895	glycoside hydrolase, GHnc family		GHnc	
PHEL85_896	endo-1,3(4)-beta-glucanase, GH16 family	3.2.1.6	GH16	<i>lamA</i>
PHEL85_897	carbohydrate binding protein, CBM4 domain		CBM4 (2x)	
PHEL85_902	alpha-glucosidase, GH97 family	3.2.1.20	GH97	<i>susB</i>
PHEL85_903	maltoXose-producing alpha-amylase, GH13-19 family	3.2.1.-	GH13-19	<i>amy</i>

PHEL85_904	glycoside hydrolase, GH13 family	3.2.1.-	GH13	
PHEL85_905	alpha-glucosidase, GH31 family	3.2.1.20	GH31	<i>malA</i>
PHEL85_906	putative neopullanase, GH13 family	3.2.1.135	GH13	<i>susA</i>
PHEL85_907	maltose phosphorylase, GH65 family	2.4.1.8	GH65	<i>mapA</i>
PHEL85_915	glycoside hydrolase, CBM48 domain, GH13 family	3.2.1.-	GH13, CBM48	
PHEL85_921	glycosyltransferase, GT2 family		GT2	
PHEL85_1027	sulfatase		S1-nc	
PHEL85_1054	glycoside hydrolase, GHnc family		GHnc	
PHEL85_1179	glycosyltransferase, GT4 family		GT4	
PHEL85_1180	glycosyltransferase, GT4 family		GT4	
PHEL85_1189	beta-N-acetylglucosaminidase, GH3 family / serine peptidase, S12 family	3.2.1.52/3.4.21.-	GH3, S12	<i>bglX2</i>
PHEL85_1263	FAD-dependent pyridine nucleotide-disulphide oxidoreductase, AA3 family		AA3	
PHEL85_1317	catalase/hydroperoxidase HPI(I)	1.11.1.21	AAnc	<i>katG</i>
PHEL85_1337	esterase/lipase/peptidase, CE10 family		CE10	
PHEL85_1387	peptidoglycan-binding LysM domain protein, CBM50 domain		CBM50	
PHEL85_1404	glycosyltransferase, GT2 family		GT2	
PHEL85_1406	glycosyltransferase, GT4 family		GT4	
PHEL85_1407	glycosyltransferase, GT4 family		GT4	
PHEL85_1409	glycosyltransferase, GT4 family		GT4	
PHEL85_1411	glycosyltransferase, GT4 family		GT4	
PHEL85_1457	glycogen synthase, GT4 family	2.4.1.21	GT4	<i>glgA</i>
PHEL85_1459	alpha-1,4-glucan:phosphate maltosyltransferase, GH13-3 family	2.4.1.-	GH13-3	<i>glgE</i>
PHEL85_1461	1,4-alpha-glucan (glycogen) branching enzyme, CBM48 domain, GH-13-9 family	2.4.1.18	GH13-9, CBM48	<i>glgB</i>
PHEL85_1462	alpha-glucosidase 2, GH31 family	3.2.1.20	GH31	
PHEL85_1511	glycosyltransferase, GTnc family		GTnc	
PHEL85_1558	BACON domain-containing alginate lyase, PL7-5 family	4.2.2.3	PL7-5	
PHEL85_1563	alginate lyase, PL6-1 family	4.2.2.3	PL6-1	<i>alyA6</i>
PHEL85_1567	alginate lyase (exo-oligoguluronate lyase), PL7-5 family	4.2.2.3	PL7-5	<i>alyA5b</i>
PHEL85_1570	alginate lyase (exo-oligoguluronate lyase), PL7-5 family	4.2.2.3	PL7-5	<i>alyA5a</i>
PHEL85_1575	alginate lyase, PL6-1 family	4.2.2.3	PL6-1	<i>alyA4a</i>
PHEL85_1577	alginate lyase, PL17-2 family	4.2.2.3	PL17-2	<i>alyA3</i>
PHEL85_1594	alginate lyase domain protein	4.2.2.3	PLnc	
PHEL85_1807	3-deoxy-D-manno-octulosonic-acid transferase, GT30 family	2.-.-.-	GT30	<i>kdtA</i>
PHEL85_1821	putative lipopolysaccharide core biosynthesis mannosyltransferase LpsB, GT4 family		GT4	<i>lpsB</i>

PHEL85_1864	glycosyltransferase, GTnc family		GTnc	
PHEL85_1866	putative rhamnosyltransferase, GT2 family	2.4.1.-	GT2	<i>wbbL</i>
PHEL85_1867	putative glycosyltransferase			
PHEL85_1868	glycosyltransferase, GT4 family		GT4	
PHEL85_1875	putative glycosyltransferase, GTnc family		GTnc	
PHEL85_1936	murein lytic exotransglycosylase, CBM50 domain, GH23 family	3.2.1.n1	GH23 and CBM50(2x)	<i>mltD2</i>
PHEL85_1941	peptidoglycan glycosyltransferase, GT51 family / penicillin binding protein 1A (penicillin-insensitive transglycosylase / penicillin-sensitive transpeptidase)	2.4.1.129/3.4.-.-	GT51	<i>mrcA</i>
PHEL85_1983	sulfatase, S1-16 family		S1-16	
PHEL85_1985	sulfatase, S1-16 family		S1-16	
PHEL85_1986	sulfatase, S1-25 family		S1-25	
PHEL85_1987	alpha-L-fucosidase, GH95 family	3.2.1.51	GH95	<i>afcA1</i>
PHEL85_1988	sulfatase, S1-15 family		S1-15	
PHEL85_1989	polysaccharide lyase, PL1 family		PL1	
PHEL85_1990	glycoside hydrolase, GH43 family		GH43	
PHEL85_1992	glycoside hydrolase, GHnc family		GHnc	
PHEL85_1994	sulfatase, S1-15 family		S1-15	
PHEL85_1996	sulfatase, S1-16 family		S1-16	
PHEL85_1997	sulfatase, S1-15 family		S1-15	
PHEL85_1998	sulfatase, S1-15 family		S1-15	
PHEL85_1999	alpha-L-fucosidase, GH29 family	3.2.1.51	GH29	<i>alfA1</i>
PHEL85_2001	sulfatase, S1-17 family		S1-17	
PHEL85_2002	sulfatase, S1-16 family		S1-16	
PHEL85_2003	sulfatase, S1-16 family		S1-16	
PHEL85_2005	alpha-L-fucosidase, GH29 family	3.2.1.51	GH29	<i>fucA</i>
PHEL85_2007	alpha-L-fucosidase, GH29 family	3.2.1.51	GH29	<i>alfA4</i>
PHEL85_2009	sulfatase S1-15 family		S1-15	
PHEL85_2010	sulfatase S1-22 family		S1-22	
PHEL85_2011	sulfatase, S1-17 family		S1-17	
PHEL85_2055	uncharacterized protein YgaU, CBM50 domain		CBM50	<i>ygaU</i>
PHEL85_2080	unsaturated glucuronyl hydrolase, GH88 family	3.2.1.-	GH88	<i>uglA1</i>
PHEL85_2081	glycosyl hydrolase, GH117 family		GH117	
PHEL85_2083	carbohydrate esterase, CE1 family	3.1.1.-	CE1	

PHEL85_2084	conserved hypothetical protein containing chondroitin AC / alginate lyase domain			
PHEL85_2085	conserved hypothetical protein containing chondroitin AC / alginate lyase domain, PL12 family		PL12	
PHEL85_2087	putative beta-xylosidase, GH30-2 family		GH30-2	
PHEL85_2088	alpha-L-fucosidase, GH29 family	3.2.1.51	GH29	<i>alfA5</i>
PHEL85_2093	sulfatase, S1-17 family		S1-17	
PHEL85_2096	mucin-desulfating sulfatase (N-acetylglucosamine-6-sulfatase), S1-11 family	3.1.6.14,	S1-11	
PHEL85_2099	alpha-L-fucosidase, GH29 family	3.2.1.51	GH95	<i>afcA2</i>
PHEL85_2100	sulfatase, S1-25 family		S1-25	
PHEL85_2102	sulfatase, S1-17 family		S1-17	
PHEL85_2104	putative polysaccharide lyase, PLnc family		PLnc	
PHEL85_2105	beta-xylosidase, CBM35 domain, GH43 family	3.2.1.37	GH43, CBM35	<i>xyfB</i>
PHEL85_2106	beta-xylosidase, GH120 family	3.2.1.-	GH120	
PHEL85_2108	sulfatase, S1-15 family		S1-15	
PHEL85_2111	polysaccharide lyase, PLnc family		PLnc	
PHEL85_2112	polysaccharide lyase, PL17 family		PL17	
PHEL85_2113	sulfatase, S1-28 family		S1-28	
PHEL85_2114	beta-xylosidase, GH39 family	3.2.1.37	GH39	<i>xynB</i>
PHEL85_2115	sulfatase, S1-23 family		S1-23	
PHEL85_2231	carbohydrate esterase, CE1 family	3.1.1.-	CE1	
PHEL85_2370	BNR repeat-containing glycosyde hydrolase, GHnc family		GHnc	
PHEL85_2396	polyprenol phosphate mannose synthase, GT2 family	2.4.1.-	GT2	<i>ppmA</i>
PHEL85_2406	glycogen synthase-like protein, GT5 family	2.4.1.-	GT5	
PHEL85_2455	glycoside hydrolase, GHnc family		GHnc	
PHEL85_2525	glycosyltransferase, GT4 family	2.4.1.-	GT4	
PHEL85_2540	polysaccharide lyase, BACON domain, PL6-2 family		PL6-2	
PHEL85_2584	glycosyltransferase, GT4 family	2.4.1.-	GT4	
PHEL85_2585	putative slime polysaccharide biosynthesis glycosyl transferase, GT2 family		GT2	
PHEL85_2625	glycoside hydrolase, GH74 family		GH74	
PHEL85_2690	carbohydrate binding protein, CBMnc family		CBMnc	
PHEL85_2738	glycosyltransferase, GT83 family	2.4.1.-	GT83	
PHEL85_2813	undecaprenyl-phosphate-N-acetylglucosamine-N- acetylmuramyl-(pentapeptide) pyrophosphoryl-undecaprenol N-acetylglucosamine transferase, GT28 family	2.4.1.227	GT28	<i>murG</i>
PHEL85_2851	glycoside hydrolase, GH113 family	3.2.1.-	GH113	



PHEL85_2856	glycosyltransferase, GT2 family	2.4.1.-	GT2	
PHEL85_2857	glycosyltransferase, GT2 family	2.4.1.-	GT2	
PHEL85_2861	endo-beta-N-acetylglucosaminidase, CBM50 domain, GH73 family	3.2.1.-	GH73, CBM50	
PHEL85_2928	alginate lyase 2, CBM32 domain, PL7-3 family	4.2.2.3	PL7-3, CBM32	<i>alyA2</i>
PHEL85_3026	carbohydrate binding protein, CBM48 domain		CBM48	
PHEL85_3112	alginate lyase, PL6-1 family	4.2.2.3	PL6-1	<i>alyA4b</i>
PHEL85_3115	putative beta-glucuronidase, GH2 family	3.2.1.31	GH2	
PHEL85_3127	lipid-A-disaccharide synthase, GT19 family	2.4.1.182	GT19	<i>lpxB</i>
PHEL85_3137	sulfatase, S1-20 family		S1-20	
PHEL85_3139	sulfatase, S1-16 family		S1-16	
PHEL85_3144	glycoside hydrolase, GH117 family		GH117	
PHEL85_3146	glycoside hydrolase, GH30 family		GH30	
PHEL85_3148	sulfatase, S1-23 family		S1-23	
PHEL85_3149	alpha-L-fucosidase, GH95 family	3.2.1.51	GH95	<i>afcA4</i>
PHEL85_3150	carbohydrate esterase, CE1 family / glycoside hydrolase, GH117 family	3.1.1.-/3.2.1.-	CE1, GH117	
PHEL85_3151	sialate O-acetylerase, CBM17 domain, CE6 family		CBM6, CE6	
PHEL85_3152	glycoside hydrolase, GH117 family		GH117	
PHEL85_3153	probable lipase/esterase, CE10 family		CE6	
PHEL85_3154	sialic acid-specific 9-O-acetylerase, CE6 family		CE10	
PHEL85_3155	glycoside hydrolase, GH117 family		GH117	
PHEL85_3156	N-sulfoglucosamine sulfohydrolase, S1-8 family	3.10.1.1	S1-8	
PHEL85_3158	sulfatase, S1-16 family		S1-16	
PHEL85_3159	alpha-glucosidase, GH97 family	3.2.1.20	GH97	
PHEL85_3160	sulfatase, S1-15 family		S1-15	
PHEL85_3162	carbohydrate binding protein, CBM47 domain		CBM47	
PHEL85_3163	carbohydrate binding protein, CBM47 domain		CBM47	
PHEL85_3164	glycoside hydrolase, GH128 family		GH128	
PHEL85_3165	glycoside hydrolase, GH128 family		GH128	
PHEL85_3166	glycoside hydrolase, GH128 family		GH128	
PHEL85_3167	probable lipase/esterase, CE10 family		CE10	
PHEL85_3168	alpha/beta hydrolase family protein, CE10 family		CE10	
PHEL85_3169	sulfatase, S1-15		S1-15	
PHEL85_3170	beta-galactosidase, CBM35 domain, GH2 family	3.2.1.23	GH2, CBM35	<i>bgaE</i>
PHEL85_3176	beta-galactosidase, GH2 family	3.2.1.23	GH2	<i>lacZ</i>

PHEL85_3177	sulfatase, S1-19 family		S1-19	
PHEL85_3178	alpha-L-arabinofuranosidase, GH43 family	3.2.1.55	GH43	
PHEL85_3203	glycosyltransferase, GT2 family		GT2	
PHEL85_3212	beta-galactosidase, GH2 family	3.2.1.23	GH2	<i>bgaB</i>
PHEL85_3213	carbohydrate binding protein, CBMnc family		CBMnc	
PHEL85_3297	putative peptidoglycan N-acetylglucosamine deacetylase, CE4 family	3.5.1.-	CE4	<i>pgdA</i>
PHEL85_3301	sulfatase		S1-nc	
PHEL85_3398	glycosyltransferase, GT4 family	2.4.1.-	GT4	
PHEL85_3412	glycosyltransferase, GT2 family		GT2	

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