Table 2 Reconstructed sugar utilization pathways and newly assigned genes in *Shewanella* spp

Sugar utilization pathway (subsystem)		Number of genomes	Number of genes	Newly assigned genes			
Carbohydrates	**Abbrev.**			**regulation**	**transport**	**enzymes**	**auxiliary**
Central carbon metabolism	CCM	19	21	-	-	-	-
N-acetylglucosamine, chitin	Nag	18	15	*nagR*	***nagP***, *omp*^{Nag}	***nagB***^{II}, ***nagK,***	*mcp*^{Nag}, *nagX*
Glycerate	Grt	17	3	-	***grtP***	-	-
β-glucosides, cellobiose	Bgl	9	8	*bglR*	***bglT***, *glcP*^{Bgl} *omp*^{Bgl}	***glk***^{II}	-
Sucrose	Scr	8	5	*scrR*^{II}	***scrT***^{II}, *omp*^{Scr}	-	-
Maltodextrins	Mal	14	13	*malR*	*malT*, ***glcP***^{Mal} *omp*^{Mal} (2)	-	-
Arabinose, arabinosides	Ara	6	18	*araR*^{II}	*araUVWZ*, *araT*, *omp*^{Ara}	*araM*, *araY*	*araX*
Galactose, galactosides	Gal	8	10	-	*galP*^{II}, *omp*^{Gal}	-	-
Gluconate	Gnt	4	3	-	-	-	-
N-acetylgalactosamine	Aga	4	8	-	*agaP*, *omp*^{Aga}	*agaA*^{II}, *agaK*, *agaS*	*agaO*
Mannosides	Man	4	14	*manR*^{I}, *manR*^{II}	*manP*^{I}, *manP*^{II}, *omp*^{Man}	*manI*, *manK*	-
Trehalose	Tre	3	6	*treR*^{II}	*treT*, *omp*^{Tre}	*treP*	-
Xylitol	Xlt	2	6	*xltR*	*xltABC*	-	-
Ribose	Rbs	2	6	-	-	-	-
Sialic acids	Nan	1	10	-	*nanP*, *omp*^{Nan}	-	-
Alginate	Alg	1	6	*algR*	*algT*	-	-
Mannitol	Mtl	1	5	*mtlR*^{II}	*mtlP*	*mtlZ*^{II}	*mtlX*
Unassigned	-	19	13	-	-	-	-
Total number:	**17**	**19**	**170**	**11**	**34**	**12**	**5**

Predicted novel functional assignments verified by targeted experiments are marked by bold type and underlined. The details of all functional assignments summarized in this table are provided in additional files 2 and 3.