

**Table S3. Two component regulatory systems and their immediate adjacent genes in *B. longum* subsp. *infantis* ATCC15697**

Sensor kinase	COG	Response regulator	COG	Adjacent genes in cluster	Predicted function of gene cluster
Blon_1774	COG3920	none	N/A	none	N/A
Blon_0067	COG4585	Blon_0066	COG2197	major facilitator superfamily, polysaccharide phosphorylase	polysaccharide degradation
Blon_0244	COG4585	Blon_0243	COG2197	major facilitator superfamily, alpha-fucosidase	fucosylated polysaccharide degradation
Blon_0432	COG4585	Blon_0433	COG2197	major facilitator superfamily	sugar transport
Blon_0464	COG4585	Blon_0463	COG2197	membrane transporter, N-acetyl-beta-hexosaminidase	polysaccharide degradation
Blon_0472	COG4585	Blon_0471	COG2197	Lanthionine synthetase C family, protease II	protein modification
Blon_0482	COG4585	Blon_0481	COG2197	ABC transport-related	unknown
Blon_0500	COG4585	Blon_0501	COG2197	none <sup>2</sup>	N/A
Blon_1047	COG4585	Blon_1048	COG2197	peptidase	protein degradation
Blon_1415	COG4585	Blon_1414	COG2197	none	N/A
Blon_1632	COG4585	Blon_1633	COG2197	alpha amylase	polysaccharide degradation
Blon_1692	COG4585	Blon_1693	COG2197	unknown, transport-related, O-acetylhomoserine sulfhydrylase	cysteine metabolism
Blon_1748	COG4585	Blon_1749	COG2197	DNA excinuclease	DNA replication, repair and recombination
Blon_1857	COG4585	Blon_1858	COG2197	none	N/A
Blon_2169	COG4585	Blon_2170	COG2197	UDP-glucose 4-epimerase	LNB utilization
Blon_0361	COG5002	Blon_0362	COG0745	phosphate transporter	phosphate transport
Blon_0509	COG0642	Blon_0510	COG0745	hypothetical proteins	unknown
Blon_0698	COG0642	Blon_0697	COG0745	Cold shock protein	stress response
Blon_1004	COG0642	Blon_1003	COG0745	none	unknown
Blon_1763	COG0642	Blon_1762	COG0745	alpha amylase	polysaccharide degradation
Blon_1908 <sup>1</sup>	COG0642	none	N/A	Sialic acid-specific 9-O-acetylerase	polysaccharide degradation
Blon_2150	COG0642	none	N/A	none	N/A
none	N/A	Blon_0278	COG0745	Extracellular solute binding protein, endonuclease	unknown
none	N/A	Blon_0965	COG0745	none	N/A
Blon_0216	COG4585	Blon_0215	COG2197	peptidase	protein degradation
Blon_1392	COG4585	Blon_1393	COG2197	hypothetical proteins	unknown
none	N/A	Blon_2277	COG2197	hypothetical proteins	unknown

<sup>1</sup>Pseudogene<sup>2</sup>Two phage integrases localized downstream