

Title	Metagenomic identification of a novel salt tolerance gene from the human gut microbiome which encodes a membrane protein with homology to a brp/blh-family β -carotene 15,15'-monooxygenase
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Table S2. Putative lipocalin motifs in BrpA and its homologues

	LIPOCALIN MOTIF	[DENG]	{A}	[DENQG STARK]	X (0,2)	[DENQ ARK]	[UVFY]	{CP}	G	{C}	W	[FYWLRH]	{D}	[LIVMTA]
<i>Clostridium sp.</i> KLE 1755	NPSRLAGAWYLV	N	P	S	-	R	L	A	G	A	W	Y	L	V
BrpA SMG 6	LFSSMRDSIYLIPS	L	F	S	-	S	M	R	D	S	I	Y	L	I
<i>Prevotella sp.</i> CAG:873	DVHGALHSWWFVP	D	V	H	-	G	A	L	H	S	W	W	F	V
<i>Prevotella buccalis</i> ATCC 35310	VWQGMLDDSLFMF	V	W	Q	-	G	M	L	D	D	S	L	F	M
<i>Prevotella sp.</i> CAG:279	DVHSLHSAWAFVP	D	V	H	-	S	W	L	H	S	W	A	F	V
<i>Prevotella marshallii</i> DSM 16973	PQTDFITSWFLP	P	Q	T	-	D	F	I	T	S	W	S	F	L
<i>Lachnospiraceae bacterium</i> ¹	NPSQMADKWYLV	N	P	S	-	Q	M	A	D	K	W	Y	L	V
<i>Prevotella saccharolytica</i> F0055	PQTDFITSWFLP	P	Q	T	-	D	F	I	T	S	W	S	F	L
<i>Clostridium nexile</i> CAG:348	KPYQFANSSFIIL	K	P	Y	-	Q	F	A	N	S	S	F	I	I
<i>Firmicutes bacterium</i> CAG:24	NALTGRLGDFWNIVP	N	A	L	TG	R	L	G	D	F	W	N	I	V
<i>Firmicutes bacterium</i> CAG:65	GSDRIDGAVSLLL	G	S	D	-	R	I	D	G	A	V	S	L	L

¹strain 3_1_57FAA_CT1

Table S2. A lipocalin motif was found in a homologue of BrpA from *Clostridium sp.* KLE1755. Lipocalin proteins can bind hydrophobic molecules such as carotenoids and retinoids. The top ten BLASTP homologues to BrpA were aligned to compare these protein sequences and identify putative lipocalin motifs. The consensus motif is displayed on the top row of Table 4. Residues that match the consensus are shown in green and mismatches are shown in red