

Supplementary Table 1. Gene analysis summary table for the HMP data set.

Gene analysis which includes WSS and BLAST was conducted for the HMP data set. “+” indicates complete BSAP sequence was observed; “-” indicates no BSAP sequence was observed; “-” with yellow box indicates partial BSAP sequence was observed. Empty white box indicates not applicable due to a no WSS score or WSS score below the cut-off value.

			WSS score (<i>B. vulgatus</i>)	WSS score (<i>B. uniformis</i>)	<i>B. vulgatus</i>	<i>B. uniformis</i>
Dataset	Samples		Cutoff: 95.1	Cutoff: 97.8	BSAP-3	BSAP-2
HMP	S10	a	100	100	+	-
		b			+	-
	S14	a	100	100	-	-
		b			-	-
	S15	a	100	99	+	+
		b			+	+
	S16	a	100	100	-	-
		b			-	-
	S17	a	100	100	-	-
		b			-	-
	S18	a	100	100	-	+
		b			-	+
	S19	a	99	100	+	-
		b			+	-
	S20	a	100	100	+	-
		b			+	-
	S21	a	99	100	-	-
		b			-	-
	S23	a	98	100	-	-
		b			-	-
	S24	a	100	100	+	-
		b			+	-
	S28	a	99	100	-	-
		b			-	-
	S29	a	100	100	+	-
		b			+	-
	S31	a	100	99	-	-
		b			-	-
	S48	a	100	100	-	-
		b			-	-
	S49	a	100	100	-	-
		b			-	-

	S51	a	100	100	+	-
		b			+	-
	S55	a	100	100	+	+
		b			+	+
	S57	a	100	100	+	-
		b			+	-
	S5	a	99	100	-	-
		b			-	-
	S60	a	100	100	-	-
		b			-	-
	S61	a	100	100	+	-
		b			+	-
	S62	a	100	100	-	+
		b			-	+
	S63	a	99	100	-	+
		b			-	+
	S64	a	100	97	-	NS
		b			-	NS
	S65	a	100	100	-	-
		b			-	-
	S66	a	100	100	-	-
		b			-	-
	S68	a	100	100	+	+
		b			+	+
	S69	a	100	100	-	+
		b			-	+
	S70	a	100	97	-	NS
		b			-	NS

Supplementary Table 2. Gene analysis summary table for the Raymond et al.

Gene analysis which includes WSS and BLAST was conducted for the Raymond et al. “+” indicates complete BSAP sequence was observed; “-” indicates no BSAP sequence was observed; “-” with yellow box indicates partial BSAP sequence was observed; “NS” indicates No WSS score observed. Empty white box indicates not applicable due to a no WSS score or WSS score blow the cut-off value.

			WSS score (<i>B. vulgatus</i>)	WSS score (<i>B. uniformis</i>)	<i>B. vulgatus</i>	<i>B. uniformis</i>
Dataset	Samples	Days	Cutoff: 95.1	Cutoff: 97.8	BSAP-3	BSAP-2
Raymond et al. Antibiotics treated samples.	P1	0	94	89	-	+
		7	96	91	-	+
		90			-	+
	P2	0	99	99	-	-
		7	53	53	-	-
		90			-	-
	P3	0	100	100	-	+
		7	34	96	-	+
		90			-	+
	P4	0	97	52	-	-
		7	99	99	-	-
		90			+	-
	P5	0	100	NS	+	NS
		7	100	NS	+	NS
		90			+	NS
	P9	0	100	100	-	-
		7	100	100	-	-
		90			-	-
	P10	0	99	100	+	-
		7	99	98	+	-
		90			+	-
	P11	0	100	100	-	-
		7	89	36	-	-
		90			-	-
	P13	0	96	100	-	-
		7	98	99	-	-
		90			-	-
	P14	0	100	99	-	+
		7	99	100	+	+
		90			+	+
	P15	0	100	100	-	-
		7	99	100	-	-
		90			+	-
	P17	0	100	100	+	-
		7	95	95	-	-
		90			+	-
	P18	0	100	100	-	-
		7	84	100	-	-

		90			-	-
		0	100	81	-	-
		7	100	79	-	-
	P19	90			-	-
		0	100	98	-	-
		7	99	100	-	-
	P20	90			-	-
		0	100	100	-	-
		7	100	97	-	-
	P21	90			-	-
		0	NS	100	NS	+
		7	NS	NS	NS	NS
	P22	90			NS	+
Raymond et al. Control samples	P23	0	100	100	+	+
		7	100	100	+	+
		90			+	+
	P25	0	99	100	+	-
		7	99	100	+	-
		90			+	-
	P38	0	100	100	+	-
		7	100	100	+	-
		90			+	-
	P6	0	100	100	-	-
		7	100	100	-	-
		90			-	-
	P7	0	100	100	-	-
		7	100	100	-	-
		90			+	-
	P8	0	100	100	-	+
		7	100	100	-	+
		90			-	+

Supplementary Table 3. Gene analysis summary table for the Palleja et al.

Gene analysis which includes WSS and BLAST was conducted for the Palleja et al. "+" indicates complete BSAP sequence was observed; "-" indicates no BSAP sequence was observed; "-" with yellow box indicates partial BSAP sequence was observed; "NS" indicates No WSS score observed. Empty white box indicates not applicable due to a no WSS score or WSS score below the cut-off value.

			WSS score (<i>B. vulgatus</i>)	WSS score (<i>B. uniformis</i>)	<i>B. vulgatus</i>	<i>B. uniformis</i>
Dataset	Samples	Days	Cutoff: 95.1	Cutoff: 97.8	BSAP-3	BSAP-2
Palleja et al.	P1	0	100	NS	+	NS
		8	89	NS	-	NS
		42	100	NS	+	NS
		180			+	NS
	P3	0	2	99	-	-
		8	100	20	-	-
		42	100	93	-	-
		180			-	-
	P4	0	35	97	-	+
		8	NS	NS	NS	NS
		42	100	100	+	+
		180			+	+
	P5	0	73	14	-	-
		8	NS	NS	NS	NS
		42	100	100	-	-
		180			-	-
	P6	0	90	NS	-	NS
		8	2	NS	-	NS
		42	96	22	-	-
		180			-	-
	P8	0	100	13	-	-
		8	19	NS	-	NS
		42	100	19	-	-
		180			-	-
	P9	0	24	100	-	-
		8	NS	NS	NS	NS
		42	100	100	-	-
		180			-	-
	P10	0	NS	97	NS	+
		8	NS	NS	NS	NS
		42	NS	100	NS	+
		180			NS	+

	P11	0	99	100	-	-
		8	NS	NS	NS	NS
		42	21	100	-	+
		180			-	+
	P12	0	100	13	-	-
		8	83	10	-	-
		42	100	100	-	-
		180			-	-