

Table S2. EBI Metagenomics formatted sample input data input

a	Acc	Feature	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Sample 7	Sample 8
	IPR000011	Ubiquitin/SUMO-activating enzyme E1	0	0	0	0	0	0	0	0
	IPR000014	PAS domain	699	289	668	137	1364	1254	418	518
	IPR000015	Outer membrane usher protein	11075	13314	1675	8	34255	33647	15053	16385
	IPR000021	Hok/gef cell toxic protein	630	457	82	0	522	505	509	592
	IPR000022	Carboxyl transferase	140	2186	740	3295	556	494	916	593
	IPR000023	Phosphofructokinase domain	1683	954	2041	955	1760	1721	1484	2280
	IPR000026	Guanine-specific ribonuclease N1/T1/U2	15	2	98	14	0	0	2	15
	IPR000031	PurE domain	1426	1189	1832	1690	1240	1244	829	861
	IPR000032	Phosphocarrier protein HPr-like	1511	1988	1164	1007	1650	1685	1549	2244
	IPR000035	Alkylbase DNA glycosidase, conserved site	47	46	0	0	146	111	97	117
	IPR000036	Peptidase A26, ompTn	470	0	0	0	152	100	103	15
	IPR000037	SsrA-binding protein	513	657	735	843	542	511	477	505
	IPR000043	Adenosylhomocysteinase	2	62	46	20	107	102	76	54
	IPR000045	Prepilin type IV endopeptidase, peptidase domain	395	356	225	62	888	898	709	914
	IPR000049	Electron transfer flavoprotein, beta-subunit, conserved site	79	8	0	1	11	13	17	0
	IPR000055	Restriction endonuclease, type I, HsdS	641	583	609	1174	802	860	309	318
	IPR000056	Ribulose-phosphate 3-epimerase-like	1804	2762	3003	2831	1580	1513	2655	2696
	IPR000058	Zinc finger, AN1-type	0	2	0	0	0	0	6	0
	IPR000059	NUDIX hydrolase, NudL, conserved site	64	30	40	4	145	133	91	117
	IPR000060	BCCT transporter family	8085	1115	2664	3735	9349	9267	2328	3560

Supplementary Table 2. EBI Metagenomics formatted sample input data input

b	Taxa	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Sample 7
	Root	1251	1832	1238	2255	1760	1693	1595
	Root;k__Bacteria;p__Acidobacteria;c__Acidobacteria-6;o__iii1-15;f__g__s__	0	0	1	0	0	0	0
	Root;k__Bacteria;p__Actinobacteria;c__Acidimicrobiia;o__Acidimicrobiales;f__C111;g__s__	0	0	1	0	0	0	0
	Root;k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__g__s__	0	9	4	8	0	0	2
	Root;k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__ACK-M1;g__s__	0	0	0	1	0	0	0
	Root;k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Actinomycetaceae;g__Actinomyces;s__	0	13	0	17	0	0	0
	Root;k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Actinomycetaceae;g__Arcanobacterium;s__	0	0	1	0	0	0	0
	Root;k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Actinomycetaceae;g__Varibaculum;s__	0	0	0	2	0	0	5
	Root;k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Actinospicaceae;g__s__	0	0	2	0	0	0	0
	Root;k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Brevibacteriaceae;g__Brevibacterium;s__	0	0	0	0	0	0	0
	Root;k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Cellulomonadaceae;g__s__	0	1	0	0	0	0	0
	Root;k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Cellulomonadaceae;g__Cellulomonas;s__	0	0	0	0	0	0	0
	Root;k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Corynebacteriaceae;g__Corynebacterium;s__	0	36	623	61	0	0	24
	Root;k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Corynebacteriaceae;g__Corynebacterium;s__aurimucosum	0	0	42	0	0	0	0
	Root;k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Corynebacteriaceae;g__Corynebacterium;s__kroppenstedtii	0	0	0	0	0	0	0
	Root;k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Corynebacteriaceae;g__Corynebacterium;s__pilosum	0	0	1	0	0	0	0
	Root;k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Corynebacteriaceae;g__Corynebacterium;s__stationis	0	0	26	0	0	0	0
	Root;k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Dermabacteraceae;g__Dermabacter;s__	0	1	0	0	0	0	0
	Root;k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Microbacteriaceae;g__s__	0	1	0	0	0	0	0
	Root;k__Bacteria;p__Actinobacteria;c__Actinobacteria;o__Actinomycetales;f__Microbacteriaceae;g__CandidatusRhodoluna;s__	0	1	0	1	0	0	1