

Supplemental Table 1 Additional details on cobalt (CbiA) and tungsten (FwdB)-containing peptides expressed in methane seep metaproteomes.

Gene	Locus ID	Sample and Run info	Spectral counts	Sequence coverage	Protein length	Molecular weight (Da)	pI	Adjusted NSAF*	Protein description	Identified Peptide sequence	XCorr	DeltCN	ObsM+H+	CalcM+H+	Charge state
CbiA	BCs_pro_contig_00236_236_1	Hydrate Ridge 0-6cm-Run2	3	14.00%	285	31397	5.2	38.8	cobyrinic acid a,c-diamide synthase	K.ILDIPSGLVINR.S	3.1343	0.2951	1310.6	1310.5797	2
										R.SDMGDSGVKEYAAEGLPILMEIPFDRR.I	3.5048	0.2797	3126.7	3126.5696	3
										K.EGLPILMEIPFDR.R	3.0179	0.3339	1530.6	1530.8224	2
CbiA	BCs_pro_contig_00670_670_1	Hydrate Ridge 0-6cm-Run2	4	15.40%	286	31077	5.1	51.6	cobyrinic acid a,c-diamide synthase	K.AIDFPLNCTCGEWYISDTR.F	2.5371	0.2757	2100	2102.3257	2
										K.GLTCGLGHIPFDQIFTK.A	2.5893	0.3148	1788.2	1791.118	2
										R.KLWGSLSLEKL-	2.9893	0.1817	1189.4	1187.4679	2
CbiA	BCs_pro_contig_00670_670_1	Hydrate Ridge 0-6cm-Run1	3	9.10%	286	31077	5.1	30.5	cobyrinic acid a,c-diamide synthase	K.GLTCGLGHIPFDQIFTK.A	2.5432	0.1866	1790.2	1791.118	2
										R.KLWGSLSLEKL-	2.8409	0.1319	1188.2	1187.4679	2
FwdB	GZ21B5_19	Hydrate Ridge 0-6cm-Run1	2	6.70%	434	47425	6.3	13.4	tungsten formylmethanofuran dehydrogenase subunit	K.SPAIRVNGELK.D	2.5745	0.1752	1186.2	1184.3811	2
FwdB	GZ21B5_19	Santa Monica Basin 8-12cm-Run2	6	10.40%	434	47425	6.3	53.1	tungsten formylmethanofuran dehydrogenase subunit	R.GYAWYNPGEISATDLLIR.Q	2.5744	0.2315	2040	2040.283	2
										K.GFWTEEGKKAK.K	2.5486	0.1386	1280.6	1281.4539	2
										R.GYAWYNPGEISATDLLIR.Q	4.7866	0.475	2038.4	2040.283	2
										R.KLIDSEYPEDEILKR.I	4.2583	0.3787	1977	1978.2065	2
										K.LIDSEYPEDEILKR.I	3.8745	0.4786	1849.2	1850.0325	2
FwdB	GZ21B5_19	Santa Monica Basin 8-12cm-Run1	4	10.40%	434	47425	6.3	40.2	tungsten formylmethanofuran dehydrogenase subunit	K.SPAIRVNGELK.D	2.3441	0.1237	1183.9	1184.3811	1
										K.SPAIRVNGELK.D	2.667	0.1383	1186.4	1184.3811	2
										R.GYAWYNPGEISATDLLIR.Q	3.864	0.3921	2039.5	2040.283	3
										R.KLIDSEYPEDEILKR.I	4.0143	0.3091	1978.8	1978.2065	2
FwdB	GZ21B5_19	Hydrate Ridge 0-6cm-Run2	2	7.80%	434	47425	6.3	17	tungsten formylmethanofuran dehydrogenase subunit	R.GYAWYNPGEISATDLLIR.Q	3.1122	0.2764	2040.2	2040.283	2
										R.KLIDSEYPEDEILKR.I	3.5977	0.3164	1976.8	1978.2065	3

NSAF: Normalized Spectral abundance factor

* Adjusted NSAF values: NSAF values multiplied by 100,000.

Average False Discovery rate (FDR) was 3.6%