

**Table S3.** Average percentage of each amino acid for cold-adapted, mesophilic and thermophilic enzymes. Last three columns indicate the q value of the two-stage linear step-up procedure of Benjamini, Krieger, and Yekutieli.

aa	Cold adapted (%)			Mesophilic (%)			Thermophilic (%)			Cold-adapted vs Mesophilic	Cold-adapted vs Thermophilic	Mesophilic vs Thermophilic
	$\bar{x}$	$\pm$	$\sigma$	$\bar{x}$	$\pm$	$\sigma$	$\bar{x}$	$\pm$	$\sigma$	q value	q value	q value
Ala	10.28	$\pm$	2.7	9.01	$\pm$	2.5	9.72	$\pm$	2.1	0.54024	0.405918	0.866327
Cys	1.12	$\pm$	0.6	1.05	$\pm$	1.0	1.01	$\pm$	0.6	0.89454	0.663848	0.902428
Asp	6.04	$\pm$	1.6	6.28	$\pm$	1.3	5.97	$\pm$	1.3	0.856991	0.75692	0.741512
Glu	2.98	$\pm$	1.4	3.33	$\pm$	1.5	5.29	$\pm$	2.1	0.856991	<b>0.005671</b>	0.033267
Phe	3.39	$\pm$	0.9	3.45	$\pm$	0.8	3.67	$\pm$	0.9	0.89454	0.438019	0.701969
Gly	10.93	$\pm$	1.9	8.84	$\pm$	1.8	8.85	$\pm$	1.1	<b>0.007839</b>	<b>0.003756</b>	0.902428
His	1.67	$\pm$	0.8	1.88	$\pm$	0.9	2.04	$\pm$	1.0	0.856991	0.431052	0.902428
Ile	5.01	$\pm$	1.1	5.55	$\pm$	1.5	4.50	$\pm$	1.6	0.692372	0.681556	0.522053
Lys	3.75	$\pm$	1.7	5.79	$\pm$	2.9	4.14	$\pm$	1.7	0.133615	0.438019	0.500879
Leu	7.55	$\pm$	2.3	7.81	$\pm$	1.8	8.59	$\pm$	1.7	0.856991	0.319242	0.547268
Met	1.81	$\pm$	0.7	1.79	$\pm$	0.7	1.76	$\pm$	0.9	0.932639	0.731372	0.902428
Asn	5.49	$\pm$	1.5	6.04	$\pm$	2.1	4.89	$\pm$	1.8	0.856991	0.552061	0.522053
Pro	4.56	$\pm$	1.9	4.84	$\pm$	2.3	6.17	$\pm$	1.5	0.856991	0.070423	0.522053
Gln	3.28	$\pm$	1.1	3.10	$\pm$	1.1	2.94	$\pm$	0.9	0.856991	0.317612	0.688192
Arg	3.24	$\pm$	1.3	3.47	$\pm$	1.9	4.34	$\pm$	1.7	0.856991	0.149236	0.522053
Ser	8.69	$\pm$	2.2	8.67	$\pm$	2.2	6.04	$\pm$	1.4	0.934224	<b>0.003756</b>	<b>0.008768</b>
Thr	7.50	$\pm$	1.8	6.26	$\pm$	2.4	5.96	$\pm$	1.5	0.395353	0.052582	0.902428
Val	7.72	$\pm$	1.3	6.58	$\pm$	1.6	7.10	$\pm$	1.4	0.138528	0.232439	0.741512
Trp	1.42	$\pm$	0.9	1.63	$\pm$	1.0	2.02	$\pm$	1.0	0.856991	0.13347	0.522053
Tyr	3.57	$\pm$	0.7	4.64	$\pm$	1.2	5.01	$\pm$	1.1	0.039502	<b>0.001852</b>	0.522053

$\bar{x}$ : mean;  $\sigma$ : standard deviation. **In bold** q value < 0.01.