

Table S4. Predicted proteome amino acid content for *Prochlorococcus marinus* CCMP1986 and MIT9313. Data are also presented for the core genome of the two strains (i.e. genes that are found in both organisms).

General Genomic Information			Median ARSC										Median Open Reading Frame Percent Amino Acid Composition													
Genus Species	Strain	Treatment Level	Num Of ORF Analyzed	Median Mass Per Residue	N	C:N	Ala	Cys	Asp	Glu	Phe	Gly	His	Ile	Lys	Leu	Met	Asn	Pro	Gln	Arg	Ser	Thr	Val	Trp	Tyr
<i>Prochlorococcus marinus</i>	CCMP 1986	All	1717	113.007	0.345	8.998	4.97%	1.08%	4.95%	6.71%	4.70%	5.99%	1.29%	9.14%	8.87%	10.57%	1.35%	6.31%	3.54%	2.86%	3.66%	7.62%	4.38%	5.06%	1.10%	2.76%
<i>Prochlorococcus marinus</i>	CCMP 1986	Overlapping	1286	112.681	0.345	8.910	5.04%	1.08%	5.02%	6.72%	4.51%	6.16%	1.34%	9.11%	8.74%	10.53%	1.34%	6.31%	3.61%	2.94%	3.75%	7.61%	4.43%	5.17%	1.09%	2.62%
<i>Prochlorococcus marinus</i>	CCMP 1986	Urea and Glut	18	110.328	0.313	8.888	5.96%	1.16%	4.80%	6.95%	4.77%	7.77%	1.60%	9.36%	7.91%	9.80%	1.76%	5.74%	3.40%	2.76%	3.50%	6.94%	4.56%	5.38%	0.76%	2.50%
<i>Prochlorococcus marinus</i>	MIT 9313	All	2269	109.954	0.373	7.712	9.47%	1.24%	4.93%	5.70%	3.10%	7.61%	2.07%	4.71%	3.27%	12.27%	1.70%	3.03%	5.02%	4.75%	6.41%	6.69%	4.67%	6.70%	1.49%	1.75%
<i>Prochlorococcus marinus</i>	MIT 9313	Overlapping	1286	109.582	0.374	7.601	9.77%	1.23%	5.00%	5.97%	2.89%	7.89%	2.15%	4.58%	2.97%	12.39%	1.72%	2.86%	5.16%	4.73%	6.62%	6.36%	4.66%	7.05%	1.40%	1.69%
<i>Prochlorococcus marinus</i>	MIT 9313	Urea and Glut	18	108.962	0.353	7.747	10.18%	1.30%	4.87%	6.32%	2.65%	8.71%	2.62%	4.92%	2.56%	11.94%	1.51%	2.67%	5.35%	4.61%	5.96%	5.62%	4.82%	7.40%	0.87%	1.40%