

**Table S5a: Marine microbe and PATRIC microbe nonhydrophobic statistical results.** Four groups, marine microbe proteins, PATRIC microbe proteins and transporters for each were analyzed for nitrogen content of nonhydrophobic residues. These data were tested using ANOVA and the multiple comparison test.

		ANOVA results				
Source	SS	df	MS	F	Prob>F	
Groups		1360.7	3	453.558	16266.12	
Error		116064.6	4162468	0.028	0	
Total		117425.2	4162471			
Multiple comparison test results						
Type 1	Type 2	Average 1	Average 2	Significant (p<0.0001)		
Marine microbe genomes	Marine microbe transporters		0.64	0.58	Yes	
Marine microbe genomes	PATRIC genomes		0.64	0.67	Yes	
Marine microbe genomes	PATRIC genome transporters		0.64	0.60	Yes	
Marine microbe transporters	PATRIC genomes		0.58	0.67	Yes	
Marine microbe transporters	PATRIC genome transporters		0.58	0.60	Yes	
PATRIC genomes	PATRIC genome transporters		0.67	0.60	Yes	

**Table S5b: Marine microbe and PATRIC microbe statistical results.** Four groups, marine microbe proteins, PATRIC microbe proteins and transporters for each were analyzed for nitrogen content of residues. These data were tested using ANOVA and the multiple comparison test.

		ANOVA results				
Source	SS	df	MS	F	Prob>F	
Groups		1074.5	3	358.183	37852.82	
Error		39387.5	4162469	0.009	0	
Total		40462	4162472			
Multiple comparison test results						
Type 1	Type 2	Average 1	Average 2	Significant (p<0.0001)		
Marine microbe genomes	Marine microbe transporters		0.35	0.29	Yes	
Marine microbe genomes	PATRIC genomes		0.35	0.36	Yes	
Marine microbe genomes	PATRIC genome transporters		0.35	0.30	Yes	
Marine microbe transporters	PATRIC genomes		0.29	0.36	Yes	
Marine microbe transporters	PATRIC genome transporters		0.29	0.30	Yes	
PATRIC genomes	PATRIC genome transporters		0.36	0.30	Yes	

**Table S5c: Genome comparisons for Prochlorococcus marinus CCMP1986 and MIT9313.** Whole proteomes and core proteomes were tested using ANOVA and the multiple comparison test.

		ANOVA results				
Source	SS	df	MS	F	Prob>F	
Groups		1.5179	5	0.30258	39.92	
Error		50.0961	6588	0.0076	1.45E-40	
Total		51.614	6593			
Multiple comparison test results						
Type 1	Type 2	Average 1	Average 2	Significant (p<0.01)		
Prochlorococcus marinus CCMP 1986 - All	Prochlorococcus marinus MIT 9313 - All		0.35	0.38	yes	
Prochlorococcus marinus CCMP 1986 - All	Prochlorococcus marinus MIT 9313 - Overlapping		0.35	0.38	yes	
Prochlorococcus marinus CCMP 1986 - Overlapping	Prochlorococcus marinus MIT 9313 - All		0.35	0.38	yes	
Prochlorococcus marinus CCMP 1986 - Overlapping	Prochlorococcus marinus MIT 9313 - Overlapping		0.35	0.38	yes	