

**Table S6.** Most abundant OTUs (>1% average relative abundance) and closest cultured relatives determined by BLAST search for the high productivity (HP) bioreactor.

OTU	Average Relative Abundance (%)	Phylum	Genus	Accession No.	% Identity
2	53.76	<i>Cyanobacteria</i>	<i>Phormidium</i>	JN166666.1	100
3	10.56	<i>Proteobacteria</i>	<i>Chelatococcus</i>	NR_025428.1	98
1	4.82	<i>Bacillariophyta</i>	<i>Nitzschia</i>	FJ002224.1	99
4	4.61	<i>Proteobacteria</i>	<i>Wenzhouxiangella</i>	CP012154.1	100
6	2.99	<i>Proteobacteria</i>	<i>Rhodobaca</i>	EU908048.1	100
8	2.88	<i>Bacteroidetes</i>	<i>Owenweeksia</i>	NR_074100.1	90
22	1.97	<i>Bacteroidetes</i>	<i>Brumimicrobium</i>	LT158299.1	92
9	1.55	<i>Verrucomicrobia</i>	<i>Fucophilus</i>	NR_112167.1	96
11	1.46	<i>Proteobacteria</i>	<i>Salinispirillum</i>	NR_134169.1	94
7	1.39	<i>Bacteroidetes</i>	<i>Lewinella</i>	KF228160.1	90
20	1.33	<i>Bacteroidetes</i>	<i>Psychroflexus</i>	KJ782429.2	96
472	1.21	<i>Bacteroidetes</i>	<i>Lewinella</i>	KF228160.1	89