

Table S1: Identification and laboratory culture conditions for four major groups of eukaryotic microalgae: diatoms, dinoflagellates, raphidophytes, and prasinophytes, including taxonomy, size range, distribution, collection location, and culture growth conditions (media, temperature, salinity, and light intensity and duration). Size classes were determined according to Sieburth et al. (1978).

Group	Genus species	Size Range	Ocean Distribution	Collection Region	Media	Temp (°C)	Salinity (psu)	Light Intensity (μE)	Light-dark duration
Diatoms Class Bacillariophyceae	<i>Skeletonema marinoi</i> <sup>a</sup>	Nano-plankton 2-10μm	Primarily coastal and temperate/ polar	Narragansett Bay, Rhode Island	f/2	25, 20, 15	30	55 ± 10	12h:12h
	<i>Thalassiosira rotula</i> <sup>a</sup>	Nano-plankton 10-20μm	Primarily coastal and temperate/polar	Vancouver Island, Canada	f/2	20	30	55 ± 10	12h:12h
	<i>Chaetoceros debilis</i> <sup>a</sup>	Nano-plankton 2-10μm	Primarily coastal and temperate/polar	Narragansett Bay, Rhode Island	f/2	20	30	55 ± 10	12h:12h
Dinoflagellates Class Dinophyceae	<i>Prorocentrum micans</i> <sup>a</sup>	Micro-plankton 30-40μm	Coastal temperate to tropical waters	Narragansett Bay, Rhode Island	f/2-Si	25, 20, 15	30	55 ± 10	12h:12h
	<i>Akashiwo sanguinea</i> <sup>a</sup>	Micro-plankton 20-30μm	Mid-latitude coastal waters	Narragansett Bay, Rhode Island	f/2-Si	25	30	55 ± 10	12h:12h
	<i>Heterocapsa triquetra</i> <sup>a</sup>	Micro-plankton 20-30μm	Coastal temperate waters	Falmouth, Massachusetts	f/2-Si	20	30	55 ± 10	12h:12h
Raphidophytes Class Raphidophyceae	<i>Heterosigma akashiwo</i> <sup>a</sup>	Nano-plankton 15-20μm	Coastal from the poles to the tropics	Narragansett Bay, Rhode Island	f/2-Si	25, 20	30	55 ± 10	12h:12h
	<i>Fibrocapsa japonica</i> <sup>b</sup>	Nano-plankton 10-20μm	Coastal temperate waters	Melbourne, Australia	f/2-Si	20	30	55 ± 10	12h:12h
	<i>Viridilobus marinus</i> <sup>b</sup>	Nano-plankton 5-10μm	Coastal temperate waters	Rehoboth Bay, Delaware	L1-Si	25	27	55 ± 10	12h:12h
Prasinophytes Class Mamiellophyceae	<i>Micromonas commoda</i> <sup>b</sup>	Pico-plankton <2μm	Oceanic/coastal; polar /tropical per clade	West Boothbay Harbor, Maine	f/2-Si	25, 20, 15	30	55 ± 10	12h:12h
	<i>Micromonas pusilla</i> <sup>b</sup>	Pico-plankton <2μm	Oceanic/coastal; polar /tropical per clade	Plymouth, United Kingdom	f/2-Si	25	30	55 ± 10	12h:12h
	<i>Ostreococcus lucimarinus</i> <sup>b</sup>	Pico-plankton <2μm	Oceanic/coastal; polar /tropical per clade	La Jolla, California	L1-Si	20	30	55 ± 10	12h:12h