Chloroplast Fatty Acid Composition in Mediterranean Populations of the Marine Chlorophyte, *Anadyomene stellata*

Debra L. Bemis[a,*,‡], Vassilios Roussis[b], Constantinios Vagias[b], and Robert S. Jacobs[a]

[a] Department of Ecology, Evolution and Marine Biology, University of California, Santa Barbara, California 93106

[b] Department of Pharmacy, Division of Pharmacognosy, University of Athens, Panepistimiopolis, Athens, 157 71, Greece

[‡] Present address: Department of Pharmacology, E-405, Weill Medical College of Cornell University, 1300 York Ave, New York, NY 10021. Fax: (212) 746–8835. E-mail: dlb2004@med.cornell.edu

* Author for correspondence and reprint requests

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Chloroplasts isolated from three populations of the tropical marine Chlorophyte *Anadyomene stellata* collected off the coast of Greece were analyzed for their fatty acid composition. Following the preparation of fatty acid methyl esters, GC-MS (EI) was utilized to identify the fatty acids present in each population. Including isomers, the fatty acid profile of all three algal populations was comprised of 19 fatty acids (4 saturated, 6 monounsaturated, 9 polyunsaturated) with palmitic acid present in the highest amounts (25–27% of total fatty acids). Analysis of variance revealed significant differences amongst the three populations in the percent of total fatty acids for twelve of the fatty acids. High levels of C_{20} PUFAs, an atypical observation in Chlorophytes, were observed in all three populations comprising approximately 17% of total fatty acids. Furthermore a 14:2 PUFA, apparently rare in marine macrophytic Chlorophytes, was identified in significant quantities. Surprisingly, we did not find any of the conjugated tetraene containing fatty acids that we previously identified in the *A. stellata* populations studied from the Florida Keys.