



Dissolved lipid production in the Northern Adriatic (Mediterranean) in response to sea surface warmin

Blazenka Gasparovic (1), Tihana Novak (1), Jelena Godrijan (1), Marina Mlakar (1), Daniela MAric (2), and Tamara Djakovac (2)

(1) Division for Marine and Environmental Research, Ruđer Bošković Institute, POB 180, HR-10002 Zagreb, Croatia, (2) Center for Marine Research (CMR), Ruđer Bošković Institute, G. Paliaga 5, 52210 Rovinj, Croatia

Marine dissolved organic matter (OM) represents one of the largest active pools of organic carbon in the global carbon cycle. Oceans and seas are responsible for half of global primary production. Ocean warming caused by climate change is already starting to impact the marine life that necessary will have impact on ocean productivity. The partition of OM production by phytoplankton (major OM producer in seas and oceans) in the conditions of rising temperatures may considerably change. This has implications for the export of organic matter from the photic zone. In this study, we set out to see how annual temperature changes between 10 and 30 [U+F0B0]C in the Northern Adriatic (Mediterranean) affect production of DOM and particularly dissolved lipids and lipid classes. We have sampled at two stations being oligotrophic and mesotrophic where we expected different system reaction to temperature changes. In addition, we performed microcosm incubations covering temperature range of the NA with nutrient amendments to test whether changes in the available nutrients would reflect those of dissolved OM in the NA. We have selected to work with extracellular OM produced during growth of diatom *Chaetoceros curvisetus* cultures according to the criteria that genera *Chaetoceros* are important component of the phytoplankton in the NA and are often among bloom-forming taxa. Details on the dissolved lipid and lipid classes production as plankton response to rising temperature will be discussed.