



Alpha-tocopherol and ergocalciferol contents of some macroalgae from Bulgarian Black Sea coast

Veselina PANAYOTOVA*^a, Mona STANCHEVA^a and Diana DOBREVA^a

^a Department of Chemistry, Medical University of Varna, 55 Marin Drinov str., Varna, Bulgaria

Abstract The aim of the present study was to determine and compare α -tocopherol and ergocalciferol content in four macroalgae from Bulgarian Black sea coast. *Ulva rigida*, *Cladophora vagabunda*, *Cystoseira barbata* and *Cystoseira crinita* were used for evaluation of corresponding fat soluble vitamins content. The sample preparation procedure includes alkaline saponification, followed by liquid-liquid extraction. Ergocalciferol (vitamin D₂) and α -tocopherol (vitamin E) were analyzed simultaneously using HPLC/UV/FL system (Thermo Scientific Spectra SYSTEM) equipped with RP analytical column. The mobile phase was composed of 97:3 = MeOH:H₂O. Ergocalciferol was monitored by UV detection at λ_{\max} = 265nm, while α -tocopherol was detected by fluorescence at λ_{ex} =288nm and λ_{em} =332nm. Alpha-tocopherol content in algal tissues ranged from 1.68±0.38mg/100g d.w. in *Cladophora vagabunda* to 29.13±1.08mg/100g d.w. in *Cystoseira barbata*. Ergocalciferol was detected only in *Ulva rigida* samples.

Keywords: macroalgae, ergocalciferol, α -tocopherol, HPLC
