

Studies on the Chemical Constituents of Corallinaceous Algae and Other Marine Algae

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Chemical constituents of three Corallinaceous algae (*Corallina pilulifera* Postels et Ruprecht, *Amphora zonata* Yendo, and *Marginisporum crassissimum* (Yendo) Ganesan), collected at Tainoura, Amatsu-Kominat, Chiba, were studied by thin-layer chromatography screening as well as antimicrobial activity assay against *Bacillus subtilis*. These three algae were revealed to have very similar TLC profiles to one another, and EtOAc layers of three algae showed weak antimicrobial activity. The ethyl acetate-soluble fraction of the methanol extract of *Corallina pilulifera* was revealed to contain pigments such as pyropheophorbide a, monoacylglycerol, unsaturated fatty acids, and sterols.

Isolation of microalgae such as diatoms or dinoflagellates from seawater samples collected in Chiba and other places in Japan has been investigated to use the purified microalgae for mass culture in the laboratory and preliminary bioactivity-test screenings. Thirteen diatoms, one blue-green alga, and one dinoflagellate were separated. On the other hand, we also investigated the cultivation of microalgae obtained from the culture collection centers. A 5 α ,8 α -epidioxysterol sulfate was isolated from the cultured diatom *Odontella aurita* (NIES 589), and its structure was elucidated by spectroscopic methods.

We also collected almost 100 kinds of marine algae from Boso Peninsula and preliminary bioactivity-test screenings such as antimicrobial activity test against *Bacillus subtilis* and brine shrimp (*Artemia salina*) toxicity test were carried out. Among them the chemical constituents of *Ishige okamurae*, *Sargassum yamadae*, and *Dictyota dichotoma* were investigated and a phlorotannin (diphlorethohydroxycarmarol), antimicrobial plastoquinone (sargahydroquinonic acid), and galactosyldiacylglycerol, respectively.