# Three New Unsaturated Fatty Acids from the Marine Green Alga *Ulva fasciata* Delile

Ghada S. E. Abou-ElWafa[a], Mohamed Shaaban[b,c], Khaled A. Shaaban[b], Mohamed E. E. El-Naggar[a], and Hartmut Laatsch[b]

[a] Department of Botany, Faculty of Science, Mansoura University, Algomhuria st. 60, El-Mansoura 35516, Egypt
[b] Institute of Organic and Biomolecular Chemistry, University of Göttingen, Tammannstr. 2, 37077 Göttingen, Germany
[c] Chemistry of Natural Compounds Department, Division of Pharmaceutical Industries, National Research Centre, El-Behoos st. 33, Dokki-Cairo 12622, Egypt

Reprint requests to Dr. M. Shaaban. Fax: +202-33370931. E-mail: mshaaba_99@yahoo.com

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From the dichloromethane extract of the marine green alga *Ulva fasciata* Delile, collected from the Mediterranean coast of Egypt, three new fatty acids, namely, (*E*)-11-oxo-octadeca-12-enoic acid (**1a**), (*E*)-11-hydroxy-octadeca-12-enoic acid (**2a**) and 6-hydroxy-oct-7-enoic acid (**3a**) together with cholesterol were isolated. Analysis of the unpolar part of the extract using GC-MS detected the existence of further ten compounds, namely, dimethylsulfoxide, dimethylsulfone, phenylacetamide, 6,10,14-trimethyl-pentadecan-2-one, 8-heptadecene, dodecane, tridecane, 4-oxo-pentanoic acid, hexadecanoic acid, and the naturally new 1,1′-bicyclohexyl. Structures of the isolated compounds **1a** – **3a** were confirmed by spectroscopic analyses including mass spectra (EI-MS, HR/ESI-MS), 1D and 2D NMR experiments, and by the synthetic conversion into their corresponding methyl esters **1b** – **3b**. The algal extract and its components were comparatively examined against several pathogenic microorganisms, and brine shrimps for cytotoxicity.

*Key words:* Marine Algae, *Ulva fasciata*, New Fatty Acids, GC-MS, Biological Activity, Cytotoxicity