



كلية الزراعة

قسم الكيمياء الحيوية



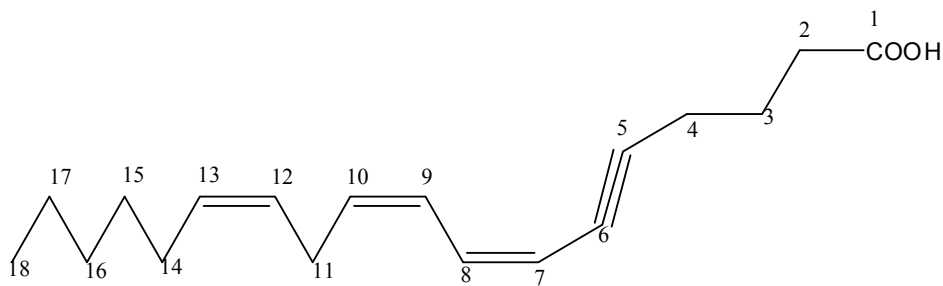
جامعة الفيوم

Isolation and structure identification of a molluscicidal compound from red marine algae *Liagora sp.*

Abstract

Marine organisms have shown to be one of the most promising sources of new bioactive compounds for the treatment of different human diseases. Schistosomiasis is a parasitic disease that affects rural workers or farmers who have had contact with water harboring infected snails, the aquatic gastropod mollusk, *Biomphalaria alexandrina* which is one of the main intermediate hosts of schistosomiasis. The disease currently ranks second to malaria in terms of socioeconomic and public health importance. One way of controlling this disease is by destroying the snails, intermediate hosts, that harbor the developing schistosoma larvae, and thus interrupting the parasite's life cycle. Hence, there are no available reports on molluscicidal natural products from marine organisms; in this study, the extract of red algae *Liagora sp.* exhibited molluscicidal activity against the snail intermediate host of *Schistosoma mansonia*, *Biomphalaria alexandrina* ($LC_{50} = 120$ mg/L).

Bioactivity guided fractionation of this extract by using chromatographic methods led to the isolation of one active compound. The chemical structure of the compound was identified as Octadec-5-yne-7z,9z,12z-trienoic acid by using spectroscopic analysis of its NMR and MS data. This compound exerted molluscicidal activity against *B. alexandrina* with LC_{50} value of 20 mg/L.



Chemical structure of the bioactive compound.