



QUENCHERS AGAINST SINGLET OXYGEN IN SYMBIOTIC BACTERIA OF MARINE SPONGES

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A number of biologically active substances have been isolated from marine sponges. Aromatic carotenoids, such as renierate, isorenieratene, renierapurpurine and others, have only been purified in marine sponges and they showed a strong quenching activities against singlet oxygen. Recently, it has been presumed that these bioactive compounds are not originated in sponges themselves, but in symbiotic microorganisms. On the basis of these view point, we started to screen biologically active compounds from symbiotic bacteria of marine sponges, using the assay system for quenchers against singlet oxygen (1).

Zeaxanthin (4,4'-dihydroxy- β,β -carotene), one of the major carotenoids in marine organisms, was first isolated from symbiotic bacteria of a marine sponge, *Halichondria okadai*. The other symbionts of the sponge were found to produce two novel carotenoids, okadaxanthin [2,2'-bis (4-hydroxy-2-methyl-2-butenyl)- ϵ,ϵ -carotene] and halixanthin [(3R)-1',2'-dihydro-3',4'-didehydro-3,1'-dihydroxy- β,ψ -caroten-4-one], which show strong quenching activities.

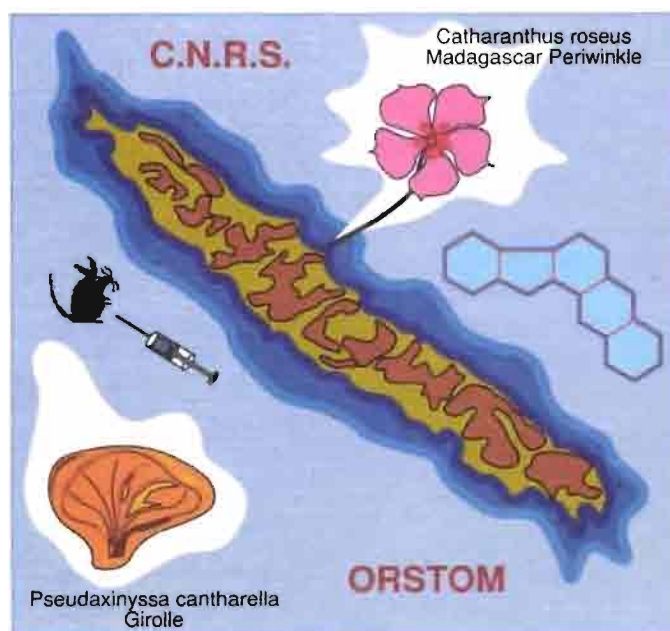
Reference

1. Miki W., *Pure and Applied Chem.* **63**, 141 (1991)

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