

### S55-3 **Research on serach of the carotenoid-producing microorganisms in marine area and the improvement of production ratio**

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Carotenoid are liposoluble pigments distributed widely in the nature. The color of them is from yellow to red with a few exceptions. The research history of carotenoid started at the early of 19 th century. Carotenoid was isolated from paprika (*Capsicum annuum*) at first time, and next it was isolated from *Daucus carota*. Although above 750 carotenoids are isolated from the nature, only few kinds of them are used industrially. Then, production of carotenoid by microorganisms would be expected, but there are few kinds of carotenoid originated from many organisms on land. And there is little knowledge about the carotenoid-producing microorganisms in the oceanic. It has the possibility of discovery on the new carotenoid-producing microorganisms. In the subtropical region there are very strong sunlight. The surface of the sea and coral reefs in this area is a severe environment condition for the growth of microorganisms. While this condition produces reactive oxygen species, the continuing strong irradiation can also lead to damaging and lethal photo-oxidative reactions. Many other undiscovered microorganisms would possess protective mechanisms such as anti-oxidative activity for survival in this environment. On the above mentioned aspect, this study focused on the marine microorganisms around the coral reefs, especially the carotenoid-producing microorganisms possessing anti-oxidative activity. We also searched for carotenoid-producing microorganisms from subtropical ocean areas and identified their characterization.