

## Search for leads of efficient ingredients in functional cosmetics from marine organisms

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In Japan, we have used medicinal plants for the efficient ingredients in functional cosmetics so far. Recently, thalassotherapy has been popular in Japan, and marine algae, dried material of seawater, and marine mud are used for the therapy. However, only a few marine-derived compounds, e.g. pseudopterosin, astaxanthin, chitin, chitosan, and sodium alginate, are used for the efficient ingredients in functional cosmetics. Marine organisms inhabit under strong ultraviolet rays, and they may contain antioxidants, radical scavengers, and ultraviolet-absorbing substances. Since many drug leads were isolated from marine organisms, leads of efficient ingredients in functional cosmetics may also be discovered from marine sources. We screened the DPPH radical scavenging activity of extracts of marine organisms (360 samples) and found that the extracts of 22 samples showed more than 30% radical scavenging activity. The bioassay-guided purification of the extracts of two marine sponges (06M046, 07M105) afforded 4,7-dihydrotribaustine (**1**), epinine-3-*O*-sulfate (**2**), 5-hydroxyindole-3-aldehyde (**3**), 5-hydroxy-3-(2-hydroxyethyl)indol (**4**), 5-hydroxytryptophane (**5**), hyrtioerectin B (**6**), and hyrtiosulawesine (**7**). Their IC<sub>50</sub> values of the DPPH radical scavenging activity were 5.0, 50, 49, 5.2, 9.0, 49, and 9.5 µg/mL, respectively.