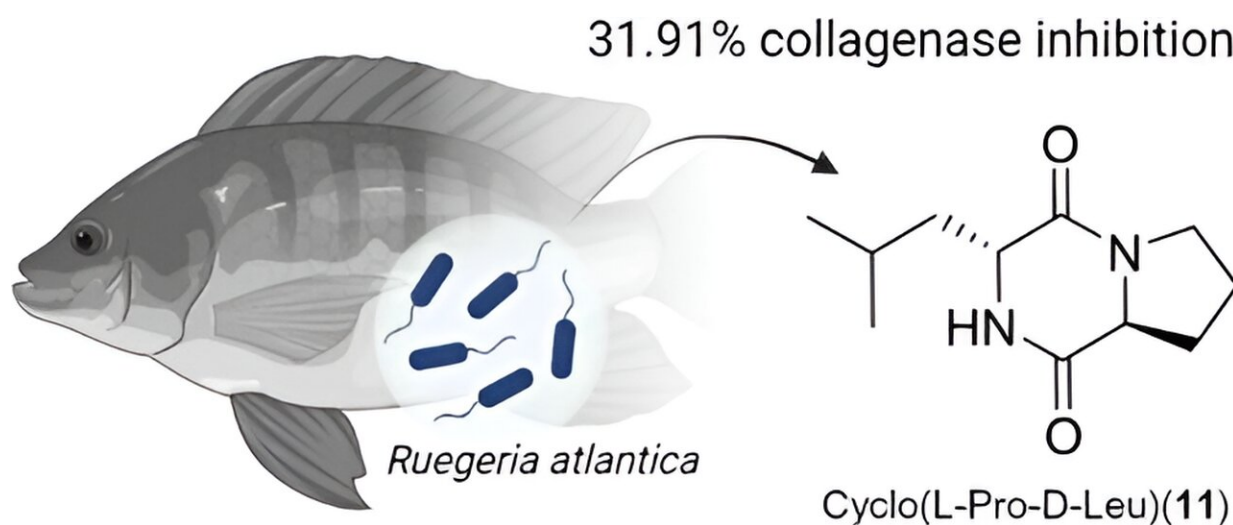


# How fish guts might play a role in future skin care products

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Graphical abstract. Credit: *ACS Omega* (2024). DOI: 10.1021/acsomega.3c09585

There are some pretty strange ingredients in cosmetics and skin care products. One example is snail mucin—also known as snail slime—which is used for its moisturizing and antioxidant properties. But researchers reporting in *ACS Omega* might have found something even weirder to put on your face: [molecules made by fish gut bacteria](#).

In cultured cells, the compounds had skin-brightening and anti-wrinkle properties, making them potential ingredients for your future skin care routine.

Though fish guts might seem like the absolute last place to look for cosmetic compounds, it's not a completely far-fetched idea. Many important drugs have been found in bizarre places—famously, [penicillin's antibiotic properties](#) were discovered after a failed experiment got moldy.

More recently, the brain cancer drug candidate Marizomib was derived from microbes unearthed in [marine sediments](#) at the bottom of the ocean. Two potentially untapped sources of new compounds could be the gut microbes of the red seabream and the blackhead seabream, fish found in the western Pacific Ocean.

Although these [microbes](#) were first identified in 1992 and 2016, respectively, no studies have been performed on the compounds they make. So, Hyo-Jong Lee and Chung Sub Kim wanted to see if these bacteria produce any metabolite compounds that could have cosmetic benefits.

The team identified 22 molecules made by the gut bacteria of the red seabream and blackhead seabream. They then evaluated each compound's ability to inhibit tyrosinase and collagenase enzymes in lab-grown mouse cells. (Tyrosinase is involved in melanin production, which causes hyperpigmentation in aging skin. Collagenase breaks down the structural protein collagen, causing wrinkles.)

Three molecules from the red seabream [bacteria](#) inhibited both enzymes the best without damaging the cells, making them promising anti-wrinkle and skin-brightening agents for future cosmetic products.

**More information:** Jonghwan Kim et al, Collagenase and Tyrosinase Inhibitory Compounds from Fish Gut Bacteria *Ruegeria atlantica* and *Pseudoalteromonas neustonica*, *ACS Omega* (2024). [DOI: 10.1021/acsomega.3c09585](#)

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