

Nature's sunscreen

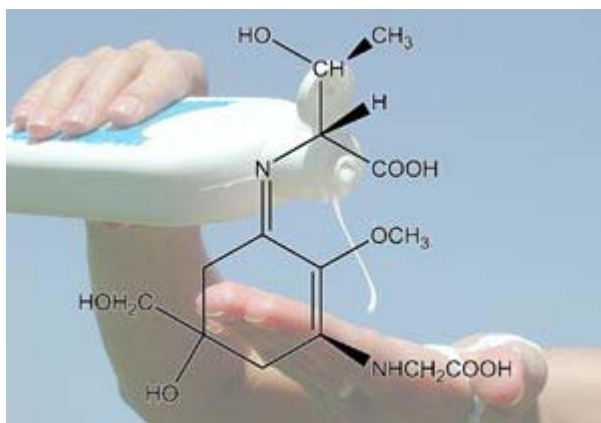
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Aquatic bacteria are a potential source of natural UVA protective sunscreens, say researchers in Israel.

Morris Srebnik at The Hebrew University of Jerusalem and colleagues isolated an amino acid that absorbs ultraviolet radiation, from aquatic bacteria.

Mycosporine-like amino acids (MAAs) are metabolites found in some species of shallow-water-dwelling bacteria. Because these bacteria are normally exposed to high levels of UV radiation, they are unusually tolerant to its damaging effects.

Srebnik's team isolated an MMA called porphyra-334 from the aquatic bacterium *Aphanizomenon flos-aquae*. They compared its UVA absorption with that of commercial sun-care products and found that porphyra-334 provided an equivalent of sun protection factor (SPF) 4 against UVA rays.



Sunscreens are credited with helping to prevent sunburn, skin aging and skin cancer by absorbing and reflecting UV radiation. UV rays of longer wavelength (UVA) are less likely to cause sunburn than those of shorter wavelength (UVB). However, UVA rays are more likely to produce the free radical species that damage DNA, possibly leading to cancer.

Most commercial sunscreen products provide some protection against UVB and short wavelength UVA. But only a few compounds can act as full UVA filters, and many of these are not very stable, said Srebnik.

MAAs absorb mostly in the UVA range, and porphyra-344 can absorb UV energy without the producing harmful reactive species. 'Porpyra-334 can serve as a UVA-protecting sunscreen by providing wide protection against UV radiation,' said Srebnik.

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