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Shoolini University discovers novel bacterial biopigment with germ-killing properties

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The red pigment isolated from this bacterium possesses antimicrobial, antifungal, and skin cell growth stimulating properties



A team of researchers from Shoolini University, Himachal Pradesh, have discovered a psychrophilic bacterial strain, called *Rhodonellum psychrophilum* GL8, at the high altitude Pangong Tso Lake in the Himalayas.

The red pigment isolated from this bacterium possesses antimicrobial, antifungal, and skin cell growth stimulating properties. This novel bio-pigment promises to be useful for the development of antimicrobial smart fabrics, medicated bandage.

The researchers confirmed the novel status of this strain of *Rhodonellum psychrophilum,* which they called 'GL8', through phylogenetic analysis, and subjected the isolated pigment to chromatographic and spectrometric techniques to identify the constituents.

They found that the red pigment extracts contained a mixture of 2-methyl-3-butyl-prodigine, Prodigiosin, 2-methyl-3hexyl-prodigine, 3, 4-Didehydrorhodopsin, anhydrorhodovibrin, alloxanthin and Tetradecanoyl-hexadecanoyl compounds. They further characterized the pigment by testing for bioactive properties. The results revealed that indeed, GL8 is special.

Its broad-spectrum antimicrobial activity makes it perfectly suited for application in the manufacture of smart fabrics with an antimicrobial finish. Additionally, this pigment has anti-oxidant properties, and acts as a bio-enhancer, augmenting the effects of established antibiotics and anti-fungal agents.

The pigment also showed growth stimulating properties of murine skin cells but no toxicity to human cells, which may open avenues for its application in expediting wound healing. The researchers have filed patents based on their discovery