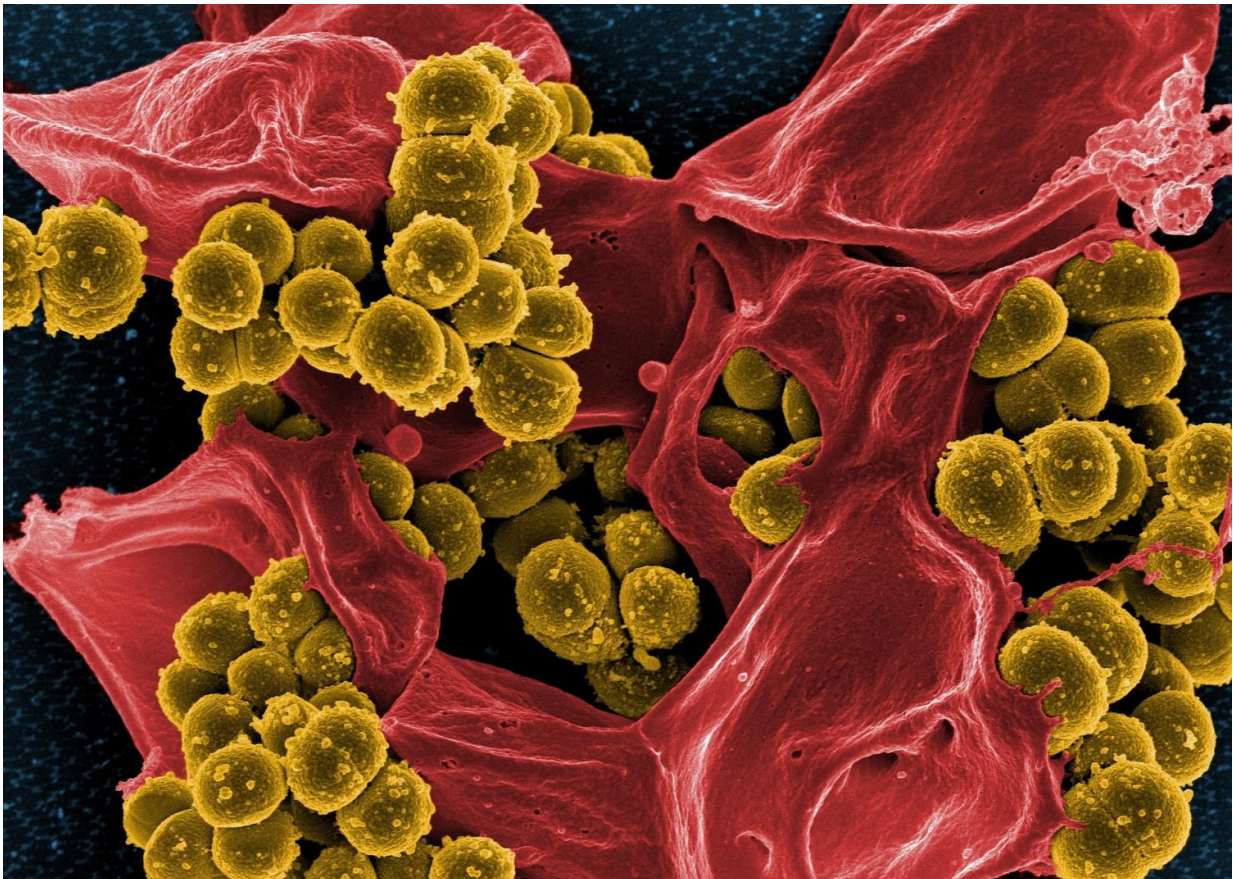


Berberine could treat eczema-exacerbated staph infections, finds study

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Eczema, a skin inflammatory disease that causes dry, itchy and inflamed skin, affects millions worldwide. Eczema is associated with an altered

skin microbiome and higher colonization by *Staphylococcus aureus*.

A study, led at New York Medical by postdoctoral fellow Anish R. Maskey, Ph.D., focuses on the natural compound berberine and its impact on eczema exacerbated by *S. aureus*. The findings, presented at [ASM Microbe](#), shed light on berberine's ability to inhibit *S. aureus* colonization and alleviate eczema symptoms without adverse effects.

Current treatments often fall short—topical antibiotics can give temporary relief, but risk development of antibiotic resistance, and steroid use can potentially result in topical steroid withdrawal (TSW) syndrome. This study makes significant strides toward more effective eczema management using berberine.

The research team conducted comprehensive analyses, including [whole genome sequencing](#) of isolated *S. aureus* strains from eczema patients. The results revealed [resistance genes](#) and toxin-encoding genes, underscoring the urgency for [alternative treatments](#).

Berberine showed anti-inflammatory effects and inhibited mast cell degranulation, a key mechanism in eczema progression, suggesting its potential as a therapeutic agent. Mechanistic insights uncovered berberine's ability to suppress genes associated with inflammatory pathways, and computational modeling identified key targets in the PI3K/AKT pathways.

"Berberine may be a valuable natural product for treatment of multi-drug resistant *S. aureus*-exacerbated eczema due to its antibacterial and anti-inflammatory [effects] and inhibition of mast cell degranulation," Maskey said.

More information: ASM Microbe is the annual meeting of the American Society for Microbiology, held June 13-17, 2024, in Atlanta, Ga.

Provided by American Society for Microbiology

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