

# Kimchi-based preservative used in cosmetics is not so natural

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Some consumer groups concerned about the safety of synthetic preservatives such as parabens have pushed for natural alternatives. Industry has responded with a slew of options, including preservatives

from kimchi, a popular Korean staple made out of fermented cabbage and radish. But scientists are now reporting in ACS' *Journal of Agricultural and Food Chemistry* that at least one commercial, kimchi-based preservative marketed as "all-natural" contains synthetic ingredients.

John C. Vederas and colleagues note that the bacteria responsible for kimchi fermentation do produce some compounds that could block the growth of unwanted microbes in cosmetics. Taking advantage of this antimicrobial trait, some cosmetics companies have replaced synthetically produced preservatives with kimchi fermentation products. They claim that these products can combat a wide variety of microorganisms, including yeasts and molds. But recent research has shown that peptides from kimchi are only active against a limited set of bacteria, and cosmetics require broader protection. So Vederas' team wanted to take a closer look at kimchi-derived commercial products.

The researchers found that certain commercial samples of kimchi fermentation products did block the growth of a wide variety of microbes. But when they tested the contents of the preservative, they discovered that it contained compounds that were most likely produced synthetically. Their analysis also showed that it was these additives that were responsible for the antimicrobial activity of the product, not the kimchi.

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**More information:** "Identification of Didecyldimethylammonium Salts and Salicylic Acid as Antimicrobial Compounds in Commercial Fermented Radish Kimchi" *J. Agric. Food Chem.*, 2015, 63 (11), pp

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