

# Like curry? New biological role identified for compound used in ancient medicine

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Scientists have just identified a new reason why some curry dishes, made with spices humans have used for thousands of years, might be good for you.

New research at Oregon State University has discovered that curcumin, a compound found in the cooking spice turmeric, can cause a modest but measurable increase in levels of a protein that's known to be important in the "innate" immune system, helping to prevent infection in humans and other animals.

This [cathelicidin](#) antimicrobial peptide, or CAMP, is part of what helps our immune system fight off various bacteria, viruses or [fungi](#) even though they hadn't been encountered before.

Prior to this, it was known that CAMP levels were increased by [vitamin D](#). Discovery of an alternative mechanism to influence or raise CAMP levels is of scientific interest and could open new research avenues in nutrition and [pharmacology](#), scientists said.

Turmeric is a flavorful, orange-yellow spice and an important ingredient in many curries, commonly found in Indian, South Asian and Middle Eastern cuisine. It has also been used for 2,500 years as a medicinal compound in the Ayurvedic system of medicine in India – not to mention being part of some religious and wedding ceremonies. In India, turmeric is treated with reverence.

The newest findings were made by researchers in the Linus Pauling Institute at OSU and published today in the *Journal of Nutritional Biochemistry*, in collaboration with scientists from the University of Copenhagen in Denmark. The work was supported by the National Institutes of Health.

"This research points to a new avenue for regulating CAMP gene expression," said Adrian Gombart, an associate professor of biochemistry and biophysics in the Linus Pauling Institute. "It's interesting and somewhat surprising that curcumin can do that, and could provide another tool to develop medical therapies."

The impact of curcumin in this role is not nearly as potent as that of vitamin D, Gombart said, but could nonetheless have physiologic value. Curcumin has also been studied for its anti-inflammatory and antioxidant properties.

"Curcumin, as part of [turmeric](#), is generally consumed in the diet at fairly low levels," Gombart said. "However, it's possible that sustained consumption over time may be healthy and help protect against infection, especially in the stomach and intestinal tract."

In this study, Chunxiao Guo, a graduate student, and Gombart looked at the potential of both curcumin and omega-3 fatty acids to increase expression of the CAMP gene. They found no particular value with the omega-3 fatty acids for this purpose, but curcumin did have a clear effect. It caused levels of CAMP to almost triple.

There has been intense scientific interest in the vitamin D receptor in recent years because of potential therapeutic benefits in treating infection, cancer, psoriasis and other diseases, the researchers noted in their report. An alternative way to elicit a related biological response could be significant and merits additional research, they said.

The CAMP peptide is the only known antimicrobial peptide of its type in humans, researchers said. It appears to have the ability to kill a broad range of bacteria, including those that cause tuberculosis and protect against the development of sepsis.

Provided by Oregon State University

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