

## In cancer fight, a spice brings hope to the table.

Houston Chronicle (Houston, Texas) (via Knight-Ridder/Tribune Business News)  
7/11/2005; Ackerman, Todd

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Jul. 11--The University of Texas M.D. Anderson Cancer Center, the epitome of the conventional cancer establishment, is reporting promising test results on an unconventional weapon: a common spice used in Indian cooking.

In a host of studies, M.D. Anderson researchers are showing that curcumin, the pungent yellow spice in both turmeric and curry powders, has potent anti-cancer properties. They say it may prove effective for both prevention and treatment.

"Curcumin's promise is enormous," said Bharat B. Aggarwal, a professor of cancer medicine in M.D. Anderson's department of experimental therapeutics.

"It appears to inhibit multiple pathways by which cancer grows, and we know it's nontoxic."

Aggarwal added that "in a day when Vioxx and Bextra are off the table, curcumin may be one of the best new hopes on the table" -- a reference to popular painkillers (Cox-2 inhibitors) taken off the market after reports they increased the risk of heart disease. Cox-2 inhibitors were considered potential cancer prevention agents because they'd been shown to inhibit tumor growth.

The latest study on curcumin is available today on the journal Cancer's Web site.

In it, M.D. Anderson researchers demonstrate in the laboratory how curcumin stops melanoma cells from proliferating along two key pathways and induces them to essentially commit suicide. The cells were taken from patients.

A month ago, the same researchers reported that in mice, curcumin helped stop the spread of breast cancer to the lungs. It outperformed the cancer drug Taxol in the study, though the best results came with a combination of curcumin and Taxol.

The results of those studies have led to ongoing Phase I human trials at M.D. Anderson testing curcumin's ability to stop the growth of pancreatic cancer and multiple myeloma.

Still to come are a human trial for breast cancer and an animal trial for melanoma.

Elsewhere, researchers are studying curcumin with lung, colon, head and neck, oral and prostate cancers.

Aggarwal said the thing distinguishing curcumin from other natural products touted for their medicinal properties is the science behind it.

Herbs such as garlic, saw palmetto and ginkgo may receive more ink, but there have been about 2,000 studies on curcumin, says Aggarwal, easily more than any other natural product.

It is rich in antioxidant, anti-inflammatory and anticarcinogenic properties.

Most intriguing, the rate of colon, breast, prostate and lung cancer is 10 times lower in India than

in the United States.

In the melanoma study, the M.D. Anderson team found curcumin shut down nuclear factor-kappa B (NF-kB), a powerful protein known to promote an abnormal inflammatory response that leads to a variety of disorders, including arthritis and cancer; the protein known as IKK that switches NF-kB "on;" and STAT3, another pathway involved in the spread of tumors.

Aggarwal noted that the greatest obstacle to further study of curcumin is financial. No pharmaceutical company is likely to develop a natural product that can't be patented so the only sources of funding are government agencies.

Curcumin is available in capsule form at health food stores, though the purity of some brands may be in question because herbs aren't regulated. Aggarwal's team worked with a 96 percent pure product.

"Curcumin's efficacy for treating cancer is still to be proven," Aggarwal said. "But I would recommend it for prevention right now, based on animal studies. People have been eating it for thousands of years so we know it's safe."

#### IS CURCUMIN THE SPICE OF LIFE?

--Ground from the root of the *Curcuma longa* plant, curcumin is a member of the ginger family.

--It has long had multiple uses in India and other Asian nations: food preservative, folk medicine, coloring agent, body cleanser and food flavorer (2 to 5 percent of turmeric is curcumin, for instance).