

## Spice shows promise as powerful skin disease treatment

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Supplement

**Los Angeles** — Curcumin — the potent yellow spice found in turmeric and curry powders — is effective in treating psoriasis as well as many other skin conditions, according to Madalene Heng, M.D.

Dr. Heng, professor of medicine/dermatology at the University of California, Los Angeles, School of Medicine, has developed curcumin psoriasis and antiaging products sold under the names Psoria-Gold and Re-Juven (OmniCure).

Results of a recent University of Texas study indicate that curcumin effectively halts the growth of, and eventually kills, melanoma cells in culture. Clinical trials also are under way to test the spice's effects on colon cancer, pancreatic cancer, multiple myeloma and breast cancer.

Dr. Heng has already incorporated curcumin treatment into her practice as a treatment for all kinds of wounds, burns, sun-damaged skin, psoriasis, eczema and other inflammatory skin conditions.

According to Dr. Heng, who has published many studies on the topic, it makes sense that curcumin would work on psoriasis.

### Psoriasis trigger

The trigger for psoriasis is an injurious stimulus, which may be a wound, sunburn, allergic reaction or infection (bacterial, fungal or viral). The injury stimulus, usually together with a superimposed bacterial infection, triggers a wound healing response, leading to the generation of T lymphocytes, which generates tumor necrosis factor-alpha, new blood vessels, scar tissue and epidermal proliferation. These healing processes require a source of energy — namely, adenosine triphosphate, or ATP — which is generated from glycogen stores in the cells by phosphorylase kinase, an enzyme secreted five minutes after injury.

According to Dr. Heng, in normal non-psoriatic individuals, there is a switch-off mechanism for phosphorylase kinase, and after the wound is healed, phosphorylase kinase levels return to normal and the energy supply to the inflammatory process is curtailed. This returns the skin to normal except for some post-inflammatory changes such as erythema, scarring and pigmentation.

In psoriatic individuals, the switch-off mechanism for phosphorylase kinase is defective due to a defective Type II cAMP protein kinase linked to a defective gene on the distal end of the 17th chromosome (17q) (Tomfohrde J et al. *Science* 1994;264:1141-1145; Tournier S et al. *J Cell Physiol* 1996; 167:196-203; Sozzi G et al. *Genes Chromosomes Cancer* 1994;9:244-250). Increased phosphorylase kinase levels results in increased phosphorylation reactions, leading to the increased breakdown of glycogen stores to ATP, correlating with an increased epidermal proliferation and psoriatic activity (Heng MCY et al. *Br J Dermatol* 1994;130:298-306).

### Curcumin's effect

"Curcumin, by lowering phosphorylase kinase levels in psoriatic epidermis, has been shown to result in resolution of psoriasis, and achieves this through decreasing the population of Ki-67 cells, i.e., cells capable of dividing, within the epidermis. (Heng MCY et al. *Br J Dermatol* 2000;143:937-949)," she says. "While curcumin-untreated psoriatic controls possess numerous Ki-67 cells, curcumin-treated psoriatic epidermis possess few Ki-67 cells (Heng MCY et al. *Br J Dermatol* 2000;143:937-949). The rapid epidermal turnover associated with

numerous Ki-67 cells results in generation of stratum corneum in four days in untreated psoriatic controls, compared to 60 days in curcumin-treated psoriatics, suggesting that a major defect in psoriatic controls is loss of the epidermal barrier (resembling that of a jellyfish), compared to curcumin-treated psoriatics.

"In our patients, when the epidermal barrier is completely reformed (as shown by the skin appearance returning to normal), it has been observed that all treatment (including curcumin) may be stopped without recurrence of the psoriatic disease."

At this point, Dr. Heng says, there is plenty of preclinical anecdotal evidence showing curcumin's benefits and that it is safe; clinical data is now needed to make the spice a part of mainstream treatment.