

Anti-inflammatory Activity of a Specific Turmeric (*Curcuma longa*) Extract

Background: Turmeric, the powdered rhizome of the herb *Curcuma longa* L. (Zingiberaceae), has been used in Ayurvedic medicine for over 4000 years to treat inflammation, skin wounds and tumors. Turmeric extracts have been reported to have antimicrobial, anti-inflammatory, antioxidant, and anticancer effects. Powdered turmeric, or its extract, is now found in numerous commercially available botanical supplements. The best characterized of the compounds found in turmeric is curcumin, which has been shown to reduce inflammation. While the sites of action and activity of curcumin have been studied, potential anti-inflammatory activity of other compounds in turmeric has not been examined.

Applications:

- *Potential therapeutic agent for the treatment of inflammation to specifically inhibit the production of tumor necrosis factor alpha (TNF- α) and prostaglandin E2 (PGE₂).*
- *Possible dietary supplement to counter other clinical conditions—by having antimicrobial, antioxidant, or anticancer effects.*

Advantages:

- *These turmeric extracts do not appear to inhibit COX-2 mRNA expression, unlike curcumin, or some non steroidal anti-inflammatory drugs that are believed to increase the risk of heart disease due to COX-2 inhibition.*
- *Targets two major cytokines involved in the initiation of inflammation (TNF- α and PGE₂).*

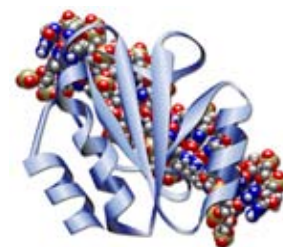
The Technology: A pharmaceutical or nutraceutical composition, comprising a turmeric oil extract obtained by HPLC, is proposed for treatment of arthritis or rheumatoid arthritis. The turmeric oily fractions were tested for anti-inflammatory activity in a human leukemia cell line (HL-60 cells). Combinations of several of the fractions that contain the turmeric oils were more effective than curcumin, or single turmeric fractions, in inhibiting PGE₂. As the extract contains no curcuminoids, it does not affect COX-2 expression.

Lead Investigator: R. Clark Lantz, PhD

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Contact Mike Trammell
trammell@email.arizona.edu



Office of Technology Transfer
888 N. Euclid Ave., Rm 204
PO BOX 210158
Tucson, AZ 85721-0158
520.621.5000
licenses@ott.arizona.edu