

## CURCUMIN – FROM TRADITIONAL MEDICINE TO THE CLINIC

### Summary

Curcumin (diferuloylmethane), a polyphenolic compound derived from turmeric, known as a spice and food-coloring agent, has been used for centuries to treat various illnesses. For the last few decades, extensive work has been done to establish the biological activities and pharmacological actions of curcumin. Curcumin possesses diverse pharmacological activities including anti-inflammatory, antioxidant, antiproliferative, pro-apoptotic and antiangiogenic. It is a well-known chemopreventive agent with potent anticarcinogenic activity in a wide variety of tumor cells. Moreover, it is known for antiarthritic and neuroprotective properties with a big potential role in the treatment of Alzheimer's disease.

Curcumin has an outstanding safety profile and its lack of toxicity has been documented in the Phase I and II clinical trials. Although curcumin is poorly absorbed after ingestion and its low systemic bioavailability seems to limit the potential effects, multiple studies have documented that even low levels of physiologically achievable concentrations of curcumin may be sufficient for its chemopreventive and therapeutic activity against various human diseases. Recently, numerous approaches have been undertaken to improve the bioavailability of curcumin. This review summarizes the pleiotropic effects of curcumin and describes the recently identified molecular targets of curcumin.