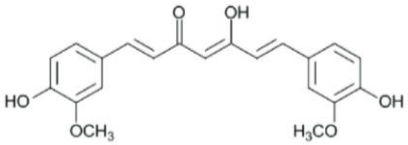
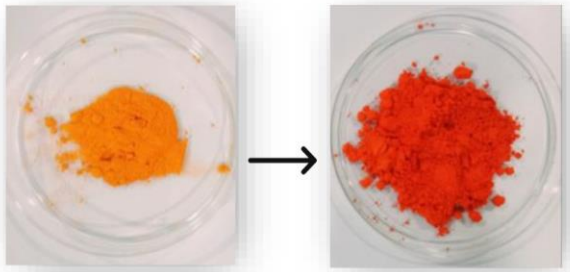



# Nano Curcumin as a Nutraceutical for control of Inflammation in Humans

## Applications

Curcumin, is a polyphenolic molecule present in the rhizome of the *Curcuma longa* and possess a variety of therapeutic properties. Curcumin has anti-inflammatory properties however, due it's poor aqueous insolubility and metabolic instability it has not been used effectively as an anti-inflammatory agent.

The present invention converts natural curcumin into a bioavailable form (nanocurcumin). Therefore, nanocurcumin can be used as an immunomodulator in dietary supplements to control inflammation in humans.



*Natural curcumin* *Curcumin nanoparticles*


### Inventor

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### Categories of this invention

- Therapeutics (Drug Delivery)
- Lifesciences
  - Clinical Applications (Inflammatory Disease, Wound Healing)
  - Biomaterial (Micro/Nanoparticles)


*Nanocurcumin capsules*

## Problem Addressed

Chronic inflammation is a major contributing factor in the pathology of diseases. There is a global need to find a suitable non-toxic molecule as a dietary supplement which can reduce inflammation in humans. Curcumin, a mixture of three natural polyphenolic molecules present in turmeric is an available solution. The problem with natural curcumin is aqueous solubility for delivery of the molecule and its efficacy.

The present technology provides a solution by converting natural curcumin into the nano form without using any carrier thereby demonstrating improved bioavailability. Hence nanocurcumin can be used as food supplement to control inflammation.

## Intellectual Property

Curcumin Nanoparticles and methods of producing the same
Applicant - Prof. Santosh K Kar

Indian Patent (Granted) - 298432

## Technology

- 95% natural curcumin with appropriate certificate of analysis (COA) is used as a starting material to generate curcumin nano particles following a known protocol.
- Particle size is determined by a high resolution TEM. Curcumin nano particles are tested for the absence of acetone, heavy metals, toxin and other contamination before being used for animal toxicity assays.
- The process generates curcumin nanoparticles of ~ 200nm of size determined by Transmission Electron Microscopy and Dynamic Light Scattering methods.

## Advantages

- Enhanced bioavailability and bio-efficacy.
- 95% Nanocurcumin with no additives => Suitable for long term human consumption.
- Does not interfere with the treatment regimen
- Non-Toxic
- Cost Effective (1/5th of the cost of the commercially available curcumin supplement)

## Potential Value

1. Global anti-inflammatory therapeutics market growth is CAGR of 8.5% during 2016-2026.
2. Therapeutic properties of nano curcumin can be useful for viral diseases, dental problems and arthritic conditions.
3. Nanocurcumin based product can be given to working population for treating fatigue.


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