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Enriching Quality of Life

Chenland Nutritionals, Inc.

Most Potent and Water Soluble

Curcumin 60%

High Curcumin Loading
High Dispersibility in Water
High Absorption Rate

Patent No.202010055763.1

CUMINUP60

WhitePaper

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Introduction

Why should we advance the bioavailability of curcumin?

Curcumin is a natural hydrophobic polyphenol extracted from the rhizome of the herb *Curcuma longa*. Curcumin has a wide range of biological and pharmacological activities, such as anti-inflammatory^[1], antioxidant^[2], anti-tumor^[3], liver protection^[4]. Its application history has exceeded 4000 years^[5], and it has been listed as third generation anticancer chemoprophylaxis by the national cancer institute of the United States^[6].

However, the poor solubility in water^[7], instability at physiological and alkaline pH^[8] and rapid metabolism^[9] result in the low oral bioavailability (OB) of curcumin and thus limit its applications.

Various strategies have been explored to increase the OB of curcumin by using curcumin-phospholipid complex^[10], polymeric micelle^[11,12], liposomes^[13], microemulsion, nanoemulsion, self-emulsifying drug delivery systems (SEDDS)^[14,15], nanoparticles^[16] and OB enhancers like piperine^[17]. Although these methods can increase the OB of curcumin to some extent, complicated processes and low drug loading capacities are common problems. Furthermore, the excipients currently used have irritation to gastric mucosa (such as some absorption promoters and a large number of surfactants in microemulsion/nanoemulsion/ SEDDS). Therefore, further research and improvement are needed.

At present, curcumin is widely used in dietary supplements,

food and other industries. People are looking for a new solution with high curcumin content, high bioavailability and strong stability to meet the demand for product development.

To solve the problem of low curcumin absorption, we have worked with both Prof. Min Han in Zhejiang University, China and the team of Prof. Zhen Zhao in Cornell University, USA to develop the micron Co-Grinding Solvent Free process (CGSF technology). We use CGSF to prepare CuminUP60®.

