

Curcumin 101: LEARNING HOW TO MAKE THE BEST CURCUMIN SUPPLEMENT FOR YOUR HEALTH

A striking clinical case was published in *BMJ Case Reports* in 2018 of Dienneke Ferguson, 67, who beat her deadly blood cancer when she started taking a daily dose of curcumin. Doctors said that, despite having no further treatment, her condition had remained stable for the last five years.^[1] The news instantly made curcumin a global hit with dietary supplements, functional foods, beverages and even cosmetics industries introducing curcumin into their products. Today, curcumin holds a dominating presence in the market worldwide.

Curcumin's research background stems prior to the 1990's. Curcumin's main component, turmeric, is thought to be a potential component of its health-promoting properties. With a testing history of more than 120 clinical trials, curcumin also has a long history of use in traditional medicines of China and India including treatment of inflammatory, skin, and hepatic diseases. Nowadays, more medical research has shown that curcumin has additional beneficial properties including antioxidant and chemotherapeutic activity.^[2]

However, there are some setbacks to Curcumin's all-reaching benefits. Research has found that curcumin itself displays poor solubility in water and chemical instability. Despite its efficacy and safety, the therapeutic potential of curcumin is debated due to its relatively poor bioavailability in humans, even when administered at high dosage (12 g/day).^[3]

Scientific research institutions around the world are racing to figure out how to fine-tune the molecule to develop a highly absorbable curcumin product. Chenland looks to join this race in our pursuit of providing the best innovative health solutions. CuminUP60[®], is our brand ingredient utilizing Patent Pending CGSF technology, and is the premium solution to Curcumin's low bioavailability. Usage of the Co-Grinding Solvent Free process provides an eco-friendly and sustainable solvent-free method to produce CuminUP60[®], incorporating high purity curcuminoids to significantly improve curcumin water solubility and bioavailability.

Chenland's premier mission is to provide natural and effective ingredients and continuously advance to discover safe, natural, and effective ingredients that benefit human health across the globe. Our innovative brand ingredients are made to meet the increasing demands of natural health that are scientifically backed to be safe and effective.

References:

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2. Gupta, S., Patchva, S., & Aggarwal, B. (2013, January). Therapeutic roles of curcumin: Lessons learned from clinical trials. from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3535097/>
3. Anand P, Kunnumakkara A.B., Newman R.A., Aggarwal B.B. Bioavailability of curcumin: Problems and promises...: Full Text Finder Results. *Mol. Pharm.* 2007;4:807-818. doi: 10.1021/mp700113r. [PubMed] [CrossRef] [Google Scholar]




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An innovative technology to enhance curcumin bioavailability

1. An innovative technology - CGSF, to solve the problem of curcumin absorption

Curcumin is a polyphenolic natural antioxidant with various pharmacological activities such as anti-inflammatory, antioxidant, anti-tumor, liver protection. However, due its poor absorption and low bioavailability it is often difficult to work with.

To solve this problem, Chenland R&D team conducted a series of technical research to maximize curcumin efficiency and obtained these results. We selected high-quality curcumin (≥ 95%) from India as the starting material and created the patented micron Co-Grinding Solvent Free process through modern preparation technology to increase the curcumin absorption content of CuminUP60® to 60%.

We blended curcumin and food grade excipient through patented CGSF technology without the usage of solvents nor separation technology. The process avoided pollution and waste, in addition to following green environmental protection and low-carbon sustainable production. The product CuminUP60® established higher curcumin absorption rate and increased solubility based on CGSF technology.

The insoluble curcumin was wrapped in the hydrophobic core of our

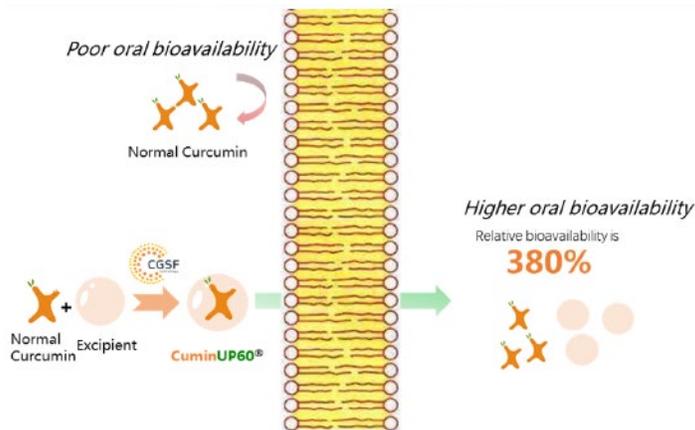


Fig 1 CuminUP60® increased the bioavailability based on patent CGSF technology

preferred excipient. The hydrophilic shell of excipient was compatible with water and assembled into a nano-micelle structure of “hydrophobic core-hydrophilic shell” in water, increasing the solubility of curcumin. It could quickly form a gel in vivo and stick to the action site, delay the release of curcumin, and further increase the curcumin blood concentration along with bioavailability.

2. Scientific evidence

CuminUP60® could disperse in water better than normal curcumin, showing higher solubility. The experiment showed that the dissolution rate of CuminUP60® curcumin exceeds 80% at 20min.



Fig 2 CuminUP60® showed higher solubility than normal curcumin.

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Pharmacokinetic results in vivo showed that the oral bioavailability of CuminUP60® significantly improved by oral administration. Compared with normal curcumin and other brand curcumin in the market, CuminUP60® presented higher bioavailability.



Fig 3 CuminUP60® showed higher bioavailability than other brands.



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