

Neo curcumin ODT supplement - a dietary supplement in the form of orally dissolving tablet (ODT) containing high-bioaccumulation curcumin

Neo curcumin ODT supplement is a revolutionary dietary supplement with curcumin in the form of orally dissolving tablets (no water needed) boasting its own **scientific study**.

The combination of innovative turmeric processing in the form of submicron particles, addition of lecithin with piperine and ODT formulation results in **increased bioavailability**. More than **200x increased solubility and high cellular absorption** of curcumin was confirmed by test method of fluorescence spectroscopy

Study results:

- With an innovative process involving the reduction of curcumin particles to submicron dimensions and particle size control, in combination with lecithin and piperine, **up to 220 times increased solubility and 200 times higher curcumin cellular absorption were achieved.**
- **ODT** ensure rapid absorption and high efficacy of curcumin by eliminating the **unwanted first-pass effect**.
- The first-pass effect, or the first pass of the liver, is common in classical tablets where the active substance passes through the digestive tract and subsequently the liver, being largely degraded or converted into ineffective substances - thereby reducing the effectiveness of the administered dose.
- **There is no first-pass in ODT** - the active substance **is absorbed already in the oral cavity and the upper esophagus, making it more effective** even at low doses.
- The active substance is needed at a faster and more concentrated concentration - which ensures a **much stronger and faster onset of action**.

- **Patented solution** (submission of application in May 2017)
- **Only one market product containing turmeric in the form of ODT**
- The product was developed within the framework of research and development cooperation between mcePharma s.r.o. and BIOCEV (Biotechnology and Biomedical Center of the Academy of Sciences and Charles University in Vestec).
- Made from **natural materials** - Neo curcumin supplement contains highly absorbable turmeric submicron particles, piperine and lecithin
- **Active Ingredient Content** - The tablets contain 3 mg of curcuma extract containing 95% curcumin
- **Recommended dosage** - 2 tablets daily, in the morning and in the evening let loose freely in the mouth
- Also suitable for vegans and vegetarians

Scientific study

Curcumin is almost insoluble in its native form in the human body - it dissolves only in organic solvents such as ethanol, acetone and dimethyl sulfoxide. Increased solubility and cellular absorption was achieved using a sophisticated process that involves reducing and controlling the size of the curcumin particles, enriched with sunflower lecithin and piperine at a suitable ratio, and final ODT treatment for maximum user comfort.

Introduction

Curcumin is a yellow dye that can be isolated from turmeric (*Curcuma longa*) or Indian saffron. It is the biologically most active component of turmeric and has recently received a lot of attention - a large number of scientific studies focused on curcumin suggests that this extract could have many positive effects on human health. Curcumin is the subject of intensive research, scientific studies point to health benefits, for example, in the following areas:

- Prevention of cancer and prevention of the growth of already existing tumors and metastases^{1,2,3,4,5}
- Prevention and retardation of the development of Alzheimer's and Parkinson's disease^{6,7,8,9,10}
- Anti-inflammatory and analgesic effects^{11,12,13,14,15}
- Limitation of free radicals at the cellular and organ level^{16,17,18,19,20}

One of the problems associated with curcumin is its bioavailability. Even at high doses of curcumin administered orally in native form, only a small amount is brought into circulation, due to the very fast metabolic transformation in both the liver and the intestinal wall. Within the research and development cooperation between mcePharma s.r.o. and BIOCEV (Biotechnology and Biomedical Center of the Academy of Sciences and Charles University in Vest), an increased solubility and cellular absorption of curcuma and curcumin as an active substance for ODT use was achieved.

The following parameters were evaluated in the scientific study:

1. Increased cellular absorption was tested on human fibroblasts, human breast cancer cells and osteosarcoma.

Procedures:

After one hour of incubation of the cells with curcumin, the presence of fluorescence in the cells was measured.

Results:

The results of this test showed, that cells that were incubated with submicron particles of curcumin that were combined with sunflower lecithin and piperine and incorporated as ODT were absorbed up to 200 times more efficiently. Selected cell cultures show a strong green fluorescence indicating a high rate of curcumin absorption administered to cells compared to cells incubated with native turmeric contained in commonly available dietary supplements (**Figure 1**)

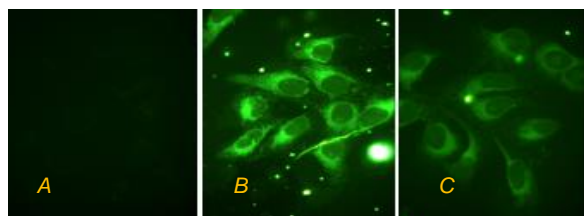


Figure 1: comparison of fluorescence of fibroblast cultures after incubation of different forms of curcumin (A – native curcumin, B – curcumin with decreased particle size, C – Neo curcumin ODT supplement)

2. The solubility improvement was tested by fluorescence spectroscopy

Procedures:

Individual samples were dispersed or dissolved in water, then the intensity of fluorescence was measured over time (over 1 hour).

Results:

The results of this test confirmed that curcumin in the form of Neo curcumin ODT supplement showed significantly greater fluorescence (Figure 2) and therefore solubility (according to generally valid formulations up to 220 times better solubility) compared to the native form of curcumin.

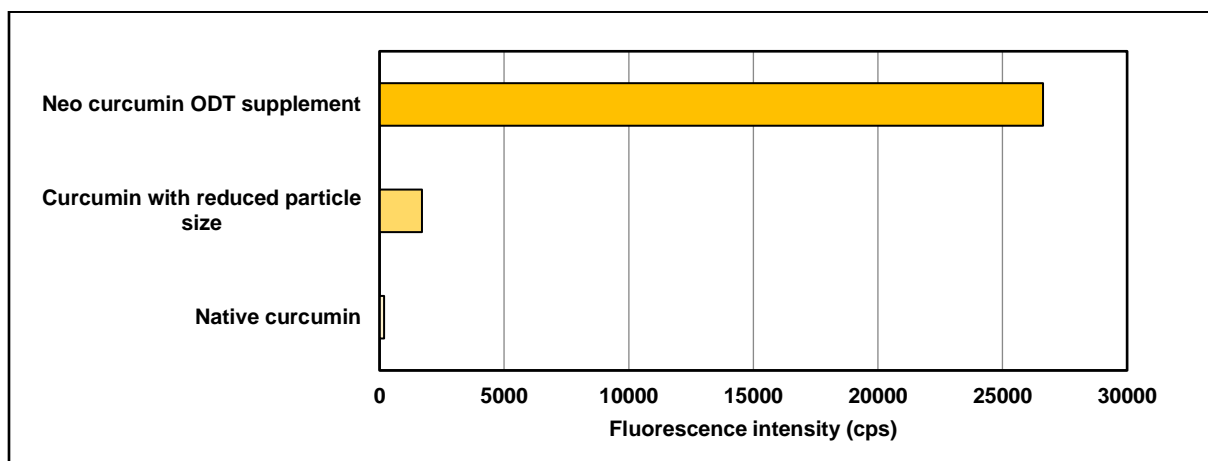


Figure 2: Fluorescence intensity comparison of different forms of curcumin (cps – counts per second, min – minutes)

The results showed increased curcumin solubility - up to 220 times higher in the form of Neo curcumin ODT supplement versus native curcumin contained in commonly available dietary supplements (Figure 2).

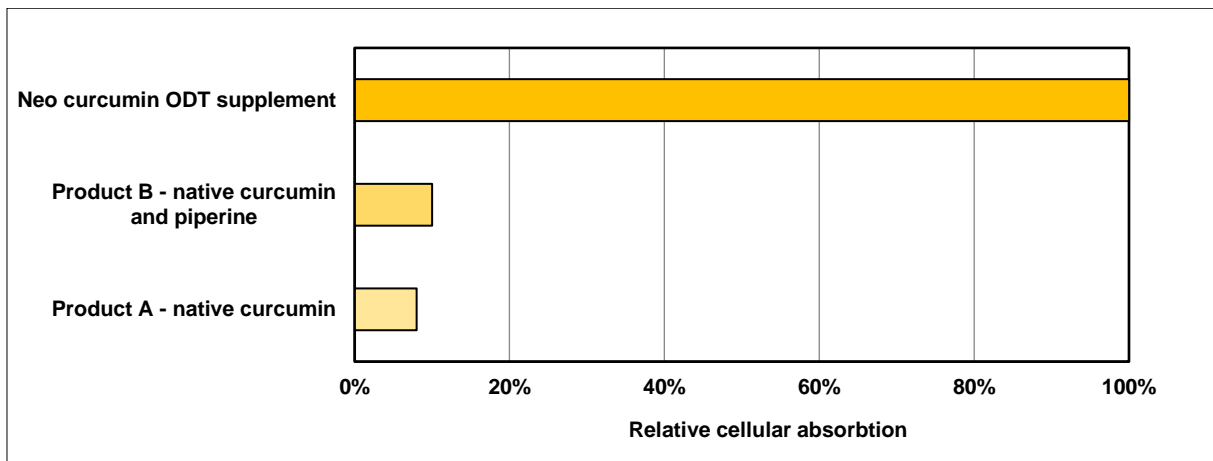


Figure 3: Comparison of cellular absorption of Neo curcumin ODT supplement and two products containing native curcumin

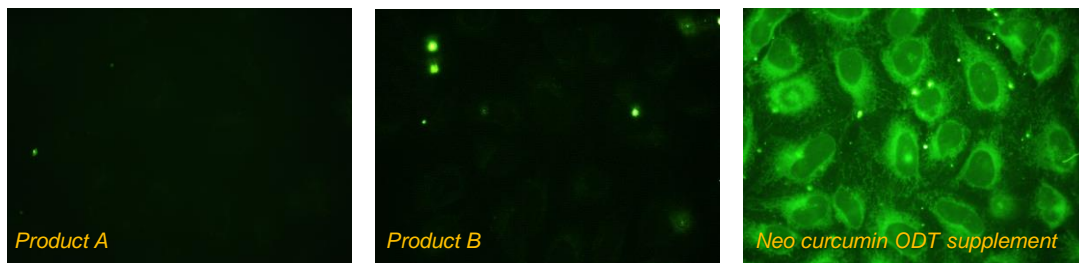


Figure 4: Images of cell cultures inoculated with product A, B-containing turmeric products in the native state and Neo curcumin ODT supplement. Turmeric from products A and B is incapable of penetrating the cells. Curcumin from Neo curcumin ODT supplement is more absorbed by cells. (Source: BIOCEV)

Neo curcumin ODT supplement in fast dissolving tablets show better solubility (**Figures 1 and 2**) compared to native turmeric contained in commonly available dietary supplements. The results of a scientific study conducted by the BIOCEV Center have confirmed that Neo curcumin ODT supplement in fast dissolving tablets have higher cellular adsorption than curcumin in native form in commonly available formulations. (**Figures 3 and 4**).

Contraindication

Do not take Neo curcumin ODT supplement in combination with blood thinners (anti-aggregating / anti-coagulant). Take special care if you have type 1 or 2 diabetes.

Conclusion:

Neo curcumin ODT supplement has been developed as part of research and development co-operation between mcePharma s.r.o. and BIOCEV (Biotechnology and Biomedical Center of the Academy of Sciences and Charles University in Vest). The combination of innovative turmeric in the form of submicron particles, addition of lecithin with piperine and ODT formulation results in increased bioavailability - **up to 220 times increase in solubility and 200 times higher cellular absorption of curcumin** have been demonstrated.

Published 2nd May 2017 in cooperation:

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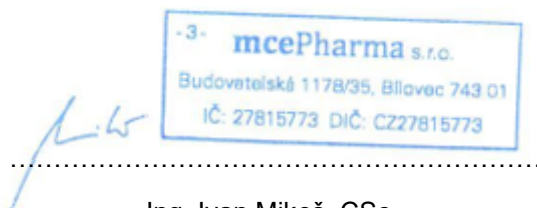
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