

## CurcuWIN™ Supplementation to Support Liver Function and Detoxification

During the process of detoxification, antioxidant protection against reactive oxygen species (ROS) and a sufficient supply of substrates, like glutathione are necessary for efficient processing and elimination of toxins. If free radical production outpaces antioxidant support or substrates are not recycled efficiently, liver detoxification is hindered. Turmeric, and its active compounds, the curcuminoids, continue to garner attention of numerous clinical studies and among these is its ability support liver health through its effects on supporting liver detoxification.

Several reports have documented the potent antioxidant capacity of curcumin whereby mitigation of lipid peroxidation and oxidative stress in several tissues was observed. Part of curcumin's antioxidant effect is due to its ability to modify antioxidant enzymes such as SOD, catalase and glutathione peroxidase. Curcuminoids can interact with glutathione and enhance its activity and the ability of curcuminoids to induce phase 2 detoxification enzymes partly explains curcuminoids' chemoprotective action. Taken together, there is evidence to suggest that turmeric, and ingredients like CurcuWIN™ can help support healthy liver function and detoxification.

A study using CurcuWIN™ demonstrated hepatoprotective effects due to its antioxidant activity and ability to enhance natural antioxidant systems. CurcuWIN™ has also been shown to increase glutathione and superoxide dismutase (SOD) levels and maintain liver enzymes within normal, healthy levels. The capacity of CurcuWIN™ to support healthy liver function stems from the profile of curcuminoids naturally found in turmeric.

Poor bioavailability of curcumin limits its nutritional supplement applications. To overcome its limited bioavailability, many forms of curcumin have been brought to the market with enhanced absorption. A 2014 study published in *Nutrition Journal* demonstrated 46 times greater bioavailability of CurcuWIN™ over regular curcumin and superior bioavailability compared to leading market formulations claiming enhanced absorption. When studied against phospholipid-based liposomal curcumin, CurcuWIN™ showed increase absorption up to six times greater. Dosage of curcuminoids ranges from 80 mg to 150 mg, which correlates to 400 mg to 750 mg of CurcuWIN.™

### References:

1. Nabavi et.al., *Comprehensive Reviews in Food Science and Food Safety*, Vol 13; 2014.
2. Adams et.al. A Novel Synthetic Curcumin Analog Induces Apoptosis in Cancer Cells Via a Redox-Dependent Mechanism. *Anti-Cancer Drug* 16(3); 263-75.
3. Pullakhandam et.al. Binding and Stabilization of Transthyretin by Curcumin. *Arch Biochem Biophys* 495(2): 115-9.
4. Juturu et al., *The FASEB Journal* vol. 29 no. 1 Supplement 924.5 April 2015.

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