

## **Biological Activity of Crocin**

Crocin has anti-inflammatory and anti-apoptotic effects against gastric ischemia-reperfusion injury in rats, the effect of Crocin is mainly mediated by reducing the protein expression of iNOS and caspase-3.

- Crocin can ameliorate CCl<sub>4</sub>-induced liver injury via inhibition of inflammatory cytokines, caspase3 and oxidative stress along with modulation of liver metabolizing enzymes favoring elimination of CCl<sub>4</sub> toxic metabolite.
- Crocin has antihyperlipidemic effect, may be due to the inhibition of pancreatic lipase and Crocin, and its metabolite, Crocetin, can improve hyperlipidemia.
- Crocin has antidepressant effects by increasing CREB, BDNF and VGF levels in hippocampus.
- Crocin alleviates some ethanol-induced impairments of learning and prevents ethanol-induced inhibition of hippocampal long-term potentiation (LTP), a form of activity-dependent synaptic plasticity that may underly learning and memory. Related CNS effects are specific to the digentiobiose ester; Crocetin gentiobiosylglucosyl ester is half as potent, and the diglucose ester has no effect at all.