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Nigella sativa L. and Its Bioactive Constituents as Hepatoprotectant: A Review

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Abstract

The pharmacological properties of *Nigella sativa* L. are well attributed to the presence of bioactive compounds, mainly, thymoquinone (TQ), thymol (THY) and α hederin and their antioxidant effects. TQ, THY and alpha-hederin (α -hederin) provide protection to liver from injury via different mechanisms including inhibition of iron-dependent lipid peroxidation, elevation in total thiol content and (GSH) level, radical scavenging, increasing the activity of quinone reductase, catalase, superoxide dismutase (SOD) and glutathione transferase (GST), inhibition of NF- κ B activity and inhibition of both (COX) and (LOX) protects liver from injuries. Review and Conclusion: The main aim of this literature review is to reflect the relevant role of ROS in inducing hepatic diseases and also the preventive role of *N. sativa* L. in hepatic diseases. The present article is directed towards highlighting the beneficial contribution of researchers to explore the pharmacological actions with therapeutic potential of this precious natural herb and its bioactive compounds pertaining to the hepatoprotective effects. We systematically searched for research literature through well-framed review question and presented the data in the tabular forms for the convenience of the readers. Two hundred and forty-one papers were embodied in this review, oxidative effect and the reactive oxygen species (ROS) are known to be the major causes of many diseases such as hepatic cancer. Many drugs and chemicals have shown to incite oxidative damage by generation of ROS in the body. Therefore, this review intends to focus the role of ROS in liver diseases and the mechanisms through which *N. sativa* prevents hepatic diseases. The mechanisms by which *N. sativa* impede progression in chronic liver diseases should be used as a preventive medicine in patients with hepatic disorders.

Keywords: *Nigella sativa* L.; antioxidant; bioactive compounds; hepatocarcinoma; hepatoprotective; reactive oxygen species..

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