

Original Article

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The Cytotoxic Effects of *Datura Stramonium* Plant on Liver in Laboratory Rats

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Abstract

The goal of this study is to demonstrate the pathological effects of *Datura* extract on liver tissue as well as some physiological, biochemical, and haematological indicators in laboratory rats. When the animals were given the *Datura* plant filtrate, which contains many special and effective compounds, it caused histopathological changes in the liver tissue, such as dilatation and congestion in the central vein, expansion and congestion in the sinusoids, severe fatty infiltration in the liver cells, necrosis of the hepatocytes, endothelial cell necrosis, and vacuolar degeneration in large areas of the liver compared to the control. The current study found a significant reduction in blood and biochemical parameters when compared to the control group.

Key word: *Datura*, Liver, plant extract

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Introduction

Datura stramonium, also known as "Jimson weed," is a flowering plant that belongs to the Solanaceae family and can be found throughout tropical and warm temperate regions of the world (Chinedu et al., 2019). It has been identified as an annual herb that grows in gardens, roadsides, and other waste or cultivated land (Jonson and Afshari, 2016). *Datura* is an important source for many medical drugs. *Datura* can be poisonous if used incorrectly (Kayode et al., 2016).

Traditionally, *Datura* was used to treat asthma, abscesses, arthritis, gastrointestinal problems,

headaches, aches, sprains, haemorrhoids, snake bites, swellings, and tumours; it was also used as an ointment to relieve the pains of rheumatism and sciatica, and to ease Parkinson's disease spasms (Williams, 2013).

Hyoscyamine, atropine, and scopolamine were the most significant alkaloids that have been discovered in the *Datura* plant, and they are typically found in seeds with high numbers and in leaves (Kayode et al., 2016; Fernández et al., 2021). Toxicity may result from the presence of "toxic tropane alkaloids" with methylated nitrogen atoms (N-CH₃), such as the anticholinergic