

<https://doi.org/10.46344/JBINO.2020.v09i06.23>

HEPATOPROTECTIVE EFFECT OF ETHANOLIC RHIZOME EXTRACT OF *NARDOSTACHYS JATAMANSI* AGAINST ACUTE ALCOHOL-INDUCED LIVER INJURY IN WISTAR RATS

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ABSTRACT

To investigate the hepatoprotective activity of ethanolic rhizome extract of *Nardostachys jatamansi* against acute alcohol-induced liver injury in Wistar rats. Ethanolic (50%) extract of *Nardostachys jatamansi* (NJE 400 and 800 mg/kg body weight) was administered daily for eight days in experimental animals. To develop hepatotoxicity, animals were administered orally with alcohol 12 ml/kg at 2 h after the doses of NJE everyday for eight consecutive days except the normal group. The hepatoprotective activity was assessed using various biochemical parameters like serum aspartate aminotransferase, serum alanine transaminase, alkaline phosphate, serum lactate dehydrogenase, albumin, and bilirubin level. The results of the study demonstrated that the treatment with NJE significantly ($P < 0.05$) and dose-dependently prevented alcohol-induced increase in serum levels of hepatic enzymes. The results of this study indicate that the ethanolic rhizome extract of *Nardostachys jatamansi* may prevent alcohol-induced liver injury.

Keywords: *Nardostachys jatamansi*; ethanol; antioxidant; antihepatotoxicity

Table 2 Effect of NJE on serum AST, ALT, ALP (U/L), Bilirubin level (mg/dl), Albumin (gm/dl), LDH (U/L), (mg/dl) and CHL (gm/dl) against ethanol induced hepatotoxicity in rats

Groups	AST (U/L)	ALT (U/L)	ALP (U/L)	LDH (U/L)	CHL (mg/dl)	ALB(gm/dl)	Bilirubin (mg/dl)	
							Direct	Total
Control	90.56±11.54	39.23±6.23	67.32±8.12	364.11±26.21	85.87±5.21	4.12±0.11	0.59±0.12	0.19±0.03
Ethanol	291.21±25.94 [#]	157.15±12.71 [#]	176.97±12.23 [#]	668.24±28.52 [#]	79.68±6.89 [#]	2.96±0.08 [#]	2.99±0.31 [#]	1.71±0.06 [#]
NJ 400	223.84±21.33 ^{**}	89.25±09.11 ^{**}	97.45±10.65 ^{**}	502.21±13.29 ^{**}	53.41±6.11 ^{**}	3.78±0.10 ^{**}	1.26±0.17 ^{**}	0.97±0.04 [*]
NJ 800	119.12±13.11 ^{***}	48.47±6.21 ^{***}	73.87±6.54 ^{***}	392.83±18.57 ^{***}	40.33±2.89 ^{***}	4.03±0.07 ^{***}	0.79±0.13 ^{***}	0.28±0.05 ^{***}
Silymarin	95.33±12.36 ^{***}	40.17±6.09 ^{***}	66.54±7.61 ^{***}	373.77±17.01 ^{***}	34.83±3.21 ^{***}	4.14±0.05 ^{***}	0.61±0.11 ^{***}	0.20±0.03 ^{***}

Values are expressed as mean ± SEM; P values: [#]<0.01, ^{##}<0.001 compared with respective control group I; P values: ^{*}<0.05, ^{**}<0.01 and ^{***}<0.001 compared with group II (ethanol).