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Evaluation of the hypolipidemic and antioxidant potential of cashew apple powder: A study with high cholesterol diet induced hyperlipidemic Wistar rats

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Claim: This first-ever animal study reports safety and therapeutic impact of cashew apple powder as a functional food, effective in the management of secondary complications associated with high-cholesterol diet (HCD). The results indicate that cashew apple powder is effective in lowering cholesterol level, and potentially, antioxidant in rats fed with HCD.

Design: An 8-week-long (4 week High cholesterol diet, next 4 week treatment phase) safety and efficacy study investigated the hypolipidemic and antioxidant potential of cashew apple powder (low dose: 400 mg/kg BW and medium-dose: 800 mg/kg BW) in Wistar rats fed with a high-cholesterol diet. The study involved seven groups (controls: NC1, NC2; disease: DC; Tests: TEST1, TEST2; and standards: STD 1, STD 2) of 8 rats (four males and four females) each.

Results: The total cholesterol level significantly ($p < 0.001$) lowered in all the groups in comparison with DC. The total cholesterol level started decreasing prominently from day 14 (2nd week of treatment) in females, and from day 28 (4th week of treatment) in males. Regarding oxidative stress as evaluated from liver tissue, the levels of catalase, GSH, and SOD decreased significantly ($p < 0.001$) in DC in comparison with NC. The levels of these markers increased significantly ($p < 0.001$) in STD and TEST in comparison with DC. Similarly, the MDA level decreased significantly ($p < 0.001$) in STD and TEST in comparison with DC.

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