

A Novel Polyherbal Formulation for Hyperlipidemia: Development, Characterization and Pharmacological Assessment

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Abstract: Hyperlipidemia is a major risk factor for cardiovascular disease, and there is increasing interest in plant-based therapies for its management. This research investigates the development and evaluation of a polyherbal syrup formulated using *Allium sativum* (garlic), *Trigonella foenum-graecum* (fenugreek), *Curcuma longa* (turmeric), and *Cinnamomum verum* (cinnamon), each known for their lipid-lowering, antioxidant, and anti-inflammatory effects. The polyherbal formulation was prepared as an aqueous syrup and subjected to preliminary phytochemical screening, which confirmed the presence of key bioactive compounds including allicin, diosgenin, curcuminoids, and cinnamaldehyde. In vivo studies on hyperlipidemic animal models demonstrated significant reductions in total cholesterol, LDL-C, and triglyceride levels, along with a moderate increase in HDL-C. The results suggest a synergistic hypolipidemic action of the combined herbs, potentially mediated through modulation of lipid metabolism and antioxidant mechanisms. This polyherbal syrup presents a promising alternative or adjunct to conventional lipid-lowering therapies.

Based on your previous work on a cholesterol-lowering polyherbal syrup formulated with garlic, fenugreek, turmeric, and cinnamon, here's a clear purpose statement you

The purpose of this polyherbal syrup formulation is to develop a natural, plant-based therapeutic agent aimed at lowering elevated cholesterol levels (hyperlipidemia).

Objective:

- Reduce total cholesterol, LDL cholesterol, and triglycerides
- Improve HDL cholesterol levels
- Support cardiovascular health through anti-atherosclerotic and hepatoprotective effects
- Offer a safer, cost-effective, and complementary alternative to conventional lipid-lowering medications..

Keywords: Hyperlipidemia, pathophysiology, medications, diagnosis, polyherbal syrup

