

IN VIVO AND IN SILICO ANTI-ATHEROSCLEROTIC ACTIVITY OF ETHANOLIC LEAVES EXTRACT OF *OCIMUM BASILICUM* AND *ANNONA RETICULATE*

Premi Gelam^a, Rama R Vadapalli^b, Sathish K. Konidala^c, Ramayyappa Muddala^{d*},
Brahmaiah Bonthagarala^b, Geethika V. R. Samineni^d, Mohammed Shakir^d, Mounica R. Meka^d,
Eswari Singampalli^d and Raveendra B. Gudimetla^e

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ABSTRACT

Annona reticulata and *Ocimum basilicum* plants are known for their medicinal qualities and exhibit promise in managing atherosclerosis by regulating lipid levels. The study assessed the potential of selected extracts in managing atherosclerosis in hyperlipidemia induced rats with a high-fat diet. Parameters such as body weight, organ weight, blood glucose and lipids levels were measured. Histopathology of the aorta was conducted. *In silico* docking study was conducted to predict the anti-atherosclerosis activity against Liver X receptor and PPAR- γ proteins. The animal group treated with a mixed extract (1:1 ratio) (200 mg kg⁻¹ body weight) of selected plants exhibited significantly reduced body weight and improved lipid profiles, compared to the control group. Histopathological analysis showed no significant changes in aortic diameter in the treated group compared to controls. *In in silico* analysis, the potential compounds with prominent interactions with target were proteins were predicted. These findings suggest that the mixed extract may possess atherosclerosis-controlling properties.