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Effect of *Gymnema sylvestre* leaf extract on development of diabetic induced in rats

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Abstract

Gymnema sylvestre (*G. sylvestre*) belonging to the family Asclepiadaceae is a commonly used herb in Ayurveda. *Gymnema sylvestre* (*G. sylvestre*) is a hypoglycemic herb used by diabetics worldwide. The effect of this herb on diabetic complications such as cataract is not known. The anticataract effect of *G. sylvestre* leaf extract was evaluated in streptozotocin induced diabetic cataract model and selenite induced oxidative stress cataract model in rats. The *G. sylvestre* extract was administered at three different doses of 200 mg kg-1, 400 mg kg-1 and 800 mg kg-1 orally to streptozotocin induced diabetic rats for 12 weeks. The serum glucose levels, body weight and food intake were determined every two weeks. The cataract score, serum glutathione levels, antioxidant enzymes activity and aldose reductase enzyme activity were estimated at the end of the experiment. The extract showed antidiabetic effect and reduced the development of cataract in streptozotocin induced diabetic animals. The extract was also effective in maintaining glutathione levels and antioxidant enzyme levels in the lens of diabetic rats. However, it failed to affect lens aldose reductase enzyme activity significantly. The *G. sylvestre* extract was effective in reducing oxidative stress induced cataract after selenite administration in rat pups when administered intraperitoneally. This pleitropic effect of *G. sylvestre* extract may benefit diabetic patients in maintaining both blood sugar levels and preventing/delaying the development of cataract.

Biography

Rama Krishna Raparla has completed his graduation in the year 2000 from JNTUH, Hyderabad and Post graduation with the specialization of Pharmaceutical Biotechnology in 2003 from Tamilnadu's Dr. M.G.R. Medical University, Chennai. He has completed the Doctorate degree in 2009 from JNTUH, Hyderabad under esteemed guidance of Prof. T.E.G.K Murthy on the topic entailed "Design and Development of controlled release formulations of Anti diabetic Drugs". He has an experience of six years as a research associate and 2 years in the Administration process. He has the experience in organizing the National seminars in his credit. He has the credit of being a life member in A.P.T.I, Pharmacy Council of Andhra Pradesh and many