

Impact of *Epimedium grandiflorum*'s phytochemical constituents on antioxidant potential and reproductive hormones in male albino rats

Naveed Munir

University Faisalabad, Pakistan.



Abstract

Medicinal herbs and their preparations have been used by the mankind to treat a wide range of disorders since long. Current study was planned to explore the therapeutic potential of ethanolic extract of *Epimedium grandiflorum* leaves particularly to manage antioxidant and reproductive system disorders in albino male rats. Qualitative and Quantitative analysis explored a wide range of phytoconstituents, and the results of HPLC and FTIR spectroscopy revealed the presence of wide range of phenolic compounds and functional groups, respectively. It was also reported that ethanolic extract exhibited DPPH scavenging (78.87 ± 5.427 %) and H₂O₂ scavenging (31.82 ± 3.491 %), antioxidant and reducing power potentials. Further, extract not induced hemolysis (7.56 ± 1.297 %) while have significant clot dissolving (44 ± 5.2 %) potential. In vivo experimentation in albino male rats revealed that administration of plant extract orally for 42 days after intoxication with CCl₄ significantly ($P < 0.05$) restore the selected blood parameters including liver enzymes, renal profiles, and stress markers. Moreover, administration of ethanolic extract significantly ($P < 0.05$) restored reproductive hormones including testosterone, luteinizing hormone (LH), follicle stimulating hormone (FSH) and prolactin while significant ($P < 0.05$) decreased levels of progesterone and estradiol toward a normal level in dose dependent manner. On histological examination of testicular tissue revealed significant ($P < 0.05$) improvement in the structural architecture, especially in animals received ethanolic extract in high dose (200 mg/Kg b.w.) as compared to both positive control groups. It could be concluded that *E. grandiflorum* medicinal plant has significant antioxidant and reproductive hormones restoring capacity. However, more research is required to isolate the novel compounds from this therapeutic plant to address the healthcare problems particularly impotency.



Biography:

Naveed Munir has completed his M.Phil Biochemistry Degree from University of Agriculture, Faisalabad-Pakistan and now He is PhD Biochemistry Scholar at Government College University, Faisalabad-Pakistan. He is the Visiting Lecturer at the same University. He has published more than 35 papers and Book Chapters in reputed journals and Books.

Speaker Publications:

- 1.Naveed Munir (2019) Comparative evaluation of selected sex hormones in premenopausal and postmenopausal women with breast cancer. International Journal of Biosciences. 15, 48-65.
- 2.Naveed Munir (2017) DEVELOPMENT OF LIQUID STATE FERMENTATION PROCESS FOR THE PRODUCTION OF LIGNINOLYTIC ENZYMES BY CORIOLUS VERSICOLOR IBL-04 USING LIGNIN CONTAINING SUBSTRATE. Pakistan Journal of Medical and Biological Sciences, 5(2):53-63.
- 3.Naveed Munir (2018) Antiviral potential of medicinal plants against HIV, HSV, influenza, hepatitis, and coxsackievirus: A systematic review. Phytotherapy Research 32 (5), 811-822.
- 4.Naveed Munir (2019) Therapeutic potential of medicinal plants for the management of urinary tract infection: A



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5.Naveed Munir (2020) Naegleria fowleri: Sources of infection, pathophysiology, diagnosis, and management; a review. Clinical and Experimental Pharmacology and Physiology 47 (2), 199-212.

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