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Adaptogenic activity of *Withania somnifera*: an experimental study using a rat model of chronic stress.

[Bhattacharya SK](#), [Muruganandam AV](#).

Department of Pharmacology, Postgraduate Institute of Basic Medical Sciences, Calcutta University, 244 B Acharya JC Bose Road, Calcutta 700 020, India.

Abstract

Withania somnifera (WS) Dunal is classified in Ayurveda, the ancient Hindu system of medicine, as a rasayana, a group of plant-derived drugs reputed to promote physical and mental health, augment resistance of the body against disease and diverse adverse environmental factors, revitalise the body in debilitated conditions and increase longevity. These attributes are remarkably similar to the properties ascribed to adaptogens like *Panax ginseng* (PG) in contemporary medicine. As such, the adaptogenic activity of a standardised extract of WS roots was investigated against a rat model of chronic stress (CS). The stress procedure was mild, unpredictable footshock, administered once daily for 21 days to adult male Wistar rats. CS induced significant hyperglycaemia, glucose intolerance, increase in plasma corticosterone levels, gastric ulcerations, male sexual dysfunction, cognitive deficits, immunosuppression and mental depression. These CS induced perturbations were attenuated by WS (25 and 50 mg/kg po) and by PG (100 mg/kg po), administered 1 h before footshock for 21 days. The results indicate that WS, like PG, has significant antistress adaptogenic activity, confirming the clinical use of the plant in Ayurveda