

## Adaptogenic Activity of Ingredient of PHYTOCEE® : *Withania somnifera*

### OBJECTIVE

To investigate the adaptogenic activity of a standardized extract of *Withania somnifera* (WS) roots against a rat model of chronic stress (CS).

### MATERIALS AND METHODS

Adult male Wistar strain rats (180 –220 g) were used. The stress procedure was mild, unpredictable foot shock, administered once daily for 21 days to adult male Wistar rats. Crude Panax ginseng (PG) root powder was used as the standard drug for comparison of adaptogenic activity. WS and PG were suspended in 0.3% carboxymethyl cellulose in distilled water. WS was used at two dose levels, 25 and 50 mg/kg, and PG at the dose of 100 mg/kg. The drugs were administered orally (po) for 21 days, 1 h before foot shock. Control animals received only the vehicle in the same volume used for drug administration (2.5 ml/kg po). Plasma corticosterone was evaluated.

### RESULTS

#### Effects of WS and PG on CS-induced increase in plasma corticosterone levels in rats

Treatments * (mg/kg, po)	<i>n</i>	Plasma corticosterone (µg/dl)
Vehicle (V)	8	14.6 ± 1.9
CS	12	21.6 ± 2.1 <sup>a</sup>
WS (25)+CS	8	15.8 ± 1.6 <sup>b</sup>
WS (50)+CS	8	13.7 ± 2.0 <sup>b</sup>
PG (100)	8	17.6 ± 1.4 <sup>b</sup>

Values are expressed as mean ± SEM; ap<0.05 different from group V; bp<.05 different from group CS;

\*WS, PG and V were administered once daily for 21 days 1 h before CS

#### CONCLUSIONS

The chronic stress induced perturbations viz. increase in plasma corticosterone levels were attenuated by *Withania somnifera* (25 and 50 mg/kg po) and by Panax ginseng (100 mg/kg po), administered 1 h before foot shock for 21 days.

#### OUTCOME

These findings indicate that *Withania somnifera*, like Panax ginseng, has significant antistress/adaptogenic activity, confirming the clinical use of the *Withania somnifera* in Ayurveda.

#### Reference:

Bhattacharya SK, Muruganandam AV. Adaptogenic activity of *Withania somnifera*: an experimental study using a rat model of chronic stress. Pharmacol Biochem Behav. 2003;75(3):547-55.