To examine the dose dependent adaptogenic activity aqueous extract of Rhodiola imbricata root was orally administered in rats at different doses, 30 min prior to cold (5 Â°C)-hypoxia (428 Â mmÂ Hg)-restraint (C-H-R) exposure. The maximal effective adaptogenic dose of the extract was 100 Â mg/kg body weight. The acute and sub-acute toxicity of the extract was also studied in rats. Sub-acute toxicity studies included administration of single oral dose of 1 Â g/kg and 2 Â g/kg of extract once daily for 14 Â days and maximal effective single oral dose of 100 Â mg/kg once daily for 30 Â days. At the end of each treatment period the biochemical parameters related to liver function, kidney function, lipids (triglycerides, cholesterol) and hematological parameters were estimated in serum and blood. Biochemical and hematological analysis showed no significant changes in any of the parameters examined in treated group's animal, in comparison to control animals. No significant change was observed in organ weight/body weight ratios, of any organ studied in comparison to control rats. The oral LD50 of the extract was observed to be >10 Â g/kg, indicating an adequate margin of safety. No histopathological changes were observed in the vital organs studied of the treated animals. These results suggest that aqueous extract of R. imbricata root possess potent adaptogenic activity with no acute and sub-acute toxicity.