



## Ameliorative potential of sodium cromoglycate and diethyldithiocarbamic acid in restraint stress-induced behavioral alterations in rats

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### Abstract:

The present study was designed to investigate the ameliorative effects of sodium cromoglycate and diethyldithiocarbamic acid in acute stress-induced behavioral alterations in rats subjected to restraint stress. The rats were placed in the restrainer (5.5 cm in diameter and 18 cm in length) for 3.5 h. Restraint stress-induced behavioral alterations were assessed using the hole-board, social interactions and open field tests. Restraint stress resulted in a decrease in the frequency of head dips, rearing in the hole board, line crossings and rearings in the open field, and an increase in avoidance behaviors in the social interaction tests. Sodium cromoglycate (25 mg/kg and 50 mg/kg, *ip*), a mast cell stabilizer, and diethyldithiocarbamic acid (75 mg/kg and 150 mg/kg, *ip*), a selective NF- $\kappa$ B inhibitor, were employed to modulate restraint stress-induced behavioral changes. The administration of sodium cromoglycate and diethyldithiocarbamic acid significantly attenuated the restraint stress-induced behavioral changes. The noted beneficial effects of sodium cromoglycate and diethyldithiocarbamic acid may possibly be attributed to mast cell stabilization and inhibition of NF- $\kappa$ B activity, respectively.

### Key words:

mast cells, nuclear factor- $\kappa$ B, restraint stress, behavioral alterations

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