



Short communication

D-serine, a selective glycine/N-methyl-D-aspartate receptor agonist, antagonizes the antidepressant-like effects of magnesium and zinc in mice

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Abstract:

Zinc and magnesium are potent inhibitors of the N-methyl-D-aspartate (NMDA) receptor complex. Recent data demonstrate that both zinc and magnesium, like other NMDA receptor antagonists, exhibit antidepressant-like activity in rodent screening tests and depression models. In the present study, we investigated the effect of D-serine (agonist for the glycine_B site of the NMDA receptor complex; 100 nmol/mouse, *icv*) on magnesium (30 mg/kg, *ip*)- and zinc (5 mg/kg, *ip*)-induced activity during a forced swim test (FST) in mice. The antidepressant-like effect observed during FST for both ions was abolished by D-serine co-treatment.

The present study indicates that the NMDA receptor complex, especially the glycine_B site, plays a role in the antidepressant-like activity of magnesium and zinc in the FST in mice.

Key words:

NMDA receptor, glycine_B site, magnesium, zinc, D-serine, forced swim test, mice
