

REVIEW

SIGNIFICANCE OF DYSFUNCTIONAL GLUTAMATERGIC TRANSMISSION FOR THE DEVELOPMENT OF PSYCHOTIC SYMPTOMS

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It has been postulated that disturbances in glutamatergic transmission may contribute to the pathophysiology of schizophrenia. This view is based on several findings: (1) the noncompetitive NMDA receptor antagonists, phencyclidine and ketamine, induce both positive and negative psychotic symptoms in humans, which closely resemble those observed in schizophrenia; (2) a number of animal studies have shown that neuroleptics that ameliorate symptoms of schizophrenia (e.g. clozapine) also inhibit the effects of NMDA antagonists; (3) *postmortem* and *in vivo* studies have revealed alterations in ionotropic glutamate receptors (NMDA, AMPA, KA) and their modulatory sites in schizophrenia; (4) compounds enhancing the function of NMDA receptors potentiate the antipsychotic effects of neuroleptics in schizophrenic patients.

Key words: schizophrenia, glutamate, NMDA receptors, phencyclidine
