

BIOCHEMICAL AND PHARMACOLOGICAL EVIDENCES FOR (-)-EPIGALLO CATECHIN-3-GALLATE (EGCG) TO LINK NMDA RECEPTORS IN RAT CORTEX

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Aim. It is reported that one of major green tea catechins, epigallocatechin gallate (EGCG), has various biological effects, including a neuroprotection effect against neuronal damage. The aim of the present study was to evaluate whether EGCG could attenuate glutamate-induced excitotoxicity through the noncompetitive blocked of the NMDA channel.

Methods. Radioligand binding assays were performed with [³H]MK-801 on membranes prepared from Wistar rat cortex.

Results. [³H]MK-801 appeared to bind a single population of receptors in membrane preparations of Wistar rat cortex. Competitive experiments using MK-801, *N*-allylnormetazocina (SKF 100047), memantine and EGCG at concentration ranging from 0.1 nM - 10 μM to displace the binding of [³H]MK-801 at a concentration around the *K_i* value (10 nM), showed an order of potency of MK-801 > SKF 100047 > memantine > EGCG. This potency order was characteristic of NMDA receptors indicating the [³H]MK-801 binds to NMDA receptors in the bovine retina.

Conclusions. We have compared the ability of known compounds to link the NMDA receptors and EGCG to compete for these receptor sites labelled with [³H]MK-801. These results suggest that EGCG interact with NMDA binding sites within the cortex.

