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Neuroadaptive changes in metabotropic glutamate mGlu2/3R expression during different phases of cocaine addiction in rats

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Highlights

- Cocaine self-administration alters [³H] LY341495 binding to mGlu2/3R in brain areas.
- Extinction from cocaine leads to reduced mGlu2/3R density in brain areas.
- Cocaine priming dose after extinction training increases mGlu2/3R prefrontal density.

Abstract

Background.

In the cocaine addiction the development from transient into persistent neuroplastic changes strongly involves the glutamatergic system. In this respect, among glutamatergic receptors special *attention is paid* to the group II of metabotropic glutamatergic receptors (mGlu2/3R) which are involved in the transition from drug use to drug addiction including the relapse mechanisms.

Methods.

The present study employed radioligand binding and Western blot assays to study mGlu2/3R density, affinity and protein expression in selected rat brain areas after cocaine self-administration, extinction training and cocaine-induced reinstatement. Rats were randomly assigned in triads to one of three conditions: contingent cocaine intravenous self-administration,

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