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

Lucyna Pomierny-Chamiolo[a], Joanna Miszkiel[b], Malgorzata Frankowska[b], Józef Mizera[a], Malgorzata Filip[b]

[a]Department of Toxicology, Faculty of Pharmacy, Jagiellonian University, Medical College, Medyczna 9, PL 30-688 Kraków, Poland;

[b]Institute of Pharmacology Polish Academy of Sciences, Laboratory of Drug Addiction Pharmacology, Smętna 12, PL 31-343 Kraków, Poland

Corresponding author:

Lucyna Pomierny-Chamiolo

Department of Toxicology, Faculty of Pharmacy, Jagiellonian University, Medical College, Medyczna 9, PL 30-688 Kraków, Poland;

Phone number: +48 12 620 56 30

Fax number: +48 12 620 56 43

e-mail: lpomiern@cm-uj.krakow.pl

Highlights

- Cocaine self-administration alters [^{3}H] 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,