INHIBITION OF AMINO ACID RELEASE BY 5-HT\textsubscript{1B} RECEPTOR AGONIST IN THE RAT PREFRONTAL CORTEX

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\textit{In vivo} microdialysis in conscious rats was used to evaluate the effect of 5-HT\textsubscript{1A} agonist (\textpm)-8-hydroxy-2-(n-dipropylamino)tetralin (8-OH-DPAT), 5-HT\textsubscript{2\alpha/\gamma} agonist (\textpm)-1-(2,5-dimethoxy-4-iodophenyl)-2-aminopropane (DOI) and 5-HT\textsubscript{1B} receptor agonist 3-(1,2,5,6-tetrahydropyrid-4-yl)pyrrolo-[3,2-b]pyrid-5-one (CP 93129) on the veratridine-evoked glutamate (Glu) and aspartate (Asp) release in the rat prefrontal cortex. CP 93129 at concentrations between 50–500 \textmu M significantly reduced Glu and Asp release. The effect of CP 93129 was attenuated by intraperitoneal (ip) administration of the selective 5-HT\textsubscript{1B} receptor antagonist N-[3-[3-(dimethylamino)ethoxy]-4-methoxyphenyl]-2’-methyl-4’-(5-methyl-1,2,4-oxadiazol-3-yl)-1,1’-biphenyl]-4-carboxamide (SB 216641) at a dose of 2 mg/kg. Neither DOI (100 \textmu M) nor 8-OH-DPAT given locally at concentration of 100 \textmu M or peripherally at doses of 0.1 and 1 mg/kg ip, influenced stimulated Glu and Asp release. We suggest that cortical glutamatergic neurons possess 5-HT\textsubscript{1B} heteroreceptors and their activation may be responsible for the inhibitory effect of 5-HT on Glu and Asp release.

\textbf{Key words:} glutamate and aspartate release, 5-HT receptor agonists, microdialysis, rat prefrontal cortex

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