

¹²⁵I-iomazenil-benzodiazepine receptor binding during psychological stress in rats

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Objective: We investigated the changes in ¹²⁵I-iomazenil (¹²⁵I-IMZ) benzodiazepine receptor (BZR) binding with psychological stress in a rat model. **Methods:** Six male Wistar rats were placed under psychological stress for 1 hour by using a communication box. No physical stress was not received. 1.85 MBq of ¹²⁵I-IMZ was injected into the lateral tail vein and the rat was killed 3 hours later. Twenty-micrometer-thick sections of the brain were collected and % injected dose per body weight (%ID/BW) of eleven regions (frontal, parietal, temporal, occipital cortices, caudate putamen, accumbens nuclei, globus pallidus, amygdala, thalamus, hippocampus and hypothalamus) were calculated by autoradiography. The %ID/BW of rats which were placed under psychological stress was compared with that of 6 control rats. **Results:** The %ID/BW of rats which were placed under psychological stress diffusely tended to show a reduction in ¹²⁵I-IMZ-BZR binding. A significant decrease in BZR binding was observed in the hippocampus of the rats which were placed under psychological stress. **Conclusion:** ¹²⁵I-IMZ-BZR binding tended to decrease throughout the brain.

Key words: ¹²⁵I-iomazenil, benzodiazepine receptor, psychological stress, rat, communication box