ORIGINAL ARTICLE

Annals of Nuclear Medicine Vol. 11, No. 1, 21–26 1997

Effects of reserpine treatment on the dopamine receptor binding of [^{3}H/^{11}C]nemonapride in the mouse and rat brain

Kiichi ISHIWATA, Kaori ONOGUCHI, Hinako TOYAMA,
Junko NOGUCHI and Michio SENDA

Positron Medical Center, Tokyo Metropolitan Institute of Gerontology

We investigated the effect of reserpine treatment on the striatal uptake of a radiolabeled dopamine D_2-like receptor ligand nemonapride (NEM). In mice, the uptake of the [^{3}H]NEM in the striatum, cortex and cerebellum was enhanced by the reserpine pretreatment. Neither the ratio of striatum to cerebellum nor that to cortex was affected by the reserpine pretreatment. In rats, *ex vivo* autoradiography showed no effect of the reserpine treatment on the striatal uptake of [^{11}C]NEM or the striatum to cortex ratio. The results suggest that the receptor binding of NEM was not significantly influenced by reserpine-induced depletion of endogenous dopamine probably because of its high affinity for the receptors.

Key words: [^{11}C]nemonapride, reserpine, dopamine D_2-like receptor, *ex vivo* autoradiography