

Mineralocorticoid receptor in the brain
Distribution and its significance

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Summary

The localizations of mRNAs of mineralocorticoid receptor (MR) and glucocorticoid receptor (GR) in the rat brain were examined by *in situ* hybridization histochemistry.

Fluorescein-labeled RNA probes were synthesized from cDNA fragments for MR and GR. Probe for GR mRNA was complementary to the fragment in the transcription modulation (TM) domain. Probes for MR mRNA were complementary to the fragment in the TM domain and the ligand binding domain. These two MR probes showed the same distributional pattern of signals. The intensities of the signal detected by probe B were stronger than probe A.

The strong hybridization signals of MR and GR mRNAs were mainly detected in the cerebral cortex and the hippocampal formation. In addition, hybridization signals of MR and GR mRNAs were expressed in the brain stem.

In the cerebral cortex, high densities of MR mRNA-containing cells were distributed in layers II/III and layer V, while those of GR mRNA-containing cells were in layers II/III to layer VI. The cells containing both MR and GR mRNAs were observed in the pyramidal layer throughout Ammon's horn and the dentate gyrus. But, few cells expressing both mRNAs were detected in layers II/III and layer V of the cerebral cortex.

The production of MR antibody is now underway after the synthesis of MR-GST fusion protein.