PRELIMINARY COMMUNICATION

USING REVERSE TRANSCRIPTION AND A COMPETITIVE POLYMERASE CHAIN REACTION FOR QUANTIFICATION OF $\alpha_{1B}$-ADRENOCEPTOR mRNA

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Molecular cloning studies have revealed the existence of three subtypes of $\alpha_1$-adrenergic receptor ($\alpha_1$-AR), namely $\alpha_{1A}$, $\alpha_{1B}$ and $\alpha_{1D}$. They are encoded by separate genes and have distinct pharmacological profiles. In rats’ brain, the expression of mRNA for subtypes of an $\alpha_1$-AR is partially structure-dependent. Our previous studies employing Northern blot analysis of mRNA have shown that in the hippocampus, where $\alpha_{1A}$ predominates, the $\alpha_{1B}$ receptor ($\alpha_{1B}$-AR) was almost undetectable. The goal of the present study was to establish the method of reverse transcription and competitive polymerase chain reaction (RT-cPCR) to quantify a steady state level of $\alpha_{1B}$-AR mRNA in the hippocampus, prefrontal cortex and thalamus, and to compare the $\alpha_{1B}$-AR’ pattern of expression with that revealed by Northern blot analysis. Our results have shown that $\alpha_{1B}$-AR is similarly represented in the thalamus and prefrontal cortex. In the hippocampus, ten times lower expression of $\alpha_{1B}$ mRNA has been demonstrated with RT-cPCR, which was below a detection limit of Northern blot hybridization technique.

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