Synthesis and expression of functional angiotensin II receptors in Xenopus oocytes injected with rat brain mRNA.

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Xenopus laevis oocytes were injected with poly(A)+ mRNA isolated from rat brain and superfused in a medium containing either serotonin, angiotensin II or bradykinin. Applications of serotonin or angiotensin II to injected oocytes elicited, in a dose-dependent manner, changes in membrane potential. The angiotensin II receptor was desensitized fairly rapidly in the continued presence of the agonist. No response was obtained with bradykinin. The selectivity of the angiotensin II-induced response was demonstrated by the finding that the angiotensin II antagonist [(
Sar1,Ala8]angiotensin II, saralasin) blocked the angiotensin II-induced response. It is concluded that an appropriate fraction of brain mRNA is capable of directing the synthesis and correct insertion of functional angiotensin II receptors in the Xenopus oocyte membrane.