

5-HT_{1A} RECEPTORS: A COMPARISON OF LIGAND BINDING IN RABBIT, RAT, AND HUMAN ^{MAS}

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Serotonin (5-HT) exerts its actions through a group of receptors in the central nervous system. These receptors have been characterized pharmacologically and are classified into seven subtypes. One of the first subtypes identified, 5-HT₁, is represented by five divisions (5HT_{1a,b,d,e,f}). 5HT_{1a} has been analyzed in several mammalian species including rabbit, rat, and human; it has never been fully characterized in rabbit. The current study compares the characteristics of the 5HT_{1a} receptor in rabbit brain to those in rat and human. A selective agonist, 8-OH-DPAT, is at 5HT_{1a} and is used in the characterization of this receptor. [³H]-8-OH-DPAT binding was analyzed

in rabbit and rat brain and in Chinese hamster ovary (CHO) cells transfected with clonal cDNA for the human 5-HT_{1a} receptor (gift from John Raymond, Duke). Specific, saturable binding was observed with K_d values of 1.1, 0.8, and 0.6nM for the rabbit, rat, and human receptor, respectively. To further investigate the receptor, displacement studies were conducted in which drugs with known activity (i.e. buspirone, propranolol) competed for binding with [³H]-8OHDPAT. K_i values for each of the competing drugs were similar across the three species. These results suggest that the 5-HT_{1a} receptor in the rabbit brain shows comparable characteristics to that in rat and human.