Neurotransmitter Receptors in the Amygdala



The Amygdala (Greek for "almond-shaped") is a nuclear complex found in the medial temporal lobe. It was initially described in the first-half of the 19th century by the German physician Karl Burdach, who also co-coined the term "morphology". The amygdala suffers from both a lack of consensus regarding its anatomical structure, and the relationships of its structures (or nuclei) to adjacent brain areas. Here, we consider the central and medial nuclei to be a phylogenetically "old" complex that has an association with olfaction, and the lateral and basolateral nuclei to be phylogenetically "new" with connections to the cerebral cortex. In general, glutamatergic inputs target the lateral nucleus. The terminals can end on amygdaloid glutamatergic projection neurons that further project to the basolateral and centromedial nuclei. These nuclei may contribute additional intra-amygdaloid connections, or impact neurons in the central nucleus which typically transmit inhibitory signals to neurons in autonomic centers. Alternatively, glutamatergic inputs to the lateral nucleus may end on lateral nucleus GABA neurons. This activates GABA neurons, which subsequently inhibit lateral nucleus projection neurons, creating a feed forward inhibition pathway. In addition, glutamatergic lateral nucleus neurons can act on adjacent GABAergic neurons, generating an inhibitory signal in a feedback inhibition pathway. This schematic depicts potential neuronal processes, their interactions, and associated neurotransmitter receptors. R&D Systems currently offers antibodies to all labeled molecules.







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NOTE: This poster conveys a general overview and should be considered neither comprehensive nor definitive The details of the process are understood to be subject to interpretation. © R&D Systems, Inc. 2011

