Monoamine Encyclopedia Article

Monoamine

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Monoamine

A monoamine is an amine that has one organic substituent attached to the nitrogen atom (as RNH_2). SEROTONIN is such an amine, one that is functionally important in NEUROTRANSMISSION. Chemically, monoamines include the catecholamines (derived from tyrosine) and the indoleamines serotonin and melatonin (derived from the amino acid tryptophan). Acetylcholine also has only a single (but trimethylated) amine, while histamine (a diamine formed from histidine) stretches the condition only slightly. Neurotransmitters in this class share several properties—nanomolar concentrations/milligram protein; neurons (nerve cells) that contain thin, generally unmyelinated axons to many brain regions; and their receptors (except for the cholinergic nicotinic receptor and one of the ten or so subtypes of serotonin receptors) employ second-messenger coupled transduction. Monoamine neurotransmitters are often involved in the action of mind-altering drugs and have been well studied.

See Also

Bibliography

SNYDER, S. H. (1980). *Biological aspects of mental disorder*. New York: Oxford University Press.