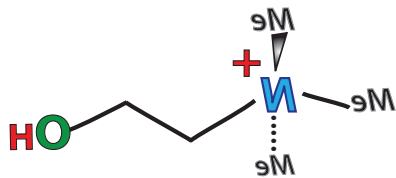
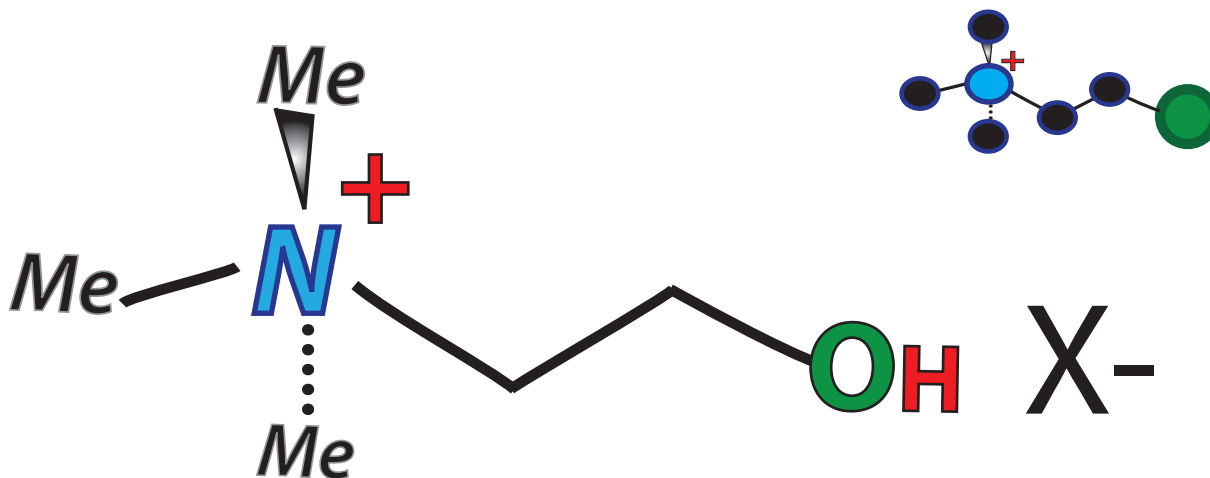


Choline

(S)-2-Amino-3-(3,4-DihydroxyPhenyl) Propanoic Acid
(2-Hydroxyethyl)trimethylammonium

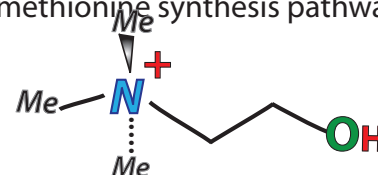
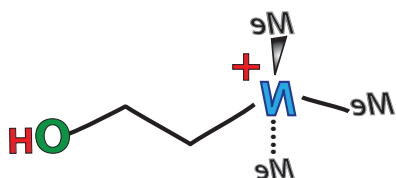


Choline was discovered by Andreas Strecker in 1864 and chemically synthesized in 1866. In 1998 choline was classified as an essential nutrient by the Food and Nutrition Board of the Institute of Medicine (U.S.A.).

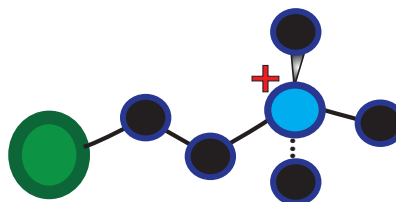


Choline is a quaternary saturated amine with the chemical formula $(\text{CH}_3)_3\text{N}^+\text{CH}_2\text{CH}_2\text{OHX}^-$, where X^- is a counterion such as chloride (see choline chloride), hydroxide or tartrate. Choline chloride, in mixture with urea is used as a solvent (DES) and the salicylate salt is used topically for pain relief of aphthous ulcers.

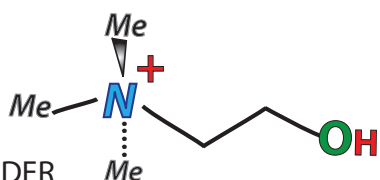
Choline and its metabolites are needed for three main physiological purposes: structural integrity and signaling roles for cell membranes, cholinergic neurotransmission (acetylcholine synthesis), and as a major source for methyl groups via its metabolite, trimethylglycine (betaine) that participates in the S-adenosylmethionine synthesis pathways.



Choline is an organic compound, classified as a water-soluble essential nutrient and usually grouped within the Vitamin B complex. This natural amine is found in the lipids that make up cell membranes and in the neurotransmitter acetylcholine. Adequate intakes (AI) for this micronutrient of between 425 to 550 milligrams daily, for adults, have been established by the Food and Nutrition Board of the Institute of Medicine of the National Academy of Sciences



When choline is metabolized by the body, it may form trimethylamine, a compound with a fishy odor. Hence, when large amounts of choline are taken the person may suffer from a "fishy body odor".



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