

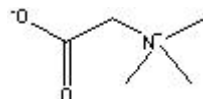
TECHNICAL INFORMATION

Catalog Number: 101003, 150461

Betaine

Structure:

Free Base



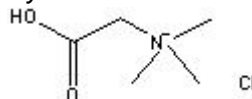
Molecular Formula: C₅H₁₁NO₂

Molecular Weight: 117.1

CAS # 107-43-7

Solubility: Soluble in water (50 mg/ml - clear, colorless to faint yellow solution), methanol (100 mg/ml - clear solution) and ethanol. Solutions can be aliquoted and stored at -20°C for up to approximately 3 to 4 months.

Hydrochloride



Molecular Formula: C₅H₁₁NO₂·HCl

Molecular Weight: 153.6

CAS # 590-46-5

Solubility: Soluble in water

Synonyms: Lycine; oxyneurine; (Carboxymethyl)trimethylammonium hydroxide inner salt; Glycine betaine

Physical Appearance: Free-flowing, faintly brown crystals

Note: An inner salt

Description: A quaternary amine found in bacteria and higher plants which acts as an osmoprotectant (able to restore and maintain osmotic balance in living cells)^{4,7,9,11,13,14,15} and enhances the freezing tolerance of living organisms.^{10,14,15} This is probably due to its involvement in the protection of macrocomponents of plant cells, such as protein complexes and membranes, under stress conditions.⁸ Betaine is biosynthesized in living cells by a two-step oxidation method from choline.⁹ The primary enzyme involved in this biosynthesis is choline oxidase.¹⁰

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