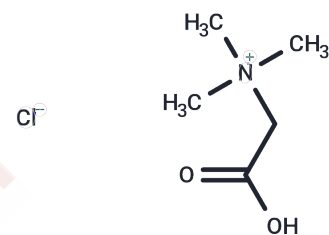


Betaine chloride

Chemical Properties

CAS No. :	590-46-5
Formula:	C ₅ H ₁₂ ClNO ₂
Molecular Weight:	153.61
Storage:	Powder: -20°C for 3 years In solvent: -80°C for 1 year Actual storage temperature shall be subject to the COA.



Biological Description

Description	Betaine chloride (Betaine hydrochloride) is an acidic form of betaine, a vitamin-like substance observed in grains and other foods; gains the amplification of DNA by decreasing the formation of secondary structure in GC-rich regions.
Targets(IC50)	Endogenous Metabolite, Chloride channel
In vitro	Exposure to increasing levels of Betaine hydrochloride significantly inhibits HeLa cell proliferation, as demonstrated by the MTT assay ($p < 0.05$). The S phase cell percentage is notably higher in groups exposed to doses below 5 mg/mL compared to those subjected to higher doses, whereas Sub-G1 phase rates exhibit the reverse trend ($p < 0.05$). Concentrations of Betaine hydrochloride above 5.0 mg/mL markedly induce apoptosis in HeLa cells ($p < 0.01$). Superoxide dismutase (SOD) activity in low dose groups slightly exceeds that of the control group ($p < 0.05$). Additionally, there's a noticeable synchrony and correlation in the expression levels of pro-apoptotic genes (Bax, P53, Caspase 3) and the anti-apoptotic gene (Bcl-2). Furthermore, upon inducing apoptosis signals, p53 and cyclin D1 are activated, potentially halting the cell cycle at either the G1/S or S/G2 checkpoints.

Solubility Information

Solubility	H ₂ O: 43 mg/mL (279.93 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	6.510 mL	32.550 mL	65.0999 mL
5 mM	1.302 mL	6.510 mL	13.020 mL
10 mM	0.651 mL	3.255 mL	6.510 mL
50 mM	0.1302 mL	0.651 mL	1.302 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Lee I. Biochem Biophys Res Commun. 2015 Jan 9;456(2):621-5.

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