

Urethane

Chemical Properties

CAS No. : 51-79-6

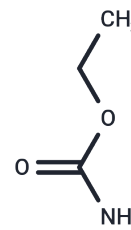
Formula: C₃H₇NO₂

Molecular Weight: 89.09

Keep away from moisture

Storage: Pure form: -20°C for 3 years | In solvent: -80°C for 1 year

Actual storage temperature shall be subject to the COA.



Biological Description

Description	Urethane (Ethyl carbamate; Ethylurethane) is a byproduct formed during the fermentation process of various foods. As an ethyl ester of carbamic acid, it has the ability to inhibit the growth of bacteria, sea urchin eggs, protozoa, and plant tissues, and is commonly used for establishing lung cancer models.
Targets(IC50)	GABA Receptor, Antibacterial, GluR, NMDAR, AChR, Parasite, Chloride channel
In vitro	urethane has a spectrum of action on ion channels, which is distinct from other anesthetics. It significantly potentiates the current responses of both GABAA and glycine receptors in a reversible and concentration-dependent manner. Conversely, urethane (10-300 mM) inhibits the responses of NMDA and AMPA receptors. Also, urethane potentiates the function of an nACh receptor and neuronal nicotinic acetylcholine, γ -aminobutyric acid A, and glycine receptors[3].
In vivo	Urethane, a carcinogenic substance, is favored for acute in vivo electrophysiological experiments because it induces long-lasting steady level of anesthesia with muscle relaxation and minimally affects the autonomic and cardiovascular systems[2]. Urethane affects both inhibitory and excitatory systems but the magnitude of the alterations is less than that produced by other more selective anesthetics[3]. But also, Urethane anesthesia is usually restricted to terminal (acute) experiments due to its potential long-term toxicity[1].

Solubility Information

Solubility	DMSO: 55 mg/mL (617.35 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (22.45 mM), Sonication is recommended. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	11.2246 mL	56.123 mL	112.246 mL
5 mM	2.2449 mL	11.2246 mL	22.4492 mL
10 mM	1.1225 mL	5.6123 mL	11.2246 mL
50 mM	0.2245 mL	1.1225 mL	2.2449 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

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