Urethane

Cat. No.: HY-B1207

CAS No.: 51-79-6

Molecular Formula: $C_3H_7NO_2$

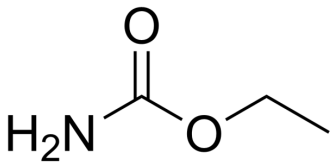
Molecular Weight: 89.09

Target: Bacterial; Parasite

Pathway: Anti-infection

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (1122.46 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	11.2246 mL	56.1230 mL	112.2460 mL
	5 mM	2.2449 mL	11.2246 mL	22.4492 mL
	10 mM	1.1225 mL	5.6123 mL	11.2246 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 50 mg/mL (561.23 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (23.35 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (23.35 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: 2.08 mg/mL (23.35 mM); Clear solution; Need warming

BIOLOGICAL ACTIVITY

Description

Urethane (Ethyl carbamate), the ethyl ester of carbamic acid, is a byproduct of fermentation found in various food products. Urethane has the ability to suppress bacterial, protozoal, sea urchin egg, and plant tissue growth in vitro[1].

In Vitro

Urethane is a good clastogen in mammalian somatic cells in vivo, but it shows variable results with cells in vitro. Urethane efficiently induces sister chromatid exchanges in a variety of cells[2].

	MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Urethane can be used in animal modeling to construct tumor models. Urethane has been used for many years to produce hypnosis and narcosis in mammals, fish, and amphibians. At anaesthetic dosages (1-1.2 g/kg body weight for rats) Urethane has a wide margin of safety and causes minimal changes in blood pressure, aortic blood flow, and blood-gas values[1]. At a dosage of 1g/kg IP (administered intraperitoneally), Urethane will arrest cell division in the crypt of liberkuhn cells in mice[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Sci Adv. 2023 Jul 21;9(29):eadh4054.
- Dev Comp Immunol. 2023 Aug 3;104904.

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REFERENCES

[1]. K J Field, et al. Hazards of urethane (ethyl carbamate): a review of the literature. Lab Anim. 1988 Jul;22(3):255-62.

[2]. R E Sotomayor, et al. Mutagenicity, metabolism, and DNA interactions of urethane. Toxicol Ind Health. 1990 Jan;6(1):71-108.

Caution: Product has not been fully validated for medical applications. For research use only.

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