

Product Data Sheet

Product Name: 1-Benzylimidazole

Cat. No.: GC17678

Chemical Properties

Cas. No. 4238-71-5

Chemical Name 1-(phenylmethyl)-1H-imidazole

SMILES c1ccc(cc1)Cn1cncc1

Formula $C_{10}H_{10}N_2$

M.Wt 158.2

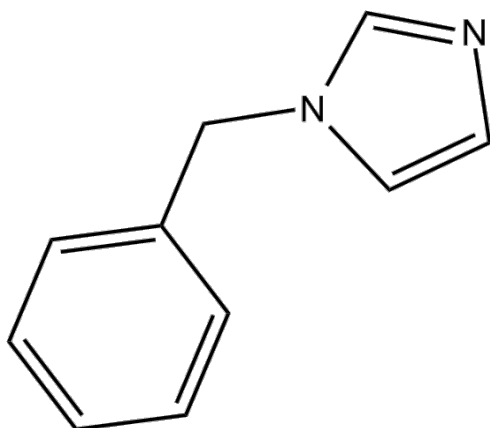
Solubility DMF: >530 μ g/ml, DMSO: >560 μ g/ml, Ethanol: >500 μ g/ml, PBS pH 7.2: >6.5 mg/ml

Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.

Structure



Background

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

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Benzylimidazole is a selective inhibitor of thromboxane synthase and a stimulator of UDP-glucuronosyltransferase [1,2].

Thromboxane synthase is a cytochrome P450 enzyme. The cytochrome P450 proteins have been involved in catalyzing many reactions involved in drug metabolism and synthesis of cholesterol, steroids, and other lipids. The enzyme plays an important role in several pathophysiological processes including hemostasis, cardiovascular disease, and stroke. The gene expresses two transcript variants [3].

1-Benzylimidazole selectively inhibited the activity of thromboxane synthase. 1-Benzylimidazole reduced TXB2 levels and increased blood flow in ischemia-reperfusion injury of rat brain [1]. In male Wistar rats, gastrically administration of 1-benzylimidazole (25, 75 and 100 mg/kg/day) caused a dose-dependent hepatomegaly. 1-Benzylimidazole decreased the plasma level in triglycerides by 60–70%. 1-benzylimidazole stimulated three distinct forms of UDP-glucuronosyltransferase. 1-benzylimidazole significantly increased the activities towards 4-methylumbelliferone, 1-naphthol, morphine or a monoterpenoid alcohol, nopol [2]. Benzylimidazole increased hepatocellular CYP1A catalytic activity and CYP1A mRNA in a concentration-dependent way [4].

References:

- [1] Pettigrew L C, Grotta J C, Rhoades H M, et al. Effect of thromboxane synthase inhibition on eicosanoid levels and blood flow in ischemic rat brain[J]. Stroke, 1989, 20(5): 627-632
- [2]. Magdalou J, Totis M, Boiteux-Antoine A F, et al. Effect of 1-benzylimidazole on cytochromes P-450 induction and on the activities of epoxide hydrolases and UDP-glucuronosyltransferases in rat liver[J]. Biochemical pharmacology, 1988, 37(17): 3297-3304.
- Shen R F, Tai H H. Thromboxanes: synthase and receptors[J]. Journal of biomedical science, 1998, 5(3): 153-172.
- [3] Shen R F, Tai H H. Thromboxanes: synthase and receptors[J]. Journal of biomedical science, 1998, 5(3): 153-172.
- [4] Navas J M, Chana A, Herradón B, et al. Induction of CYP1A by the N-imidazole derivative, 1-benzylimidazole[J]. Environmental toxicology and chemistry, 2003, 22(4): 830-836.

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