

Product Data Sheet

Product Name: 1-Dodecylimidazole

Cat. No.: GC62760

Chemical Properties

Cas. No. 4303-67-7

Formula $C_{15}H_{28}N_2$

M.Wt 236.4

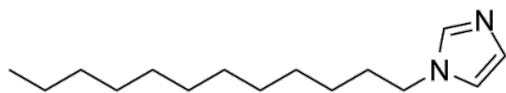
Solubility

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

1-Dodecylimidazole (N-Dodecylimidazole) is a lysosomotropic detergent and a cytotoxic agent. 1-Dodecylimidazole causes cell death by its acid-dependent accumulation in lysosomes, disruption of the lysosomal membrane, and release of cysteine proteases into the cytoplasm. 1-Dodecylimidazole has hypocholesterolaemic activity and broad-spectrum antifungal activity[1][2][3].

N-dodecylimidazole, an acid activated detergent with a pKa of 6.3, has been shown to be cytotoxic to

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cells in culture. N-dodecylimidazole displayed extracellular pH (pHe)-dependent cytotoxicity against EMT-6 and MGH U1 cells. cell killing was dose dependent and was 100-fold greater at pHe 6.0 than pHe 7.0[4].

The hypocholesterolaemic activity of 1-dodecylimidazole results in part from the inhibition of cholesterol biosynthesis at the level of 2,3-oxidosqualene sterol cyclase[2]. 1-dodecylimidazole (150 mg/kg body wt; by stomach tube; daily for 10 days) has lower serum cholesterol concentrations than control rats[2].

[1]. Wilson PD, et al. A relationship between multidrug resistance and growth-state dependent cytotoxicity of the lysosomotropic detergent N-dodecylimidazole. Biochem Biophys Res Commun. 1991;176(3):1377-1382.

[2]. Atkin SD, et al. The isolation of 2,3-oxidosqualene from the liver of rats treated with 1-dodecylimidazole, a novel hypocholesterolaemic agent. Biochem J. 1972;130(1):153-157.

[3]. Firestone RA, et al. Lysosomotropic agents. 7. Broad-spectrum antifungal activity of lysosomotropic detergents. J Med Chem. 1987;30(8):1519-1521.

[4]. Boyer MJ, et al. pH dependent cytotoxicity of N-dodecylimidazole: a compound that acquires detergent properties under acidic conditions. Br J Cancer. 1993;67(1):81-87.

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