

Polyoxyethylene stearate

Chemical Properties

CAS No. : 9004-99-3

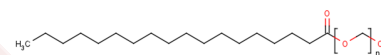
Formula: C₂₀H₄₀O₃

Molecular Weight:

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

Storage: year

Actual storage temperature shall be subject to the COA.



Biological Description

Description	Polyoxyethylene stearate (POES) is an agent of non-ionic emulsifying.
Targets(IC50)	Antibacterial,P-gp
In vitro	Polyoxyethylene stearate modulates P-gp ATPase activity in a concentration-dependent manner, reducing P-gp mediated efflux, notably enhancing the efficacy of substances like vinblastine sulfate by limiting their expulsion from cells. This compound is also recommended to augment the radiolabelled 7H12 Middlebrook TB media, significantly promoting mycobacterial growth in the BACTEC rapid culture system. Its effectiveness extends across various mycobacterial species beyond M. tuberculosis. Specifically, at concentrations of 100 or 150 µg/mL, polyoxyethylene 40 stearate substantially increases the cytotoxicity of vinblastine to K562/ADR cells. Moreover, polyoxyethylene (50) stearate markedly boosts mycobacterial growth rates and decreases detection times in cultures, illustrating its broad potential in enhancing antimicrobial and chemotherapeutic treatments.
In vivo	In the combination of polyoxyethylene 40 stearate and vinblastine, there is a significant reduction in both the average tumor volume and weight compared to the vinblastine group alone. The tumor growth inhibition rate markedly increases from 0.06 (vinblastine group) to 0.84 (vinblastine+polyoxyethylene 40 stearate group). Furthermore, polyoxyethylene stearate shows potential as a pharmaceutical excipient to enhance the oral bioavailability of drugs that are substrates for P-glycoprotein (P-gp) and certain cytochrome P450 (CYP) isoforms [2][3].

Solubility Information

Solubility	DMSO: 45 mg/mL,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,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</i>

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In vivo Formulation

vary and should be modified based on specific experimental conditions.

Reference

Cutler RR, et al. The effect of polyoxyethylene stearate (POES) on the growth of mycobacteria in radiometric 7H12 Middlebrook TB medium. *Tubercle*. 1987 Sep;68(3):209-20.

Zhu S, et al. Effects of polyoxyethylene (40) stearate on the activity of P-glycoprotein and cytochrome P450. *Eur J Pharm Sci*. 2009 Jul 12;37(5):573-80.

Luo L, et al. Polyoxyethylene 40 stearate modulates multidrug resistance and enhances antitumor activity of vinblastine sulfate. *AAPS J*. 2007 Oct 5;9(3):E329-35.

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Tel:781-999-4286 E_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481