DMG-PEG 2000

Cat. No.: HY-112764

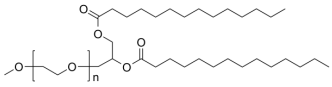
CAS No.: 160743-62-4

Molecular Formula: $C_{34}H_{66}O_6$

Target: Others

Pathway: Others

Storage: -20°C, sealed storage, away from moisture and light
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



SOLVENT & SOLUBILITY

In Vitro	DMSO : 125 mg/mL (ultrasonic and warming and heat to 60°C) H_2O : 16.67 mg/mL (Need ultrasonic)
In Vivo	1. Add each solvent one by one: 10% DMSO >> 90% saline Solubility: ≥ 10 mg/mL (Infinity mM); Clear solution 2. Add each solvent one by one: 5% DMSO >> 95% saline Solubility: ≥ 5 mg/mL (Infinity mM); Clear solution 3. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.08 mg/mL (Infinity mM); Clear solution 4. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.08 mg/mL (Infinity mM); Clear solution 5. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.08 mg/mL (Infinity mM); Clear solution

BIOLOGICAL ACTIVITY

Description	DMG-PEG 2000 is used for the preparation of liposome for siRNA delivery with improved transfection efficiency in vitro. DMG-PEG 2000 is also used for the lipid nanoparticle for an oral plasmid DNA delivery approach in vivo through a facile surface modification to improve the mucus permeability and delivery efficiency of the nanoparticles[1].
In Vitro	NP-3 (0.05-1.6 mg/mL; 24 hours) does not decrease the cytotoxicity of cells in 293T, HepG2, A549, and HeLa cell lines, but the DPPC and DMG-PEG coated nanoparticles reduce cell cytotoxicity. In addition, the transfection efficiency of DPPC/DMG-PEG/(lPEI/DNA) nanoparticles (NP-3) in 293 cells is improved, and the maximum transfection efficiency (-76% eGFP positive cells) is observed[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	NP-3 (oral administration; 150 μg DNA per mouse; single dose) at 12, 24, and 36 h postadministration, luciferin substrate is intraperitoneally injected to verify its permeability. NP-3 group maintains high luciferase expression in the liver, lung, and intestine areas 12-24 h post-treatment.Additionally, NP-3 exhibits 1.5 times higher signal intensity than that of NP-1 or NP-2 group from 12 to 24 h postoral administration[2].

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REFERENCES

[1]. Tianqi Nie, et al. Surface Coating Approach to Overcome Mucosal Entrapment of DNA Nanoparticles for Oral Gene Delivery of Glucagon-like Peptide 1.ACS Appl Mater Interfaces. 2019 Aug 21;11(33):29593-29603.

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