

Product Data Sheet

Product Name: HPPH
Cat. No.: GC33100

Chemical Properties

Cas. No. 149402-51-7

SMILES OC(CC[C@@H]([C@@H]1C)/C2=C(C3)/C4=C(C(C)=C(/C=C5C(CC)=C(C)C(/C=C6N/C(C(C)=C\6C(C)OCCCCC)=C\1=N2)=N/5)N4)C3=O)=O

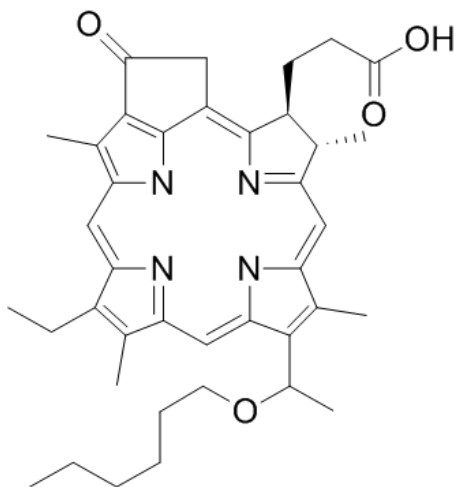
Formula $C_{39}H_{48}N_4O_4$ M.Wt 636.82

Solubility DMSO: 125 mg/mL (196.29 mM); Storage 4°C, away from moisture and light
Water: < 0.1 mg/mL (insoluble)

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



Protocol

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

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Cell experiment: 4T1 cells are cultured in 96-well cell culture plates at 1×10^4 /well for 24 h and then treated with GO-PEG-HPPH, HPPH, or GO-PEG at a series of concentrations (0.078125, 0.15625, 0.3125, 0.625, 1.25, 2.5, 5, 10, and 20 μ M). Then, 20 μ L of MTT solution (5.0 mg/mL) is added to each well. After the 4 h incubation with the MTT, the media are removed and 100 μ L of DMSO is added to solubilize the formazan crystals. The cell toxicity efficacy is measured with a microplate reader at an absorbance of 570 nm[1].

Animal experiment: Mice[2]Tumor-bearing mice are injected in the tail vein with 0.4 μ mol/kg HPPH or 5 mg/kg Porfimer sodium (PII), followed 18-24 h later by illumination to a total light dose of 48 J/cm² or 132 J/cm² delivered at a light dose-rate of 14 mW/cm². Control mice are treated with photosensitizer or light alone. Mice receiving a combination PDT regimen are treated initially with 0.4 μ mol/kg HPPH or 5 mg/kg PII followed 18-24 h later by light dose of 48 J/cm² given at 14 mW/cm²; 9 days later, mice are again injected with photosensitizer and tumors are illuminated with light at a dose of 132 J/cm² given at 14 mW/cm²[2].

References:

- [1]. Rong P, et al. Photosensitizer loaded nano-graphene for multimodality imaging guided tumor photodynamic therapy. *Theranostics*. 2014 Jan 15;4(3):229-39.
- [2]. Shams M, et al. Development of photodynamic therapy regimens that control primary tumor growth and inhibit secondary disease. *Cancer Immunol Immunother*. 2015 Mar;64(3):287-97.

Background

HPPH is a second-generation photosensitizer, which acts as a photodynamic therapy (PDT) agent. Fluorescence image of 4T1 cells incubated with 0.49 μ g/mL GO-PEG, 1 μ M HPPH (free HPPH) or equivalent amount of GO-PEG-HPPH (1 μ M HPPH and 0.49 μ g/mL GO-PEG) after 24 h. The cellular uptake of GO-PEG-HPPH and HPPH is investigated with 4T1 murine mammary cancer cells. The cells are incubated with GO-PEG-HPPH and free HPPH at equivalent HPPH concentration (1 μ M) for 24 h and then observed with a confocal microscope. Cells treated with GO-PEG-HPPH show a

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stronger fluorescence signal than those treated with free HPPH. The fluorescence of HPPH is rather weak[1].

Tumors are treated with an immune-enhancing PDT regimen followed by a tumor-controlling PDT regimen can lead to enhancement of anti-tumor immunity, while retaining effective control of primary tumor growth. To test this hypothesis, a combination treatment regimen is devised in which Colo26-HA tumor-bearing BALB/c mice are treated with an HPPH-PDT regimen known to lead to enhanced anti-tumor immunity (0.4 μ moles/kg HPPH followed 18 h later by illumination with 665 nm light for a total dose of 48 J/cm²). Following illumination, mice are rested for 9 days; on the ninth day, mice are injected with HPPH. On day 10 following the first treatment, tumors are treated with a tumor control treatment regimen (illumination with 665 nm light for a total dose of 132 J/cm² given)[2].

References:

- [1]. Rong P, et al. Photosensitizer loaded nano-graphene for multimodality imaging-guided tumor photodynamic therapy. *Theranostics*. 2014 Jan 15;4(3):229-39.
- [2]. Shams M, et al. Development of photodynamic therapy regimens that control primary tumor growth and inhibit secondary disease. *Cancer Immunol Immunother*. 2015 Mar;64(3):287-97.

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