Temoporfin

Cat. No.: HY-16488

CAS No.: 122341-38-2

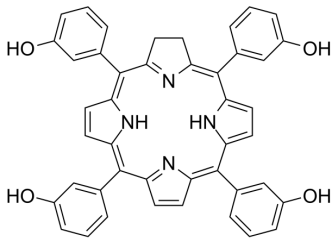
Molecular Formula: $C_{44}H_{32}N_4O_4$

Molecular Weight: 680.75

Target: Reactive Oxygen Species

Pathway: Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB

Storage: -20°C, protect from light, stored under nitrogen
* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light, stored under nitrogen)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 20.83 mg/mL (30.60 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	1.4690 mL	7.3448 mL	14.6897 mL
	5 mM	0.2938 mL	1.4690 mL	2.9379 mL
	10 mM	0.1469 mL	0.7345 mL	1.4690 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 1 mg/mL (1.47 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 1 mg/mL (1.47 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Temoporfin (m-THPC), a reduced porphyrin, is a potent second-generation photosensitizer. Temoporfin can be used in the research of photodynamic therapy (PDT) for head and neck cancers[1][2][3].

In Vitro

A detailed confocal fluorescence microscopy study of a human adenocarcinoma shows weak localization of Temoporfin in lysosomes and mitochondria. Instead, it is found to be localized in the endoplasmic reticulum (ER) and the Golgi apparatus [1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

Temoporfin in liver tissue decreases rapidly in time after initial high levels at 4 h after administration (0.1-0.3 mg/kg). In tumour tissue no decrease in photosensitizer levels occurred, with Temoporfin remaining high up to 48 h after administration[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Nucleic Acids Res. 2023 May 16;gkad365.
- Theranostics. 2018 Feb 4;8(5):1435-1448.
- Cell Death Dis. 2020 Oct 31;11(10):938.
- Cancers (Basel). 2022, 14(11), 2724.
- Am J Transl Res. 2020 Sep 15;12(9):5080-5094.

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REFERENCES

[1]. Senge MO, et, al. Temoporfin (Foscan®, 5,10,15,20-tetra(m-hydroxyphenyl)chlorin)--a second-generation photosensitizer. Photochem Photobiol. 2011 Nov-Dec;87(6):1240-96.

[2]. Rovers JP, et, al. Effective treatment of liver metastases with photodynamic therapy, using the second-generation photosensitizer meta-tetra(hydroxyphenyl)chlorin (mTHPC), in a rat model. Br J Cancer. 1999 Oct;81(4):600-8.

[3]. Reshetov V, et, al. Photodynamic therapy with conventional and PEGylated liposomal formulations of mTHPC (temoporfin): comparison of treatment efficacy and distribution characteristics in vivo. Int J Nanomedicine. 2013;8:3817-31.

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