Methyl pyropheophorbide-a

Cat. No.: HY-137473

CAS No.: 6453-67-4

Molecular Formula: $C_{34}H_{36}N_4O_3$

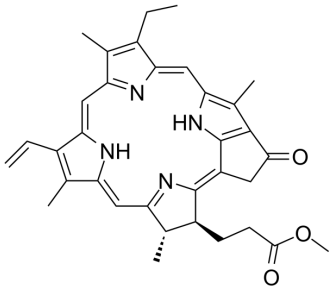
Molecular Weight: 548.67

Target: Apoptosis

Pathway: Apoptosis

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 2.5 mg/mL (4.56 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	1.8226 mL	9.1129 mL	18.2259 mL
	5 mM	---	---	---
	10 mM	---	---	---

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

BIOLOGICAL ACTIVITY

Description

Methyl pyropheophorbide-a (Pyropheophorbide-a methyl ester), a chlorophyll-a derivative, is a potent photosensitizer that can be used in photodynamic therapy (PDT) of cancer. Methyl pyropheophorbide-a has photodynamic activity and can induce apoptosis and inhibit tumor growth[1][2].

In Vitro

Pyropheophorbide-a methyl ester (2 μM; 12 h) inhibits the cell cycle progression from the G0/G1-phases and induces apoptosis at the light dosage of 55.6 kJ/m^2 in PC-3M cells[2].
Pyropheophorbide-a methyl ester (0.2-15 μM; 20 h) has no significant dark cytotoxicity in NCI-h446 cells[1].
Pyropheophorbide-a methyl ester (0.1-15 μM; 20 h) mediates a dose-dependent photocytotoxicity in the NCI-h446 cells[1].
Pyropheophorbide-a methyl ester (2-4 μM; 0-24 h) induces apoptosis of NCI-h446 cells in a time-dependent manner[1].
Pyropheophorbide-a methyl ester (0.5-4 μM; 0-20 h) shows a photocytotoxicity in PC-3M cells[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Apoptosis Analysis[1]

Cell Line:	PC-3M cells

Concentration:	2 μM
Incubation Time:	12 h
Result:	Apoptosis rate was about 0.27%, 6.15%, 20.49%, 50.76%, 65.39%, 64.92%, and 64.37% at 1, 3, 6, 12, 18, and 24 h posttreatment, respectively under the conditions of LC_{75} (2 μM+55.6 kJ/m^2).

In Vivo

Pyropheophorbide-a methyl ester (15 mg/kg; tail vein and topical injection) inhibits the growth of PC-3M tumors in mice[2].

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Animal Model:	Male BALB/c nude mice (6-8 weeks, 16-20 g) bearing PC-3M tumor[2]
Dosage:	15 mg/kg
Administration:	Tail vein injection and topical injection
Result:	The tumor volume and the weight inhibition rate were 46.78%, 41.84% in tail vein injection group and 78.66%, 72.07% in topical injection group, respectively.

REFERENCES

[1]. Sun X, et, al. Photodynamic therapy with pyropheophorbide-a methyl ester in human lung carcinoma cancer cell: efficacy, localization and apoptosis. Photochem Photobiol. 2002 Jun;75(6):644-51.

[2]. Tian Y, et, al. Cell death induced by MPPa-PDT in prostate carcinoma in vitro and in vivo. Biochem Biophys Res Commun. 2006 Sep 22;348(2):413-20.

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

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