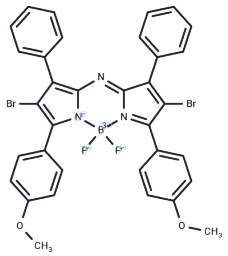
Data Sheet (Cat.No.T40575)

TargetMol

ADPM06

Chemical Properties



CAS No. : 490035-90-0

Formula: C34H24BBr2F2N3O2

Molecular Weight: 715.19

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	ADPM06, an azadipyrromethene compound, is a new nonporphyrin photodynamic therapeutic (PDT) agent with potential as a lead candidate. It demonstrates significant IC50 values in the micro-molar range in human tumor cells, as well as inducing apoptosis.
Targets(IC50)	Apoptosis,Others
In vitro	The effectiveness of ADPM01 is completely nullified at a 1% oxygen level in HeLa and MRC5 cell lines. Conversely, ADPM06 shows only a slight decrease in its light-activated functionality under low oxygen (hypoxic) conditions compared to normal oxygen (normoxic) levels[1]. The photochemical therapy with ADPM06 (ADPM06-PDT) triggers both endoplasmic reticulum (ER) stress and the unfolded protein response, leading to apoptosis through the activation of caspases[2]. Additionally, ADPM06-PDT promotes a rapid, spliceosome-independent splicing of XBP1 mRNA by activated inositol-requiring enzyme 1 (IRE1), illustrating a post-transcriptional modification. This apoptosis induced by ADPM06-PDT is also characterized by the production of reactive oxygen species (ROS) [2]. In a Cell Viability Assay conducted on HeLa and MRC5 cell lines at concentrations ranging from 1 nM to 100μM and an incubation time of 24 hours, ADPM06 maintained significant effectiveness, exhibiting half-maximal effective concentration (EC50) values of 1.5 and 1.6 × 10?6 M for HeLa and MRC5 cells, respectively[1].
In vivo	ADPM06-PDT has initiated apoptosis and triggered an ER stress response in vivo[2]. It is well-tolerated and demonstrates significant complete response rates across diverse cancer models with a short drug-light interval[2]. In female Balb C nu/nu mice[2], a dosage of 2 mg/kg in a 0.3 mL solution was administered intravenously via the lateral tail vein, leading to a rapid decrease in tumor-specific luciferase activity within 1 hour post-PDT, with further reduction observed 4 hours post-PDT.

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.3982 mL	6.9911 mL	13.9823 mL
5 mM	0.2796 mL	1.3982 mL	2.7965 mL
10 mM	0.1398 mL	0.6991 mL	1.3982 mL
50 mM	0.028 mL	0.1398 mL	0.2796 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

W M Gallagher, et al. A potent nonporphyrin class of photodynamic therapeutic agent: cellular localisation, cytotoxic potential and influence of hypoxia. Br J Cancer. 2005 May 9; 92(9): 1702-1710.
Aisling E O'Connor, et al. Mechanism of cell death mediated by a BF2-chelated tetraaryl-azadipyrromethene photodynamic therapeutic: dissection of the apoptotic pathway in vitro and in vivo. Int J Cancer. 2012 Feb 1;130 (3):705-15.