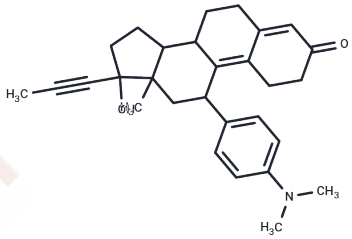
Data Sheet (Cat.No.T1102)

TargetMol

Mifepristone

Chemical Properties



CAS No. : 84371-65-3

Formula: C29H35NO2

Molecular Weight: 429.59

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	Mifepristone (C-1073) is a progesterone-receptor (IC50=0.2 nM) and glucocorticoid-receptor antagonist (IC50=2.6 nM). Mifepristone is used to terminate pregnancy, treat uterine fibroids, and treat endometriosis.
Targets(IC50)	Glucocorticoid Receptor,Estrogen/progestogen Receptor,Endogenous Metabolite,NO Synthase,Autophagy,Progesterone Receptor
In vitro	**METHODS**: Human MCF7 cells were treated with Mifepristone (1-100 μM) for 72 hours, and the growth inhibition of the cells was detected by the CCK-8 method. **RESULTS**: Mifepristone inhibited the growth of MCF7 cells (IC50=24.03 μM). [1] **METHODS**: Ovarian cancer cells SK-OV-3 and OV2008 were treated with Mifepristone (5, 10, 15, 20 μM) for 3 days, and the number of surviving cells was evaluated using trypan blue staining elimination (Sigma). **RESULTS**: Mifepristone dose-dependently inhibited the growth of SK-OV-3 cells (IC50=6.25 μM) and OV2008 cells (IC50=6.91 μM). [2]
In vivo	**METHODS**: To study the anti-tumor activity of Mifepristone, Mifepristone (2 mg/kg) was subcutaneously injected into a nude mouse model of cervical tumor xenotransplantation for 3 consecutive days. Then Cisplatin (3 mg/kg) was intraperitoneally injected into nude mice for 3 consecutive days. **RESULTS**: Tumor growth was inhibited when treated with Cisplatin alone. The combination of Cisplatin and Mifepristone led to a more significant reduction in tumor weight, reducing it by approximately 50%. [3] **METHODS**: To study the anti-tumor activity of Mifepristone, Mifepristone (0.5, 1 mg/kg) was subcutaneously implanted into the subcutaneous graft tumor model established in nude mice by the SK-OV-3 ovarian cancer cell line. **RESULTS**: Mifepristone significantly inhibited tumor growth in a dose-dependent manner, and the effect was observed 20 days after the start of treatment. [2] **METHODS**: To study the anti-tumor activity of Mifepristone, Mifepristone (50 mg/kg) was subcutaneously injected into the subcutaneous graft tumor model established in nude mice by the MKN-45 gastric cancer cell line. **RESULTS**: Mifepristone significantly reduced the number of lung metastases. In transplanted tumors, Mifepristone downregulated the expressions of vascular endothelial growth factor (VEGF) and microvessel density (MVD). [4] **METHODS**: To study the anti-tumor activity of Mifepristone, Mifepristone (15 mg/kg) was subcutaneously injected into the subcutaneous transplanted tumor model established by the SK-N-SH neuroblastoma cell line in nude mice twice a week for a total of six

In vivo	times. **RESULTS**: Mifepristone significantly inhibited tumor growth, with an inhibition rate as high as 80%. The volume and weight of the tumor were significantly reduced after Mifepristone treatment. [5]
Kinase Assay	Glucocorticoid receptor (GR) antagonist activity, Progesterone receptor (PR) antagonist activity: T47D alkaline phosphatase assay: T47D human breast cancer cells are plated in 96-well tissue culture plates at 104 cells per well in assay medium [RPMI medium without phenol red containing 5% (v/v) charcoal-treated FBS and 1% (v/v) penicillin-streptomycin]. Two days later, the medium is decanted and Mifepristone or control is added at a final concentration of 0.1% (v/v) dimethylsulfoxide in fresh assay medium. Twenty-four hours later, an alkaline phosphatase assay is performed using a SEAP kit. The medium is decanted and the cells are fixed for 30 minutes at room temperature with 5% (v/v) formalin. The cells are washed once at room temperature with Hanks' buffered saline solution. Equal volumes (0.05 mL) of dilution buffer, assay buffer, and 1:20 substrate/enhancer mixture are then added. After 1-hour incubation in the dark at room temperature, the lysate is transferred to a white 96-well plate and luminescence is read using a LuminoSkan Ascen. A549 reporter assay: A549 human lung carcinoma cells are washed with OPTI-MEM I. The medium is removed and lipid-DNA complex solution (1.5 μg/mL of GRE-luciferase reporter DNA in 8.5 mL OPTI-MEM I plus 6 μL/mL DMRIE-C reagent in 8.5 mL OPTI-MEM I, combined, mixed and incubated at room temperature for 40 minutes) is overlayed onto the cells in a T160 flask. The cells are incubated for 16 hours at 37 °C in a CO2 incubator. The DNA-containing medium is removed and 30 mL of growth medium containing 5% (v/v) charcoal-treated fetal bovine serum is added. After 5-6 hours, the cells are seeded in 96-well plates and incubated overnight at 37 °C. Mifepristone is then added to each well followed by dexamethasone as a corticoid challenge. The cells are incubated for 24 hours. Luciferase assay buffer is added to each well and the cells are incubated for 30 minutes at room temperature.Luciferase activity is measured in a DYNEX Microlite plate on a TopCount.
Cell Research	Cell growth is evaluated in various ovarian cancer cell lines that are subjected to dose-response or time course treatments. Media containing each of the doses of fresh steroids is replaced every 24 hours. Control groups of cells are treated with vehicle ethanol at a final concentration of less than 0.05%. Number of viable cells is evaluated by trypsinization and counting in a hemocytometer chamber using trypan blue dye exclusion. Experiments are conducted in media without phenol red and supplemented with charcoal extracted fetal bovine serum, or media containing unextracted serum and having phenol red. Similar results are obtained with both media preparations; therefore, after performing the growth curves, all subsequent experiments are conducted using media with unextracted serum and in the presence of phenol red. When indicated, the proliferation IC50s are calculated using software designed to study drug interaction. (Only for Reference)

Solubility Information

Solubility	DMSO: 255 mg/mL (593.59 mM),Sonication is recommended. Ethanol: 21.5 mg/mL (50.05 mM),Heating is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 4.3 mg/mL (10.01 mM),Suspension. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.3278 mL	11.639 mL	23.278 mL
5 mM	0.4656 mL	2.3278 mL	4.6556 mL
10 mM	0.2328 mL	1.1639 mL	2.3278 mL
50 mM	0.0466 mL	0.2328 mL	0.4656 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

Qin J, et al. Rational design and synthesis of 6-aryl-6H-benzo[c]chromenes as non-steroidal progesterone receptor antagonists for use against cancers. Bioorg Med Chem. 2021 Feb 15;32:116003.
Zhao X, Li F, Cheng C, et al.Social isolation promotes tumor immune evasion via β2-adrenergic receptor.Brain, Behavior, and Immunity.2024
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Jurado R, et al. Cisplatin cytotoxicity is increased by mifepristone in cervical carcinoma: an in vitro and in vivo study. Oncol Rep. 2009 Nov;22(5):1237-45.
Li DQ, et al. Effects of mifepristone on invasive and metastatic potential of human gastric adenocarcinoma cell line MKN-45 in vitro and in vivo. World J Gastroenterol. 2004 Jun 15;10(12):1726-9.
Casulari LA, et al. Antiproliferative effect of mifepristone (RU486) on human neuroblastoma cells (SK-N-SH): in vitro and in vivo studies. Braz J Med Biol Res. 2020 Oct 7;53(11):e10067.