CD437

Cat. No.: HY-100532

CAS No.: 125316-60-1

Molecular Formula: $C_{27}H_{26}O_3$

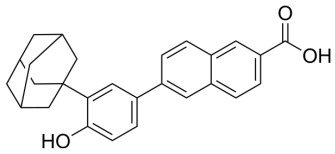
Molecular Weight: 398.49

Target: RAR/RXR; Autophagy

Pathway: Metabolic Enzyme/Protease; Vitamin D Related/Nuclear Receptor; Autophagy

Storage: 4°C, protect from light

* In solvent : -80°C, 2 years; -20°C, 1 year (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 150 mg/mL (376.42 mM; Need ultrasonic and warming)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.5095 mL	12.5474 mL	25.0947 mL
	5 mM	0.5019 mL	2.5095 mL	5.0189 mL
	10 mM	0.2509 mL	1.2547 mL	2.5095 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: ≥ 2.5 mg/mL (6.27 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.5 mg/mL (6.27 mM); Suspended solution; Need ultrasonic
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (6.27 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

CD437 is a selective Retinoic Acid Receptor γ (RARγ) agonist.

IC_{50} & Target

Retinoic Acid Receptor γ (RARγ)[1]

In Vitro

CD437 is a selective RARγ agonist. Growth inhibition by CD437 in these lung cancer cell lines is apparent after 2 days of treatment with 10 μM CD437. Dose-response experiments demonstrate that CD437 reduces the numbers of H460, SK-MES-1, A549, and H292 cells with 50% inhibitory values of approximately 0.5, 0.4, 3, and 0.85 μM, respectively[1].
Treatment for 72 h with CD437 causes a strong dose-dependent growth inhibition in all melanoma cell lines. At a concentration of 5 μM CD437, only about 5 to 25% of the cells remain viable after 3 d. The concentrations of CD437 required

	for 50% growth inhibition (IC50) range from 10 μM for MeWo to 0.1 μM for SK-Mel-23 showing the highest sensitivity[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Tumors in CD437-treated mice stop growing, an effect that becomes already statistically significant (P<0.01) at day 13, 3 d after first administration of CD437, and is maintained for more than 3 wk after discontinuation of treatment. Further histologic analysis demonstrates marked c-fos mRNA levels at the tumor-stroma edge in CD437-treated tumors[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [1]	For morphological analysis, cells are treated with 10 μM CD437, trypsinized, washed with phosphate-buffered saline (PBS), fixed with 3.7% paraformaldehyde, and stained with 50 μg of 4,6-diamidino-2-phenylindole (DAPI) per mL containing 100 μg of DNase-free RNase A per mL to visualize the nuclei. Stained cells are examined by fluorescence microscopy. For the terminal deoxynucleotidyl transferase (TdT) assay, cells are treated with or without 10 μM CD437. After treatment, cells are trypsinized, washed with PBS, fixed in 1% formaldehyde in PBS, washed with PBS, resuspended in 70% ice-cold ethanol, and immediately stored at -20°C overnight. Cells are then labeled with biotin-16-dUTP by terminal transferase and stained with avidin-FITC (fluorescein isothiocyanate). The labeled cells are analyzed with a flow cytometer[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [2]	Male Swiss-nu/nu mice weighing 20 to 25 g are used in this study. Mice are kept under sterile conditions at 24 to 26°C room temperature, 50% relative humidity, and 12 h light-dark rhythm in laminar flow shelves and are supplied with autoclaved food and bedding. For treatment of melanoma xenografts, previously established MeWo melanoma tumors of 1 to 2 mm in diameter are implanted into the right flank of animals. After tumor growth for 10 d, groups of mice (n=8) are either treated with saline p.o. or are injected intratumorally for 3 wk or are fed with various concentrations of CD437 (10 mg/kg/body weight and 30 mg/kg/body weight). In addition, tumors of a fifth group are injected with CD437 (10 mg/kg/body weight) each day. Mice are visited daily and growing tumors are measured twice weekly with a caliperlike instrument[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Arch Toxicol. 2023 May 8.
- Mediators Inflamm. 2022 Nov 7;2022:1875736.

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REFERENCES

[1]. Li Y, et al. Molecular determinants of AHPN (CD437)-induced growth arrest and apoptosis in human lung cancer cell lines. Mol Cell Biol. 1998 Aug;18(8):4719-31.

[2]. Schadendorf D, et al. Treatment of melanoma cells with the synthetic retinoid CD437 induces apoptosis via activation of AP-1 in vitro, and causes growth inhibition in xenografts in vivo. J Cell Biol. 1996 Dec;135(6 Pt 2):1889-98.

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