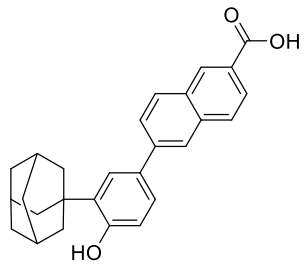
Product data sheet

MedKoo Cat#: 532771 Name: CD437 CAS#: 125316-60-1 Chemical Formula: $C_{27}H_{26}O_3$ Exact Mass: 398.1882 Molecular Weight: 398.5	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:
CD437 is a synthetic retinoid that is an RARγ-selective agonist. It displays RARγ-dependent and -independent effects on differentiation and apoptosis. CD437 induces apoptosis and acts synergistically with TRAIL receptor-2 agonist in malignant melanoma. CD437 inhibits DNA replication in cells and recombinant POLA1 activity in vitro.

2. CoA, QC data, SDS, and handling instruction
SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	150	376.42

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	**1 mg**	**5 mg**	**10 mg**
1 mM	2.51 mL	12.55 mL	25.09 mL
5 mM	0.50 mL	2.51 mL	5.02 mL
10 mM	0.25 mL	1.25 mL	2.51 mL
50 mM	0.05 mL	0.25 mL	0.50 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator
Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study
In vitro study

1. Watanabe Y, Tsuchiya H, Sakabe T, Matsuoka S, Akechi Y, Fujimoto Y, Yamane K, Ikeda R, Nishio R, Terabayashi K, Ishii K, Gonda K, Matsumi Y, Ashla AA, Okamoto H, Takubo K, Tomita A, Hoshikawa Y, Kurimasa A, Itamochi H, Harada T, Terakawa N, Shiota G. CD437 induces apoptosis in ovarian adenocarcinoma cells via ER stress signaling. Biochem Biophys Res Commun. 2008 Feb 15;366(3):840-7. doi: 10.1016/j.bbrc.2007.12.028. Epub 2007 Dec 17. PMID: 18082618.

2. Han T, Goralski M, Capota E, Padrick SB, Kim J, Xie Y, Nijhawan D. The antitumor toxin CD437 is a direct inhibitor of DNA polymerase α. Nat Chem Biol. 2016 Jul;12(7):511-5. doi: 10.1038/nchembio.2082. Epub 2016 May 16. PMID: 27182663; PMCID: PMC4912453.

In vivo study

1. Schadendorf D, Kern MA, Artuc M, Pahl HL, Rosenbach T, Fichtner I, Nürnberg W, Stüting S, von Stebut E, Worm M, Makki A, Jurgovsky K, Kolde G, Henz BM. 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. doi: 10.1083/jcb.135.6.1889. PMID: 8991099; PMCID: PMC2133968.

2. Parrella E, Giannì M, Fratelli M, Barzago MM, Raska I Jr, Diomede L, Kurosaki M, Pisano C, Carminati P, Merlini L, Dallavalle S, Tavecchio M, Rochette-Egly C, Terao M, Garattini E. Antitumor activity of the retinoid-related molecules (E)-3-(4'-hydroxy-3'-adamantylbiphenyl-4-yl)acrylic acid (ST1926) and 6-[3-(1-adamantyl)-4-hydroxyphenyl]-2-naphthalene carboxylic acid (CD437) in F9 teratocarcinoma: Role of retinoic acid receptor gamma and retinoid-independent pathways. Mol Pharmacol. 2006 Sep;70(3):909-24. doi: 10.1124/mol.106.023614. Epub 2006 Jun 20. PMID: 16788091.

7. Bioactivity

Biological target:

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

In vitro activity

A synthetic retinoid, CD437, has been shown to exert potent anti-tumor activity against various types of cancer cell lines, regardless of their sensitivities to natural retinoids. It was herein demonstrated that CD437 induces endoplasmic reticulum (ER) stress, including the up-regulation of CHOP, BIP and GADD34 mRNA through ER stress transducer (PERK and IRE1alpha) activation in an ovarian adenocarcinoma cell line, SKOV3. It was also shown that CD437 induced the CHOP and GADD34 expressions in another four ovarian adenocarcinoma cell lines, indicating that CD437 functions as an ER stress inducer in these cell lines. Moreover, the siRNA-mediated knockdown of inducible CHOP expression prevented the cytotoxic effect of CD437. These results suggest that ER stress plays an important role in the mechanism by which CD437 induces apoptosis in ovarian adenocarcinoma cells.

Reference: Biochem Biophys Res Commun. 2008 Feb 15;366(3):840-7. https://linkinghub.elsevier.com/retrieve/pii/S0006-291X(07)02657-5

In vivo activity

CD437 also exhibited a strong growth inhibitory effect on MeWo melanoma cells in a xenograft model. In tissue sections of CD437-treated MeWo tumors from these animals, apoptotic melanoma cells and c-fos overexpressing cells were colocalized by TdT-mediated deoxyuridine triphosphate-digoxigenin nick end labeling (TUNEL) staining and in situ hybridization. Taken together, this report identifies CD437 as a retinoid that activates and upregulates the transcription factor AP-1, leading eventually to programmed cell death of exposed human melanoma cells in vitro and in vivo.

Reference: J Cell Biol. 1996 Dec;135(6 Pt 2):1889-98. https://www.ncbi.nlm.nih.gov/pmc/articles/pmid/8991099/

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.