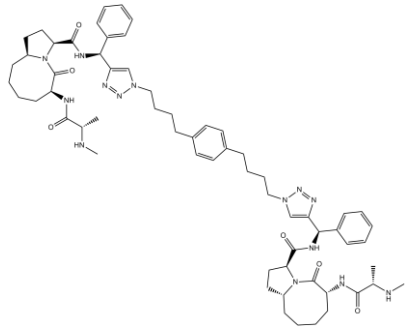
Product Name: SM-164

Revision Date: 6/30/2016

Product Data Sheet

Chemical Properties



Product Name: SM-164

Cas No.: 957135-43-2

M.Wt: 1121.42

Formula: C62H84N14O6

Chemical Name: (3S,6R,10aR)-6-((S)-2-(methylamino)propanamido)-N-((R)-(1-(4-(4-(4-(4-((S)-((3S,6S,10aS)-6-((S)-2-(methylamino)propanamido)-5-oxodecahydropyrrolo[1,2-a]azocine-3-carboxamido)(phenyl)methyl)-1H-1,2,3-triazol-1-yl)butyl)phenyl)butyl)-1H-1,2,3-triazol-4-yl)(

Canonical SMILES: O=C([C@H]1N(C([C@@H](NC([C@H](C)NC)=O)CCCC2)=O)[C@]2([H])CC1)N[C@H](C3=CN(CCCCC4=CC=C(CCCCN5C=C([C@H](NC([C@@H]6CC[C@](CCCC[C@@H]7NC([C@@H](NC)C)=O)([H])N6C7=O)=O)C8=CC=CC=C8)N=N5)C=C4)N=N3)C9=CC=CC=C9

Solubility: >56.1mg/mL in DMSO

Storage: Store at -20°C

General tips: For obtaining a higher solubility , please warm the tube at 37° C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20° C for several months.

Shopping Condition: Evaluation sample solution : ship with blue ice
All other available size: ship with RT , or blue ice upon request

Biological Activity

Targets : IAP

Pathways: Apoptosis >> IAP

Description:

SM-164 is a bivalent mimetic of Smac with Ki values of 0.31 nM, 1.1 nM and 0.56 nM for cIAP-1, cIAP-2 and XIAP, respectively 1.

SM-164 is developed as an anticancer agent. It plays its antitumor roles through inducing degradation of cellular inhibitor of apoptosis protein (cIAP)-1/2, antagonizing X-linked inhibitor of apoptosis protein (XIAP) and inducing TNFα–dependent apoptosis in tumor cells. SM-164 is a bivalent mimetic containing two SM-122 analogues. It binds to cIAP-1 protein containing bothBIR2 and BIR3 domains, cIAP-2 BIR3 protein and XIAP protein containing both BIR2 and BIR3 domains with Ki values of 0.31 nM, 1.1 nM and 0.56 nM, respectively. In tumor cells, treatment of SM-164 significantly reduced cIAP-1 level to undetectable levels (1nM, 60min), effectively antagonized cellular XIAP and enhanced TNFα secretion. In the MDA-MB-231 xenograft model, administration of SM-164 at dose of 5mg/kg markedly decreased cIAP-1 level within 1 hour and activated caspase-8, caspase-9 and caspase-3 at 3 hour 1.

***Reference**:*

1. Lu J, Bai L, Sun H, et al. SM-164: a novel, bivalent Smac mimetic that induces apoptosis and tumor regression by concurrent removal of the blockade of cIAP-1/2 and XIAP. Cancer research, 2008, 68(22): 9384-9393.

Protocol

Cell experiment:

Cell lines	MDA-MB-231 breast cancer cell
Preparation method	Limited solubility. General tips for obtaining a higher concentration: Please warm the tube at 37 ℃ for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored below -20℃ for several months.
Reacting conditions	12 h-48 h
Applications	12 h 1 nmol/L SM-164 treatment induces 32%, 33%, and 37% of the MDA-MB-231, SK-OV-3 and MALME-3M cells to undergo apoptosis. SM-164 also leads to cIAP-1 degradation in resistant cancer cell line and effectively antagonizes cellular XIAP. Moreover, 3 to 10 nmol/L SM-164 induces cell death with or without TNFα in all these sensitive cancer cell lines.

Animal experiment [3]:

Animal models	MDA-MB-231 xenograft tumor mice model
Dosage form	A single i.v. dose of SM-164 at 5 mg/kg.
Applications	At the 3-hour time point, SM-164 induces prominent apoptosis in tumor tissues, and more than 50% of tumor cells were TUNEL positive at the 6-hour time point. SM-164 reduces the tumor volume from 147 ± 54 mm3 (day 25-start of the treatment) to 54 ±

	32 mm3 (day 36-end of treatment), a 65% reduction. SM-164 treatment also shows no significant weight loss or sign of toxicity.
Other notes	Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.

***Reference**:*

1. Lu J, Bai L, Sun H, Nikolovska-Coleska Z et al.SM-164: a novel, bivalent Smac mimetic that induces apoptosis and tumor regression by concurrent removal of the blockade of cIAP-1/2 and XIAP. Cancer Res. 2008 Nov 15;68(22):9384-93.

Product Citations

1. Chen X, He WT, et al."Pyroptosis is driven by non-selective gasdermin-D pore and its morphology is different from MLKL channel-mediated necroptosis." Cell Res. 2016 Sep;26(9):1007-20. PMID:27573174

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most ApexBio products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Shortterm storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.

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