Product Data Sheet

Chemical Properties

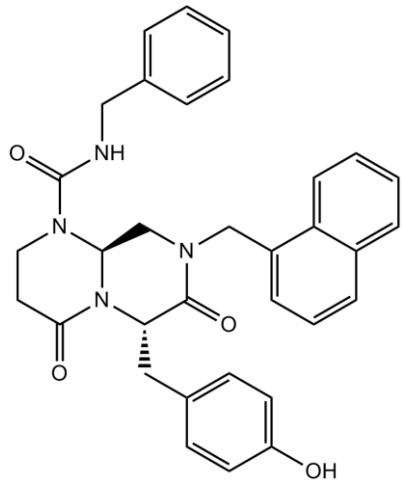
Product Name: ICG 001

Cas No.: 847591-62-2

M.Wt: 548.63

Formula: C33H32N4O4

Synonyms: N/A



Chemical Name: (6S,9aS)-N-benzyl-6-[(4-hydroxyphenyl)methyl]-8-(naphthalen-1-ylmethyl)-4,7-dioxo-3,6,9,9a-tetrahydro-2H-pyrazino[1,2-a]pyrimidine-1-carboxamide

Canonical SMILES: C1CN(C2CN(C(=O)C(N2C1=O)CC3=CC=C(C=C3)O)CC4=CC=CC5=CC=CC=C54)C(=O)NCC6=CC=CC=C6

Solubility: ≥27.4315mg/mL in DMSO, ≥35.47 mg/mL in EtOH with ultrasonic, <2.14 mg/mL in H2O

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 : Stem Cell

Pathways: Wnt/β-catenin

Description:

ICG001 is a small molecule inhibitor that targets Wnt/β-catenin pathway. It inhibits TCF/β-catenin mediated transcription by competing with β-catenin for CBP (CREB binding protein) but not p300 binding with an IC50 of 3 μM [1]. It can be used to specifically evaluate the role of CBP/beta-catenin association on WNT signaling and cell physiology.
ICG001 have been shown to selectively inhibit colon carcinoma cell lines (SW480 and HCT-116 cells) but not normal colonic epithelial cells (CCD-841Co). It is also efficacious in the Min mouse and nude mouse xenograft models of colon cancer [1]. ICG-001 is a potent inhibitor of GBM stem cells in culture. ICG001 selectively inhibits Wnt/beta-catenin/CREB binding protein (CBP) signaling to reverses pulmonary fibrosis and ameliorate experimental dermal fibrosis in experimental models [2,3]. ICG001 is currently in clinical trial for colon cancer and leukemias.

***Reference**:*

[1]Emami KH, Nguyen C, Ma H, Kim DH, Jeong KW, Eguchi M, Moon RT, Teo JL, Kim HY, Moon SH, Ha JR, Kahn M. A small molecule inhibitor of beta-catenin/CREB-binding protein transcription. Proc Natl Acad Sci U S A. 2004 Aug 24;101(34):12682-7.
[2]Henderson WR Jr1, Chi EY, Ye X, Nguyen C, Tien YT, Zhou B, Borok Z, Knight DA, Kahn M. Inhibition of Wnt/beta-catenin/CREB binding protein (CBP) signaling reverses pulmonary fibrosis. Proc Natl Acad Sci U S A. 2010 Aug 10;107(32):14309-14.
[3]Beyer C, Reichert H, Akan H, Mallano T, Schramm A, Dees C, Palumbo-Zerr K, Lin NY, Distler A, Gelse K, Varga J, Distler O, Schett G, Distler JH. Blockade of canonical Wnt signalling ameliorates experimental dermal fibrosis. Ann Rheum Dis. 2013 Jul;72(7):1255-8.

Protocol

Cell experiment:

Cell lines	Rat Epicardial Cells
Preparation method	The solubility of this compound in DMSO is >10 mM. General tips for obtaining a higher concentration: Please warm the tube at 37 °C for 10 minutes and/or shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C for several months.
Reacting conditions	10 μM, 24 hours
Applications	The rat EMCs were treated with either ICG-001 or IQ1 and performed co-immunoprecipitation (co-IP) assays. Cells were treated with DMSO, ICG-001 or IQ1 for 24 hours. In the DMSO control treated cells, essentially all of the β-catenin was associated with CBP. Treatment with IQ1 had minimal effects on β-catenin coactivator usage. However, as anticipated, treatment with ICG-001 decreased the β-catenin/CBP interaction, while concomitantly increasing the β-catenin/p300 interaction.

Animal experiment [3]:

Animal models	Female Sprague-Dawley rats
Dosage form	Subcutaneous injection, 50 mg/kg/day
Applications	The left coronary artery of the rats was permanently occluded via surgery to induce regional ischemic injury to the left ventricle. ICG-001 was administered to the rats beginning on the day of surgery for 10 days. Four weeks after surgery (20 days after the last ICG-001 treatment), left ventricular ejection fraction was assessed by angiography as an indicator of cardiac contractile function. ICG-001 significantly improved ejection fraction by 8.4% from 46.2±1.7% to 54.6±3.4% ($P < 0.05$). This data demonstrates that ICG-001 significantly improved cardiac contractile function after myocardial infarction in the rats.
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] Sasaki T, Hwang H, Nguyen C, et al. The small molecule Wnt signaling modulator ICG-001 improves contractile function in chronically infarcted rat myocardium. PloS one, 2013, 8(9): e75010.

Product Citations

1. Zhou J, Toh SH, et al. "A loss-of-function genetic screening reveals synergistic targeting of AKT/mTOR and WTN/β-catenin pathways for treatment of AML with high PRL-3 phosphatase." J Hematol Oncol. 2018 Mar 7;11(1):36. PMID:29514683

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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