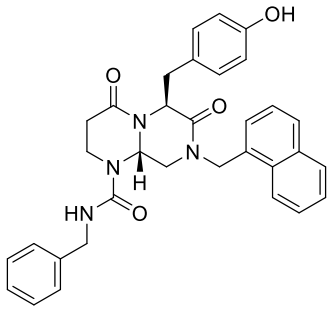
Product data sheet

MedKoo Cat#: 206608 Name: ICG001 CAS#: 780757-88-2 (ICG001) Chemical Formula: $C_{33}H_{32}N_4O_4$ Exact Mass: 548.2424 Molecular Weight: 548.643	
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:
ICG-001 is a potent and selective Wnt signaling modulator. ICG-001 modulates Wnt signaling and increased the expression of genes beneficial for cardiac regeneration in epicardial cells. ICG-001 binds cAMP-responsive element binding (CREB)-binding protein (CBP) to disrupt its interaction with β-catenin and inhibit CBP function as a coactivator of Wnt/β-catenin-mediated transcription. ICG-001 induces cytotoxicity of multiple myeloma cells in Wnt-independent manner. Note: Chemical structures of ICG-001 and PRI-724 look very close, but they are not the same molecule. Many vendors confused them.

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	30	54.68

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.82 mL	9.11 mL	18.23 mL
5 mM	0.36 mL	1.82 mL	3.65 mL
10 mM	0.18 mL	0.91 mL	1.82 mL
50 mM	0.04 mL	0.18 mL	0.36 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. 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 [corrected]. Proc Natl Acad Sci U S A. 2004 Aug 24;101(34):12682-7. doi: 10.1073/pnas.0404875101. Epub 2004 Aug 16. Erratum in: Proc Natl Acad Sci U S A. 2004 Nov 23;101(47):16707. PMID: 15314234; PMCID: PMC515116.

2. Henderson WR Jr, 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. doi: 10.1073/pnas.1001520107. Epub 2010 Jul 21. PMID: 20660310; PMCID: PMC2922550.

In vivo study

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 [corrected]. Proc Natl Acad Sci U S A. 2004 Aug 24;101(34):12682-7. doi: 10.1073/pnas.0404875101. Epub 2004 Aug 16. Erratum in: Proc Natl Acad Sci U S A. 2004 Nov 23;101(47):16707. PMID: 15314234; PMCID: PMC515116.

2. Henderson WR Jr, 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. doi: 10.1073/pnas.1001520107. Epub 2010 Jul 21. PMID: 20660310; PMCID: PMC2922550.

7. Bioactivity

Biological target:

ICG-001 (OP-724, PRI-724, CBP-beta catenin inhibitor) antagonizes Wnt/β-catenin/TCF-mediated transcription and specifically binds to CREB-binding protein (CBP) with IC50 of 3 μM, but is not the related transcriptional coactivator p300.

In vitro activity

ICG-001 increases caspase activity in colon carcinoma cell lines (SW480 or HCT116) but not in normal colonic epithelial cells (CCD-841Co). The increased caspase activity is manifested in selective cytotoxicity in colorectal cancer cells. cDNA microarray analysis demonstrated that ICG-001 had a very selective effect on gene transcription. Interestingly, two of the most highly up-regulated mRNAs in cancer cells (survivin and S100A4) are down-regulated by ICG-001. Down-regulation of survivin is notable, because survivin has been shown to inhibit caspase activation. It was also demonstrated that ICG-001 reduces endogenous survivin levels in a TCF/β-catenin fashion in vitro (Fig. 4 A and B).

Reference: Proc Natl Acad Sci U S A. 2004 Aug 24;101(34):12682-7. https://www.ncbi.nlm.nih.gov/pmc/articles/pmid/15314234/

In vivo activity

A water-soluble analog of ICG-001 was evaluated in vivo in two mouse models of cancer. The Min mouse, which has a germ-line mutation in one allele of the APC tumor suppressor gene, is a well characterized model for human familial adenomatous polyposis. Administration of the analog for 9 weeks reduced the formation of colon and small intestinal polyps by 42% as effectively as the nonsteroidal antiinflammatory agent Sulindac (Table 1), which has consistently demonstrated efficacy in this model (33). No overt toxicity was detected throughout the course of treatment. In the SW620 nude mouse xenograft model of tumor regression, 150 mg/kg, i.v. of the analog demonstrated a dramatic reduction in tumor volume over the 19-day course of treatment (Fig. 5C Left), with no mortality or weight loss (Fig. 5C Right).

Reference: Proc Natl Acad Sci U S A. 2004 Aug 24;101(34):12682-7. https://www.ncbi.nlm.nih.gov/pmc/articles/pmid/15314234/