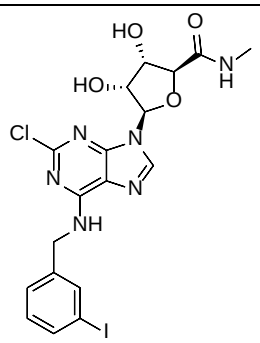
Product data sheet

MedKoo Cat#: 206154 Name: Namodenoson CAS: 163042-96-4 Chemical Formula: $C_{18}H_{18}ClIN_6O_4$ Exact Mass: 544.0123 Molecular Weight: 544.7308	
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:

Namodenoson, also known as 2-Cl-IB-MECA and CF-102, is an orally bioavailable, synthetic, highly selective adenosine A3 receptor (A3AR) agonist with potential antineoplastic activity. Adenosine A3 receptor agonist CF102 selectively binds to and activates the cell surface-expressed A3AR, deregulating Wnt and NF-kB signal transduction pathways downstream, which may result in apoptosis of A3AR-expressing tumor cells. A3AR, a G protein-coupled receptor, is highly expressed on the cell surfaces of various solid tumor cell types, including hepatocellular carcinoma (HCC) cells, and plays an important role in cellular proliferation.

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
DMF	10.0	18.36
DMSO	48.67	89.34
DMSO:PBS (pH 7.2) (1:2)	0.3	0.55

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.84 mL	9.18 mL	18.36 mL
5 mM	0.37 mL	1.84 mL	3.67 mL
10 mM	0.18 mL	0.92 mL	1.84 mL
50 mM	0.04 mL	0.18 mL	0.37 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. Lillo A, Serrano-Marín J, Lillo J, Raïch I, Navarro G, Franco R. Gene regulation in activated microglia by adenosine A3 receptor agonists: a transcriptomics study. Purinergic Signal. 2023 Jan 27. doi: 10.1007/s11302-022-09916-9. Epub ahead of print. PMID: 36703008.

2. Cohen S, Stemmer SM, Zozulya G, Ochaion A, Patoka R, Barer F, Bar-Yehuda S, Rath-Wolfson L, Jacobson KA, Fishman P. CF102 an A3 adenosine receptor agonist mediates anti-tumor and anti-inflammatory effects in the liver. J Cell Physiol. 2011 Sep;226(9):2438-47. doi: 10.1002/jcp.22593. PMID: 21660967; PMCID: PMC3474360.

In vivo study

1. Ohana G, Cohen S, Rath-Wolfson L, Fishman P. A3 adenosine receptor agonist, CF102, protects against hepatic ischemia/reperfusion injury following partial hepatectomy. Mol Med Rep. 2016 Nov;14(5):4335-4341. doi: 10.3892/mmr.2016.5746. Epub 2016 Sep 19. PMID: 27666664.

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2. Van Schaick EA, Jacobson KA, Kim HO, IJzerman AP, Danhof M. Hemodynamic effects and histamine release elicited by the selective adenosine A3 receptor agonist 2-Cl-IB-MECA in conscious rats. Eur J Pharmacol. 1996 Jul 25;308(3):311-4. doi: 10.1016/0014-2999(96)00373-1. PMID: 8858305; PMCID: PMC4287249.

7. Bioactivity

Biological target:

Namodenoson (CF-102) is a selective A3 adenosine receptor (A3AR) agonist (K_i=0.33 nM).

In vitro activity

CF102 at a concentration of 1 and 10 nM induced a linear inhibitory effect on the proliferation of Hep-3B cells (34.5 ± 2.5% and 46.87 ± 3.72%, respectively; Fig. 6). WB analysis showed that Hep-3B cells highly express A3AR which was down-regulated upon CF102 treatment (Fig. 7). Down-regulation of PI3K, PKB/Akt, and NF-κB was also found upon CF102 treatment whereas up-regulation of the pro-apoptotic protein caspase-3 was noted (Fig. 8).

Reference: J Cell Physiol. 2011 Sep;226(9):2438-47. https://pubmed.ncbi.nlm.nih.gov/21660967/

In vivo activity

The hemodynamic effects of the novel, selective adenosine A3 receptor agonist 2-chloro-N6-(3-iodobenzyl)adenosine-5'-N-methylcarboxamide (2-Cl-IB-MECA) were investigated in conscious rats. Intravenous administration of 200 micrograms/kg 2-Cl-IB-MECA resulted in a short-lasting hypotension, which was accompanied by a 50-100-fold increase in plasma histamine concentrations.

Reference: Eur J Pharmacol. 1996 Jul 25;308(3):311-4. https://pubmed.ncbi.nlm.nih.gov/8858305/

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.