

Product data sheet



MedKoo Cat#: 532366 Name: NS 2028 CAS: 204326-43-2 Chemical Formula: C ₉ H ₅ BrN ₂ O ₃ Exact Mass: 267.9484 Molecular Weight: 269.054	
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:

NS 2028 is a potent soluble guanylyl cyclase (sGC) inhibitor (K_i = 8 nM). It blocks sGC activity in murine cerebellum induced by S-nitroso-glutathione and NMDA (IC₅₀ values are 17 and 20 nM respectively). NS 2028 also inhibits VEGF-induced cGMP accumulation.

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	138.46	514.60
Ethanol	5.38	20.0

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.72 mL	18.58 mL	37.17 mL
5 mM	0.74 mL	3.72 mL	7.43 mL
10 mM	0.37 mL	1.86 mL	3.72 mL
50 mM	0.07 mL	0.37 mL	0.74 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. Zhou L, Yang F, Li G, Huang J, Liu Y, Zhang Q, Tang Q, Hu C, Zhang R. Coptisine Induces Apoptosis in Human Hepatoma Cells Through Activating 67-kDa Laminin Receptor/cGMP Signaling. *Front Pharmacol.* 2018 May 18;9:517. doi: 10.3389/fphar.2018.00517. PMID: 29867512; PMCID: PMC5968218.

2. Mülsch A, Bauersachs J, Schäfer A, Stasch JP, Kast R, Busse R. Effect of YC-1, an NO-independent, superoxide-sensitive stimulator of soluble guanylyl cyclase, on smooth muscle responsiveness to nitrovasodilators. *Br J Pharmacol.* 1997 Feb;120(4):681-9. doi: 10.1038/sj.bjp.0700982. PMID: 9051308; PMCID: PMC1564520.

In vivo study

1. Morbidelli L, Pyriochou A, Filippi S, Vasileiadis I, Roussos C, Zhou Z, Loutrari H, Waltenberger J, Stössel A, Giannis A, Ziche M, Papapetropoulos A. The soluble guanylyl cyclase inhibitor NS-2028 reduces vascular endothelial growth factor-induced angiogenesis and permeability. *Am J Physiol Regul Integr Comp Physiol.* 2010 Mar;298(3):R824-32. doi: 10.1152/ajpregu.00222.2009. Epub 2009 Dec 23. PMID: 20032260.

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7. Bioactivity

Biological target:

NS-2028 is a highly selective soluble Guanylyl Cyclase (sGC) inhibitor with IC₅₀ values of 30 nM and 200 nM for basal and NO-stimulated enzyme activity.

In vitro activity

sh67LR lentivirus, anti67LR antibody, and cGMP inhibitor NS2028 were used to determine how a 67LR/cGMP signaling pathway regulated coptisine-induced apoptosis. cGMP inhibitor NS2028 significantly decreased coptisine-induced apoptosis and inhibition of cell viability.

Reference: Front Pharmacol. 2018 May 18;9:517. <https://pubmed.ncbi.nlm.nih.gov/29867512/>

In vivo activity

Rabbits receiving NS-2028 orally displayed a reduced angiogenic response to VEGF. As increased vascular permeability occurs prior to new blood vessel formation, this study determined the effect of NS-2028 in vascular leakage. Using a modified Miles assay, we observed that NS-2028 attenuated VEGF-induced permeability.

Reference: Am J Physiol Regul Integr Comp Physiol. 2010 Mar;298(3):R824-32. <https://pubmed.ncbi.nlm.nih.gov/20032260/>

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.