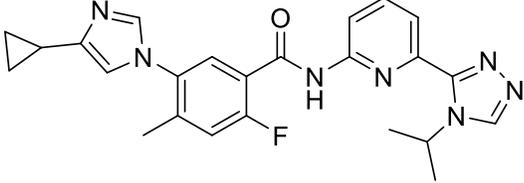


Product data sheet



MedKoo Cat#: 206450 Name: Selonsertib free base CAS#: 1448428-04-3 (free base) Chemical Formula: C ₂₄ H ₂₄ FN ₇ O Exact Mass: 445.2026 Molecular Weight: 445.50	
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:

Selonsertib, also known as GS-4997, is an orally bioavailable inhibitor of apoptosis signal-regulating kinase 1 (ASK1), with potential anti-inflammatory, antineoplastic and anti-fibrotic activities. GS-4997 targets and binds to the catalytic kinase domain of ASK1 in an ATP-competitive manner, thereby preventing its phosphorylation and activation. GS-4997 prevents the production of inflammatory cytokines, down-regulates the expression of genes involved in fibrosis, suppresses excessive apoptosis and inhibits 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
DMSO	20.5	46.02

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.24 mL	11.22 mL	22.45 mL
5 mM	0.45 mL	2.24 mL	4.49 mL
10 mM	0.22 mL	1.12 mL	2.24 mL
50 mM	0.04 mL	0.22 mL	0.45 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

- Lee JH, Ji SH, Lim JS, Ahn S, Yun HY, Kim SH, Song JS. Anti-neuroinflammatory Effects and Brain Pharmacokinetic Properties of Selonsertib, an Apoptosis signal-regulating Kinase 1 Inhibitor, in mice. *Neurochem Res.* 2022 Dec;47(12):3829-3837. doi: 10.1007/s11064-022-03777-9. Epub 2022 Oct 30. PMID: 36309631.
- Ji N, Yang Y, Cai CY, Lei ZN, Wang JQ, Gupta P, Shukla S, Ambudkar SV, Kong D, Chen ZS. Selonsertib (GS-4997), an ASK1 inhibitor, antagonizes multidrug resistance in ABCB1- and ABCG2-overexpressing cancer cells. *Cancer Lett.* 2019 Jan;440-441:82-93. doi: 10.1016/j.canlet.2018.10.007. Epub 2018 Oct 10. PMID: 30315846; PMCID: PMC8132112.

In vivo study

- Badal SS, Al Tuhaifi T, Yu YF, Lopez D, Plato CT, Joly K, Breckenridge DG, Yang HC, Liles JT, Fogo AB. Selonsertib Enhances Kidney Protection Beyond Standard of Care in a Hypertensive, Secondary Glomerulosclerosis CKD Model. *Kidney360.* 2022 Apr 18;3(7):1169-1182. doi: 10.34067/KID.0001032022. PMID: 35919527; PMCID: PMC9337896.
- Loomba R, Lawitz E, Mantry PS, Jayakumar S, Caldwell SH, Arnold H, Diehl AM, Djedjos CS, Han L, Myers RP, Subramanian GM, McHutchison JG, Goodman ZD, Afdhal NH, Charlton MR; GS-US-384-1497 Investigators. The ASK1 inhibitor selonsertib in patients with nonalcoholic steatohepatitis: A randomized, phase 2 trial. *Hepatology.* 2018 Feb;67(2):549-559. doi:

Product data sheet



10.1002/hep.29514. Epub 2017 Dec 26. Erratum in: Hepatology. 2018 May;67(5):2063. PMID: 28892558; PMCID: PMC5814892.

7. Bioactivity

Biological target:

Selonsertib is an ASK1 inhibitor with a pIC₅₀ of 8.3.

In vitro activity

The treatment combination of selonsertib with antineoplastic drugs has potential to counter multidrug resistance (MDR) in cancer cells overexpressing ABCB1 or ABCG2. This study investigated selonsertib for its potential to reverse MDR mediated by ABC transporters. Selonsertib effectively reversed MDR associated with ABCB1 and ABCG2 but not ABCC1 or ABCC10. Selonsertib stimulated ATPase activity in ABCB1 and ABCG2 and exhibited interactions with their substrate-binding sites.

Reference: Cancer Lett. 2019 Jan;440-441:82-93. <https://pubmed.ncbi.nlm.nih.gov/30315846/>

In vivo activity

Selonsertib may reduce liver fibrosis in patients with nonalcoholic steatohepatitis and stage 2-3 fibrosis. After 24 weeks of treatment, the proportion of patients with a one or more stage reduction in fibrosis in the 18-mg selonsertib group was 13 of 30 (43%) and in the 6-mg selonsertib group, 8 of 27 (30%). Improvement in fibrosis was associated with reductions in liver stiffness and collagen content and lobular inflammation, and improvements in serum biomarkers of apoptosis and necrosis.

Reference: Hepatology. 2018 Feb;67(2):549-559. <https://pubmed.ncbi.nlm.nih.gov/28892558/>

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.