

Product data sheet



MedKoo Cat#: 207085 Name: Sotorasib (AMG-510) CAS#: 2252403-56-6 Chemical Formula: C ₃₀ H ₃₀ F ₂ N ₆ O ₃ Exact Mass: 560.2347 Molecular Weight: 560.61	
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:

Sotorasib, also known as AMG-510, is a potent KRAS G12C covalent inhibitor and the active atropisomer separated by chiral HPLC. AMG-510 selectively targets the KRAS p.G12C mutant, at either the DNA, RNA or protein level, and prevents, through an as of yet not elucidated manner, expression of and/or tumor cell signaling through the KRAS p.G12C mutant. This may inhibit growth in KRAS p.G12C-expressing tumor cells. Note: According to Sci-Finder database, CAS#2252403-56-6 is a AMG510 active atropisomer. Many vendor mistakenly listed CAS#2296729-00-3 as the AMG510 active atropisomer.

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	75.0	133.78
Water	33.33	59.45
Ethanol	8.0	14.27

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.78 mL	8.92 mL	17.84 mL
5 mM	0.36 mL	1.78 mL	3.57 mL
10 mM	0.18 mL	0.89 mL	1.78 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

- Huang M, Hou W, Zhang J, Li M, Zhang Z, Li X, Chen Z, Wang C, Yang L. Evaluation of AMG510 Therapy on KRAS-Mutant Non-Small Cell Lung Cancer and Colorectal Cancer Cell Using a 3D Invasive Tumor Spheroid System under Normoxia and Hypoxia. *Bioengineering (Basel)*. 2022 Dec 12;9(12):792. doi: 10.3390/bioengineering9120792. PMID: 36550998; PMCID: PMC9774149.
- Kitazawa M, Miyagawa Y, Koyama M, Nakamura S, Hondo N, Miyazaki S, Muranaka F, Tokumaru S, Yamamoto Y, Ehara T, Kuroiwa M, Tanaka H, Komatsu D, Takeoka M, Soejima Y. Drug sensitivity profile of minor KRAS mutations in colorectal cancer using mix culture assay: The effect of AMG-510, a novel KRAS G12C selective inhibitor, on colon cancer cells is markedly enhanced by the combined inhibition of MEK and BCL-XL. *Mol Clin Oncol*. 2021 Jul;15(1):148. doi: 10.3892/mco.2021.2310. Epub 2021 May 28. PMID: 34094546; PMCID: PMC8165703.

In vivo study

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1. Takahashi Y, Tachi H, Watanabe R, Shimizu K, Yamamoto Y. Drug-induced lung injury in a patient treated with prior atezolizumab and subsequent sotorasib: A case report. *Respirol Case Rep*. 2024 Jan 24;12(1):e01284. doi: 10.1002/rcr2.1284. PMID: 38269310; PMCID: PMC10807503.
2. Canon J, Rex K, Saiki AY, Mohr C, Cooke K, Bagal D, Gaida K, Holt T, Knutson CG, Koppada N, Lanman BA, Werner J, Rapaport AS, San Miguel T, Ortiz R, Osgood T, Sun JR, Zhu X, McCarter JD, Volak LP, Houk BE, Fakih MG, O'Neil BH, Price TJ, Falchook GS, Desai J, Kuo J, Govindan R, Hong DS, Ouyang W, Henary H, Arvedson T, Cee VJ, Lipford JR. The clinical KRAS(G12C) inhibitor AMG 510 drives anti-tumour immunity. *Nature*. 2019 Nov;575(7781):217-223. doi: 10.1038/s41586-019-1694-1. Epub 2019 Oct 30. PMID: 31666701.

7. Bioactivity

Biological target:

Sotorasib is a KRAS G12C covalent inhibitor.

In vitro activity

Sotorasib may have potential clinical use in combination with MEK and BCL-XL inhibitors in the treatment of patients with colorectal cancer exhibiting the G12C KRAS mutation. Sotorasib selectively exerted an antitumor effect on colon cancer cells with a G12C KRAS mutation. The combination of MEK and BCL-XL inhibition enhanced the effect of sotorasib in colon cancer cells.

Reference: *Mol Clin Oncol*. 2021 Jul;15(1):148. <https://pubmed.ncbi.nlm.nih.gov/34094546/>

In vivo activity

In immune-competent mice, treatment with sotorasib resulted in a pro-inflammatory tumour microenvironment and produced durable cures alone as well as in combination with immune-checkpoint inhibitors. Cured mice rejected the growth of isogenic KRASG12D tumours, which suggests adaptive immunity against shared antigens.

Reference: *Nature*. 2019 Nov;575(7781):217-223. <https://pubmed.ncbi.nlm.nih.gov/31666701/>

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.