

Product data sheet



MedKoo Cat#: 522419 Name: GNE-3511 CAS#: 1496581-76-0 Chemical Formula: C ₂₃ H ₂₆ F ₂ N ₆ O Exact Mass: 440.2136 Molecular Weight: 440.50		
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:

GNE-3511 is a potent and selective dual leucine zipper kinase (DLK, MAP3K12) inhibitors with activity in neurodegeneration models. GNE-3511 displays concentration-dependent protection of neurons from degeneration in vitro and demonstrated dose-dependent activity in two different animal models of disease. GNE-3511 displays protection of primary neurons in an in vitro axon degeneration assay as well as activity in the mouse models of glaucoma/optic neuropathy (optic nerve crush) and Parkinson's disease (MPTP) after oral dosing.

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	25.63	58.18
Methanol	1.0	2.27

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.27 mL	11.35 mL	22.70 mL
5 mM	0.45 mL	2.27 mL	4.54 mL
10 mM	0.23 mL	1.14 mL	2.27 mL
50 mM	0.05 mL	0.23 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

1. Patel S, Cohen F, Dean BJ, De La Torre K, Deshmukh G, Estrada AA, Ghosh AS, Gibbons P, Gustafson A, Huestis MP, Le Pichon CE, Lin H, Liu W, Liu X, Liu Y, Ly CQ, Lyssikatos JP, Ma C, Searce-Levie K, Shin YG, Solanoy H, Stark KL, Wang J, Wang B, Zhao X, Lewcock JW, Siu M. Discovery of dual leucine zipper kinase (DLK, MAP3K12) inhibitors with activity in neurodegeneration models. J Med Chem. 2015 Jan 8;58(1):401-18. doi: 10.1021/jm5013984. Epub 2014 Oct 23. PMID: 25341110.

In vivo study

1. Patel S, Cohen F, Dean BJ, De La Torre K, Deshmukh G, Estrada AA, Ghosh AS, Gibbons P, Gustafson A, Huestis MP, Le Pichon CE, Lin H, Liu W, Liu X, Liu Y, Ly CQ, Lyssikatos JP, Ma C, Searce-Levie K, Shin YG, Solanoy H, Stark KL, Wang J, Wang B, Zhao X, Lewcock JW, Siu M. Discovery of dual leucine zipper kinase (DLK, MAP3K12) inhibitors with activity in neurodegeneration models. J Med Chem. 2015 Jan 8;58(1):401-18. doi: 10.1021/jm5013984. Epub 2014 Oct 23. PMID: 25341110.

7. Bioactivity

Biological target: GNE-3511 is a dual leucine zipper kinase (DLK) inhibitor with a K_i of 0.5 nM.

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In vitro activity

Dual leucine zipper kinase (DLK, MAP3K12) was identified as an essential regulator of neuronal degeneration in multiple contexts. The DLK inhibitor GNE-3511 displayed concentration-dependent protection of neurons from degeneration in vitro. These results suggest that specific pharmacological inhibition of DLK may have therapeutic potential in multiple indications.

Reference: J Med Chem. 2015 Jan 8;58(1):401-18. <https://pubs.acs.org/doi/10.1021/jm5013984>

In vivo activity

Using proposed hinge-binding interactions to infer a binding mode and specific design parameters to optimize for CNS druglike molecules, the di(pyridin-2-yl)amines were evaluated because of their combination of desirable potency and good brain penetration following oral dosing. GNE-3511 demonstrated dose-dependent activity in two different animal models of disease.

Reference: J Med Chem. 2015 Jan 8;58(1):401-18. <https://pubs.acs.org/doi/10.1021/jm5013984>

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.