Product data sheet



MedKoo Cat#: 555125				
CAS#: 190274-53-4				
Chemical Formula: C ₁₇ H ₂₅ FN ₂ O ₄ S				
Exact Mass: 372.1519				
Molecular Weight: 372.46				
r				
nt temperature				
Powder: -20°C 3 years; 4°C 2 years.				
ent: -80°C 3 months; -20°C 2 weeks.				



1. Product description:

SJA6017, also known as Calpain Inhibitor VI, is a calpain inhibitor. Treatment with SJA6017 reduces apoptotic cell death, preserves spinal cord tissue and improves functional outcome. Treating calpain-induced apoptosis with this agent may be a feasible therapeutic strategy for patients with spinal cord injury.

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	5	13.42		

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.33 mL	11.66 mL	23.32 mL
5 mM	0.47 mL	2.33 mL	4.66 mL
10 mM	0.23 mL	1.17 mL	2.33 mL
50 mM	0.05 mL	0.23 mL	0.47 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

- Samantaray S, Knaryan VH, M Del Re A, Woodward JJ, Shields DC, Azuma M, Inoue J, Ray SK, Banik NL. Cell-Permeable Calpain Inhibitor SJA6017 Provides Functional Protection to Spinal Motoneurons Exposed to MPP. Neurotox Res. 2020 Oct;38(3):640-649. doi: 10.1007/s12640-020-00264-3. Epub 2020 Aug 6. PMID: 32761446; PMCID: PMC9453439.
- Biswas S, Harris F, Singh J, Phoenix DA. The in vitro retardation of porcine cataractogenesis by the calpain inhibitor, SJA6017. Mol Cell Biochem. 2004 Jun;261(1-2):169-73. doi: 10.1023/b:mcbi.0000028752.89886.43. PMID: 15362500.

In vivo study

- Akdemir O, Uçankale M, Karaoğlan A, Barut S, Sağmanligil A, Bilguvar K, Cirakoğlu B, Sahan E, Colak A. Therapeutic efficacy of SJA6017, a calpain inhibitor, in rat spinal cord injury. J Clin Neurosci. 2008 Oct;15(10):1130-6. doi: 10.1016/j.jocn.2007.08.011. Epub 2008 Jul 24. PMID: 18656362.
- Tamada Y, Fukiage C, Mizutani K, Yamaguchi M, Nakamura Y, Azuma M, Shearer TR. Calpain inhibitor, SJA6017, reduces the rate of formation of selenite cataract in rats. Curr Eye Res. 2001 Apr;22(4):280-5. doi: 10.1076/ceyr.22.4.280.5505. PMID: 11462167.

Product data sheet



7. Bioactivity

Biological target:

Calpain inhibitor VI is an inhibitor of the calcium-dependent cysteine proteases μ -calpain (calpain-1; IC50 = 7.5 nM) and m-calpain (calpain-2; IC50 = 78 nM). It also inhibits cathepsins B and L (IC50s = 15 and 1.6 nM, respectively). It is selective for these calpains and cathepsins over other cysteine and serine proteases, factor VIIa, factor Xa, trypsin, chymotrypsin, and proteasome.

In vitro activity

SJA6017 demonstrated effective neuroprotection against MPP+-induced damage in spinal motoneurons. In VSC 4.1 cells exposed to the Parkinsonian neurotoxicant MPP+, SJA6017 mitigated the rise in intracellular free Ca2+, reduced the active form of calpain, and prevented increased levels of proteases and their activities. It also diminished elevated levels of reactive oxygen species and partially ameliorated impairment in motor proteins dynein and kinesin caused by MPP+.

Reference: Neurotox Res. 2020 Oct;38(3):640-649. https://pubmed.ncbi.nlm.nih.gov/32761446/

In vivo activity

SJA6017 may have potential in spinal cord injury treatment. In a rat spinal cord injury model, SJA6017 reduced apoptotic cell death, preserved spinal cord tissue and improved functional outcome. SJA6017 treated rats had significantly reduced tissue injury and had ameliorated recovery of limb function.

Reference: J Clin Neurosci. 2008 Oct;15(10):1130-6. https://pubmed.ncbi.nlm.nih.gov/18656362/

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.