

## Elamipretide acetate

### Chemical Properties

CAS No. :

Formula: C34H53N9O7

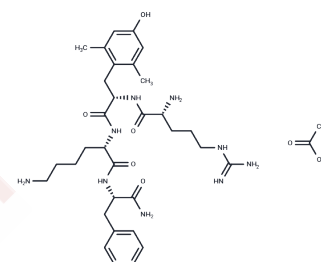
Molecular Weight: 699.84

Storage:

Store at low temperature, Keep away from moisture

Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Actual storage temperature shall be subject to the COA.



### Biological Description

Description	Elamipretide acetate (MTP 131 acetate) is a derivative of Elamipretide, a small mitochondria-targeting tetrapeptide (D-Arg-dimethylTyr-Lys-Phe-NH <sub>2</sub> ) that can be used in studies to reduce the production of toxic reactive oxygen species and stabilize cardiolipin.
Targets(IC50)	ROS
In vitro	<p>In vitro experiment it exhibited that treatment with 1 μM elamipretide in cultured ARPE-19 cells results in accelerating an increase in mitochondrial volume.[3]</p> <p>In vitro, added in the freeze media with 1 and 10 μM Elamipretide obviously improved post-thaw sperm parameters including motility and viability, stability of the plasma membrane, and mitochondria and chromosomes.[4]</p> <p>In control INS1 cells, treatment with 1 μM Elamipretide for 20 h sufficiently increase the engulfment of mitochondria into autophagosomes, but it has no increase at 10 μM Elamipretide, suggesting a complete reversal of mitochondrial fragmentation induced by nutrient excess at 10 μM, while not being complete at 1 μM.[5]</p>
In vivo	<p>In vivo, 1 mg/kg MTP-131 treatment reversed visual decline without improving glycemic control or reducing body weight in diabetic mouse models.[6]</p> <p>In vivo test it shown that treatment repeatedly with 5 mg/kg elamipretide intraperitoneally in mice provided maximum neuroprotective effects without any adverse effects[7].</p> <p>Treatment with 3 mg/kg/day SS-31 (elamipretide) restored redox homeostasis, improved mitochondrial quality, and increased exercise tolerance without an increase in mitochondrial content in aged mice.[8]</p>

## Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.4289 mL	7.1445 mL	14.289 mL
5 mM	0.2858 mL	1.4289 mL	2.8578 mL
10 mM	0.1429 mL	0.7144 mL	1.4289 mL
50 mM	0.0286 mL	0.1429 mL	0.2858 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

## Reference

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- Zhao K, et al. Mitochondria-targeted peptide prevents mitochondrial depolarization and apoptosis induced by tert-butyl hydroperoxide in neuronal cell lines. *Biochem Pharmacol.* 2005;70(12):1796-1806.
- Grosser JA, et al. The effects of a mitochondrial targeted peptide (elamipretide/SS31) on BAX recruitment and activation during apoptosis. *BMC Res Notes.* 2021;14(1):198.
- Bai H, et al. Elamipretide as a potential candidate for relieving cryodamage to human spermatozoa during cryopreservation. *Cryobiology.* 2020;95:138-142.
- Petcherski A, et al. Elamipretide Promotes Mitophagosome Formation and Prevents Its Reduction Induced by Nutrient Excess in INS1  $\beta$ -cells. *J Mol Biol.* 2018;430(24):4823-4833.
- Alam NM, et al. A mitochondrial therapeutic reverses visual decline in mouse models of diabetes. *Dis Model Mech.* 2015;8(7):701-710.
- Zhao W, et al. Elamipretide (SS-31) improves mitochondrial dysfunction, synaptic and memory impairment induced by lipopolysaccharide in mice. *J Neuroinflammation.* 2019;16(1):230.
- Campbell MD, et al. Improving mitochondrial function with SS-31 reverses age-related redox stress and improves exercise tolerance in aged mice. *Free Radic Biol Med.* 2019;134:268-281.

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