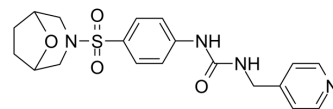


SBI-797812

Cat. No.:	HY-126255		
CAS No.:	2237268-08-3		
Molecular Formula:	C ₁₉ H ₂₂ N ₄ O ₄ S		
Molecular Weight:	402.47		
Target:	NAMPT		
Pathway:	Metabolic Enzyme/Protease		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	2 years
		-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro	DMSO : 250 mg/mL (621.16 mM; Need ultrasonic)				
		Solvent Concentration	Mass 1 mg	5 mg	10 mg
	Preparing Stock Solutions	1 mM	2.4847 mL	12.4233 mL	24.8466 mL
		5 mM	0.4969 mL	2.4847 mL	4.9693 mL
10 mM		0.2485 mL	1.2423 mL	2.4847 mL	
Please refer to the solubility information to select the appropriate solvent.					
In Vivo	<ol style="list-style-type: none"> Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: 2.08 mg/mL (5.17 mM); Clear solution; Need ultrasonic Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.08 mg/mL (5.17 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.08 mg/mL (5.17 mM); Clear solution 				

BIOLOGICAL ACTIVITY

Description	SBI-797812 is an orally active nicotinamide phosphoribosyltransferase (NAMPT) activator. SBI-797812 shifts NAMPT to NMN formation, increases NAMPT affinity for ATP, stabilizes phosphorylated NAMPT, promotes consumption of the pyrophosphate by-product, and blunts feedback inhibition by NAD ⁺ . SBI-797812 increases intracellular nicotinamide mononucleotide (NMN) and elevates liver NAD ⁺ in mice ^{[1][2]} .
IC ₅₀ & Target	NAMPT ^[1]

<p>In Vitro</p>	<p>SBI-797812 (0-4 μM; 4 h) activates NAMPT in a dose-dependent manner with an EC₅₀ value of 0.37 μM, and (1 μM, 2 μM; 1 h) increases NAMPT-mediated NMN in cells^[1].</p> <p>SBI-797812 (2 μM; 1 or 4 h) exerts NAMPT (30 nM) activation requiring ATP (2 mM)^[1].</p> <p>SBI-797812 (5 μM; 2 h) impacts PP (20 μM) consumption and pHisNAMPT reactivity^[1].</p> <p>SBI-797812 (0.4, 2, 10 μM; 4 h) increases the level of nicotinamide mononucleotide (NMN) and NAD⁺ in A549 human lung carcinoma cells as well as in human or mouse primary myotubes at 10 μM^[1].</p> <p>SBI-797812, as an NRAMPT activator plays a role in successive aging promotion, while NAMPT is a rate limiting enzyme in NAD⁺ salvage pathway of Aging/Senescence process^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>								
<p>In Vivo</p>	<p>SBI-797812 (10 mg/kg; i.p. or o.p.; single dose) shows high plasma exposure by intraperitoneal injection, with C_{max} value of 3297 ng/mL, 8.2 μM^[1].</p> <p>SBI-797812 (20 mg/kg; i.p.; single dose; measured 2 h post-dose) significant increases NAD⁺ in mouse liver^[1].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <table border="1" data-bbox="345 621 1515 926"> <tr> <td data-bbox="345 621 618 684">Animal Model:</td> <td data-bbox="618 621 1515 684">Male C57BL/6 J mice (8-week-old)^[1]</td> </tr> <tr> <td data-bbox="345 684 618 747">Dosage:</td> <td data-bbox="618 684 1515 747">20 mg/kg</td> </tr> <tr> <td data-bbox="345 747 618 831">Administration:</td> <td data-bbox="618 747 1515 831">Intraperitoneal injection; administrated 1 h after fasting; added Buthanasia-D (165 mg/kg; i.p.) 4 h after fasting</td> </tr> <tr> <td data-bbox="345 831 618 926">Result:</td> <td data-bbox="618 831 1515 926">Showed 0.311, 0.144, 0.078, and 0.078 μg/mg dry powder about NAD⁺ in liver, heart, gastrocnemius and quadriceps, respectively by LC-MS/MS measurement.</td> </tr> </table>	Animal Model:	Male C57BL/6 J mice (8-week-old) ^[1]	Dosage:	20 mg/kg	Administration:	Intraperitoneal injection; administrated 1 h after fasting; added Buthanasia-D (165 mg/kg; i.p.) 4 h after fasting	Result:	Showed 0.311, 0.144, 0.078, and 0.078 μ g/mg dry powder about NAD ⁺ in liver, heart, gastrocnemius and quadriceps, respectively by LC-MS/MS measurement.
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REFERENCES

- [1]. Khaidizar FD, et al. Nicotinamide Phosphoribosyltransferase as a Key Molecule of the Aging/Senescence Process. *Int J Mol Sci.* 2021 Apr 2;22(7):3709.
- [2]. Gardell SJ, et al. Boosting NAD⁺ with a small molecule that activates NAMPT. *Nat Commun.* 2019 Jul 19;10(1):3241.

Caution: Product has not been fully validated for medical applications. For research use only.

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