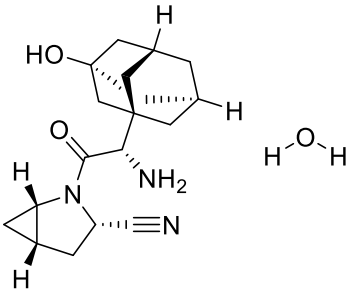
Product data sheet

MedKoo Cat#: 300120 Name: Saxagliptin hydrate CAS#: 945667-22-1 (hydrate) Chemical Formula: $C_{18}H_{27}N_3O_3$ Molecular Weight: 333.43	
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:

Saxagliptin, also known as BMS-477118, is a new oral hypoglycemic (anti-diabetic drug) of the new dipeptidyl peptidase-4 (DPP-4) inhibitor class of drugs. Saxagliptin was approved in 2008 for the treatment of type 2 diabetes. Saxagliptin is a competitive DPP4 inhibitor that slows the inactivation of the incretin hormones, thereby increasing their bloodstream concentrations and reducing fasting and postprandial glucose concentrations in a glucose-dependent manner in patients with type 2 diabetes mellitus.

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	48.50	145.46
Water	36.50	109.47
Ethanol	63.0	188.95

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	**1 mg**	**5 mg**	**10 mg**
1 mM	3.00 mL	15.00 mL	29.99 mL
5 mM	0.60 mL	3.00 mL	6.00 mL
10 mM	0.30 mL	1.50 mL	3.00 mL
50 mM	0.06 mL	0.30 mL	0.60 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. Wang Q, Xie X, Zhang D, Mao F, Wang S, Liao Y. Saxagliptin enhances osteogenic differentiation in MC3T3-E1 cells, dependent on the activation of AMP-activated protein kinase α (AMPKα)/runt-related transcription factor-2 (Runx-2). Bioengineered. 2022 Jan;13(1):431-439. doi: 10.1080/21655979.2021.2008667. PMID: 35258398; PMCID: PMC8805826.
2. Zhang L, Qi X, Zhang G, Zhang Y, Tian J. Saxagliptin protects against hypoxia-induced damage in H9c2 cells. Chem Biol Interact. 2020 Jan 5;315:108864. doi: 10.1016/j.cbi.2019.108864. Epub 2019 Oct 17. PMID: 31629700.

In vivo study

1. Meng Z, Wang K, Lan Q, Zhou T, Lin Y, Jiang Z, Chen J, Lin Y, Liu X, Lin H, Lin D. Saxagliptin promotes random skin flap survival. Int Immunopharmacol. 2023 Jul;120:110364. doi: 10.1016/j.intimp.2023.110364. Epub 2023 May 23. PMID: 37224651.
2. Tang Y, Leng YF, Wang W, Zhang J, Yuan TL, Wang J. Protective effect of Saxagliptin on diabetic rats with renal ischemia reperfusion injury by targeting oxidative stress and mitochondrial apoptosis pathway through activating Nrf-2/HO-1 signaling. Transpl Immunol. 2023 Feb;76:101762. doi: 10.1016/j.trim.2022.101762. Epub 2022 Nov 23. PMID: 36435353.

7. Bioactivity

Product data sheet

Biological target:

Saxagliptin is a dipeptidyl peptidase-4 (DPP-4) inhibitor with IC50 of 26 nM.

In vitro activity

Saxagliptin shows promise as a treatment against diabetes-associated coronary heart disease. Saxagliptin improved cell viability in H9c2 cells. It reduced hypoxia-induced oxidative damage, loss of mitochondrial membrane potential, NOX 4, MMP-2, and MMP-9. Saxagliptin also suppressed hypoxia-induced expression ofHMGB1. Saxagliptin exerted atheroprotective effects by reducing the expression of MyD88 and increasing the expression of Nrf2 and HO-1.

Reference: Chem Biol Interact. 2020 Jan 5;315:108864. https://pubmed.ncbi.nlm.nih.gov/31629700/

In vivo activity

In a dorsal McFarlane flap rat model, saxagliptin promoted random skin flap survival. The saxagliptin group had reduced oxidative stress, NF-κB, TLR4, proinflammatory cytokines, and pyroptosis-related proteins but had increased VEGF levels in a dose-dependent manner.

Reference: Int Immunopharmacol. 2023 Jul;120:110364. https://pubmed.ncbi.nlm.nih.gov/37224651/

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.