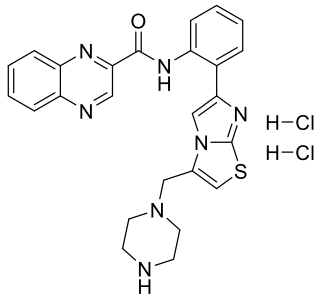
Product data sheet

MedKoo Cat#: 407966 Name: SRT-1720 HCl CAS#: 1001645-58-4 (HCl) Chemical Formula: $C_{25}H_{25}Cl_2N_7OS$ Molecular Weight: 542.48	
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:

SRT-1720, also known as CAY10559 and is a drug developed by Sirtris Pharmaceuticals intended as a small-molecule activator of the sirtuin subtype SIRT1. It has similar activity in the body to the known SIRT1 activator resveratrol, but is 1000x more potent. In animal studies it was found to improve insulin sensitivity and lower plasma glucose levels in fat, muscle and liver tissue, and increased mitochondrial and metabolic function. A study of SRT1720 conducted by the National Institute on Aging found that the drug may extend the lifespan of obese mice by 44% .

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	38	75.09

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.84 mL	9.22 mL	18.43 mL
5 mM	0.37 mL	1.84 mL	3.69 mL
10 mM	0.18 mL	0.92 mL	1.84 mL
50 mM	0.04 mL	0.18 mL	0.37 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. Rowlands BD, Klugmann M, Rae CD. Acetate metabolism does not reflect astrocytic activity, contributes directly to GABA synthesis, and is increased by silent information regulator 1 activation. J Neurochem. 2017 Mar;140(6):903-918. doi: 10.1111/jnc.13916. Epub 2017 Jan 23. PMID: 27925207.
2. Liang D, Zhuo Y, Guo Z, He L, Wang X, He Y, Li L, Dai H. SIRT1/PGC-1 pathway activation triggers autophagy/mitophagy and attenuates oxidative damage in intestinal epithelial cells. Biochimie. 2020 Mar;170:10-20. doi: 10.1016/j.biochi.2019.12.001. Epub 2019 Dec 9. PMID: 31830513.

In vivo study

1. Jiang T, Liu E, Li Z, Yan C, Zhang X, Guan J, Zhan Y, Zhao B, Ding W. SIRT1-Rab7 axis attenuates NLRP3 and STING activation through late endosomal-dependent mitophagy during sepsis-induced acute lung injury. Int J Surg. 2024 Mar 4. doi: 10.1097/JS9.0000000000001215. Epub ahead of print. PMID: 38445453.
2. Fan H, Yang HC, You L, Wang YY, He WJ, Hao CM. The histone deacetylase, SIRT1, contributes to the resistance of young mice to ischemia/reperfusion-induced acute kidney injury. Kidney Int. 2013 Mar;83(3):404-13. doi: 10.1038/ki.2012.394. Epub 2013 Jan 9. PMID: 23302720.

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7. Bioactivity

Biological target:

SRT 1720 is a selective activator of human SIRT1 with an EC1.5 of 0.16 μM and shows less potent activities agaiinst SIRT2 and SIRT3 with EC1.5s of 37 μM and > 300 μM, respectively.

In vitro activity

SRT1720 alters the brain's energy usage patterns. When SRT1720 was added to guinea pig brain cortical tissue slices, SRT1720 significantly increased 13C incorporation into Krebs cycle metabolites, as well as GABA and glutamine, while decreasing glycolysis-associated metabolites. SRT1720 increased label incorporation from [1,2-13C]acetate, indicating enhanced acetate metabolism with active SIRT1. SRT1720 increased glutamine levels and decreased lactate levels without affecting other measured metabolite pools.

J Neurochem. 2017 Mar;140(6):903-918. https://pubmed.ncbi.nlm.nih.gov/27925207/

In vivo activity

This study highlights SIRT1 as a potential target for treating kidney injuries caused by ischemia-reperfusion. Treating mice SRT1720 reduced kidney damage and improved kidney health. SRT1720 increased cell growth in adult mice after injury. SRT1720 also decreased the expression of p53 in the kidneys. These findings suggest SIRT1 with SRT-1720 can help reduce damage and promote kidney regeneration.

Kidney Int. 2013 Mar;83(3):404-13. https://pubmed.ncbi.nlm.nih.gov/23302720/

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.