

Product data sheet



MedKoo Cat#: 530993 Name: 3-TYP CAS#: 120241-79-4 Chemical Formula: C ₇ H ₆ N ₄ Exact Mass: 146.0592 Molecular Weight: 146.15		
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:

3-TYP is an inhibitor of SIRT3.

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	29	198.43
Ethanol	29	198.43

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	6.84 mL	34.21 mL	68.42 mL
5 mM	1.37 mL	6.84 mL	13.68 mL
10 mM	0.68 mL	3.42 mL	6.84 mL
50 mM	0.14 mL	0.68 mL	1.37 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. Pi H, Xu S, Reiter RJ, Guo P, Zhang L, Li Y, Li M, Cao Z, Tian L, Xie J, Zhang R, He M, Lu Y, Liu C, Duan W, Yu Z, Zhou Z. SIRT3-SOD2-mROS-dependent autophagy in cadmium-induced hepatotoxicity and salvage by melatonin. Autophagy. 2015;11(7):1037-51. doi: 10.1080/15548627.2015.1052208. PMID: 26120888; PMCID: PMC4590599.

In vivo study

1. Zhai M, Li B, Duan W, Jing L, Zhang B, Zhang M, Yu L, Liu Z, Yu B, Ren K, Gao E, Yang Y, Liang H, Jin Z, Yu S. Melatonin ameliorates myocardial ischemia reperfusion injury through SIRT3-dependent regulation of oxidative stress and apoptosis. J Pineal Res. 2017 Sep;63(2). doi: 10.1111/jpi.12419. Epub 2017 Jun 20. PMID: 28500761.

7. Bioactivity

Biological target:

3-TYP is a selective SIRT3 inhibitor, with an IC₅₀ of 16 nM, more potent over SIRT1 (IC₅₀=88 nM), SIRT2 (IC₅₀=92 nM).

In vitro activity

3-TYP inhibits melatonin-enhanced SIRT3 activity but does not affect SIRT3 protein expression. 3-TYP pretreatment reverses the protective effects of melatonin on cadmium (Cd)-induced mitochondrial-derived O₂^{•-} production and autophagic cell death. 3-TYP

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significantly attenuates melatonin-induced increases in deacetylated-SOD2 expression and SOD2 activity in HepG2 cells exposed to Cd.

Reference: Autophagy. 2015;11(7):1037-51. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC26120888/>

In vivo activity

3-TYP (50 mg/kg, i.p.) does not significantly influence the LVEF, LVFS, infarct size, serum LDH levels, apoptosis, and oxidative stress compared with those of the Sham group. Moreover, 3-TYP has little effect on gp91phox, Nrf2, NQO 1, Bax, Bcl-2, Caspase-3, and cleaved Caspase-3 expression levels, compared with the Sham group. 3-TYP significantly decreases SIRT3 activity and increases the acetylation of SOD2 compared with that in the control group, without influencing SIRT3 expression. 3-TYP attenuates the cardioprotective effects of melatonin by decreasing the LVEF and LVFS after 24 hour of reperfusion. 3-TYP also increases the infarct size, serum LDH levels, and apoptotic ratio compared with those in the IR+Mel group.

Reference: J Pineal Res. 2017 Sep;63(2). <https://doi.org/10.1111/jpi.12419>

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.