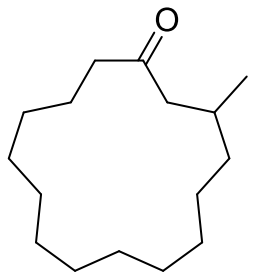
Product data sheet

MedKoo Cat#: 558371 Name: Muscone CAS: 541-91-3 Chemical Formula: $C_{16}H_{30}O$ Exact Mass: 238.2297 Molecular Weight: 238.415	
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:
Muscone is an inhibitor of the fas pathway. Muscone is a main chemical ingredient in Musk which is main crude drug in Tongqiaohuoxue decoction (TQHXD), and TQHXD has a protective effect on damaged neurons.

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
DMF	30.0	125.83
DMSO	65.0	272.63
Ethanol	30.0	125.83
Ethanol:PBS (pH 7.2) (1:2)	0.3	1.26

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	4.19 mL	20.97 mL	41.94 mL
5 mM	0.84 mL	4.19 mL	8.39 mL
10 mM	0.42 mL	2.10 mL	4.19 mL
50 mM	0.08 mL	0.42 mL	0.84 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. Liu S, Cheng Y, Rao M, Tang M, Dong Z. Muscone Induces CYP1A2 and CYP3A4 Enzyme Expression in L02 Human Liver Cells and CYP1A2 and CYP3A11 Enzyme Expression in Kunming Mice. Pharmacology. 2017;99(5-6):205-215. doi: 10.1159/000455154. Epub 2017 Jan 21. PMID: 28110334.
2. Yu L, Wang N, Zhang Y, Wang Y, Li J, Wu Q, Liu Y. Neuroprotective effect of muscone on glutamate-induced apoptosis in PC12 cells via antioxidant and Ca(2+) antagonism. Neurochem Int. 2014 May;70:10-21. doi: 10.1016/j.neuint.2014.03.003. Epub 2014 Mar 15. PMID: 24636892.

In vivo study

1. Liu F, Cao L, Hu S, Ye H, Wu Q, Wu L. Muscone promotes functional recovery by facilitating microglia polarization into M2 phenotype through PPAR-γ pathway after ischemic stroke. Cell Immunol. 2023 Mar 5;386:104704. doi: 10.1016/j.cellimm.2023.104704. Epub ahead of print. PMID: 36921554.

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2. Du Y, Gu X, Meng H, Aa N, Liu S, Peng C, Ge Y, Yang Z. Muscone improves cardiac function in mice after myocardial infarction by alleviating cardiac macrophage-mediated chronic inflammation through inhibition of NF-κB and NLRP3 inflammasome. Am J Transl Res. 2018 Dec 15;10(12):4235-4246. PMID: 30662666; PMCID: PMC6325512.

7. Bioactivity

Biological target:

Muscone inhibits NF-κB and NLRP3 inflammasome activation.

In vitro activity

This study demonstrated that pretreatment with muscone in PC12 cells markedly ameliorated the loss of cell viability, mitochondrial membrane potential (MMP) collapse, the release of lactate dehydrogenase (LDH), Ca(2+) overload, reactive oxygen species (ROS) generation, and cell apoptosis induced by glutamate. Furthermore, muscone also decreased NR1 (NMDA receptor subunit 1) protein expression, the ratio of Bax/Bcl-2 protein expression and prevented activitation of Ca(2+)/calmodulin-dependent protein kinase type II (CaMKII) and ASK1/JNK/p38 signaling pathways elicited by glutamate in PC12 cells.

Reference: Neurochem Int. 2014 May;70:10-21. https://pubmed.ncbi.nlm.nih.gov/24636892/

In vivo activity

This study evaluated the anti-inflammatory effects of muscone on myocardial infarction by establishing a MI model in mice. Muscone remarkably decreased the levels of inflammatory cytokines (IL-1β, TNF-α and IL-6), and ultimately improved cardiac function and survival rate. Furthermore, the main anti-inflammatory effect of muscone was alleviating cardiac macrophage-mediated inflammatory response in heart tissues after MI.

Reference: Am J Transl Res. 2018 Dec 15;10(12):4235-4246. https://pubmed.ncbi.nlm.nih.gov/30662666/

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.