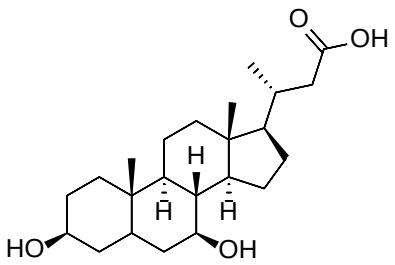
Product data sheet

MedKoo Cat#: 574263 Name: Norucholic acid CAS: 99697-24-2 Chemical Formula: $C_{23}H_{38}O_4$ Exact Mass: 378.277 Molecular Weight: 378.553	
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:
Norucholic acid is a Ursodeoxycholic Acid derivative. It is superior to Ursodeoxycholic acid in the treatment of sclerosing cholangitis in Mdr2 (Abcb4) knockout mice.

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	50.0	132.08

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.64 mL	13.21 mL	26.42 mL
5 mM	0.53 mL	2.64 mL	5.28 mL
10 mM	0.26 mL	1.32 mL	2.64 mL
50 mM	0.05 mL	0.26 mL	0.53 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. Tang Y, Blomenkamp KS, Fickert P, Trauner M, Teckman JH. NorUDCA promotes degradation of α1-antitrypsin mutant Z protein by inducing autophagy through AMPK/ULK1 pathway. PLoS One. 2018 Aug 1;13(8):e0200897. doi: 10.1371/journal.pone.0200897. PMID: 30067827; PMCID: PMC6070232.
2. Sombetzki M, Fuchs CD, Fickert P, Österreicher CH, Mueller M, Claudel T, Loebermann M, Engelmann R, Langner C, Sahin E, Schwinge D, Guenther ND, Schramm C, Mueller-Hilke B, Reisinger EC, Trauner M. 24-nor-ursodeoxycholic acid ameliorates inflammatory response and liver fibrosis in a murine model of hepatic schistosomiasis. J Hepatol. 2015 Apr;62(4):871-8. doi: 10.1016/j.jhep.2014.11.020. Epub 2014 Nov 21. PMID: 25463533; PMCID: PMC4368108.

In vivo study

1. Truong JK, Li J, Li Q, Pachura K, Rao A, Gumber S, Fuchs CD, Feranchak AP, Karpen SJ, Trauner M, Dawson PA. Active enterohepatic cycling is not required for the choleretic actions of 24-norUrsodeoxycholic acid in mice. JCI Insight. 2023 Mar 22;8(6):e149360. doi: 10.1172/jci.insight.149360. PMID: 36787187.
2. Fickert P, Wagner M, Marschall HU, Fuchsbichler A, Zollner G, Tsybrovskyy O, Zatloukal K, Liu J, Waalkes MP, Cover C, Denk H, Hofmann AF, Jaeschke H, Trauner M. 24-norUrsodeoxycholic acid is superior to ursodeoxycholic acid in the treatment of sclerosing cholangitis in Mdr2 (Abcb4) knockout mice. Gastroenterology. 2006 Feb;130(2):465-81. doi: 10.1053/j.gastro.2005.10.018. PMID: 16472600.

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7. Bioactivity

Biological target:

24-norursodeoxycholic acid (Norucholic acid) is a side chain-shortened C_{23} homologue of UDCA and has shown potent anti-cholestatic, anti-inflammatory and anti-fibrotic properties.

In vitro activity

The role of norUDCA in inducing autophagy, autophagy-mediated degradation of α1ATZ and the role of AMPK in norUDCA-induced autophagy were examined in the current report. NorUDCA promoted disposal of α1ATZ via autophagy-mediated degradation of α1ATZ in HTOZ cells. Activation of AMPK was required for norUDCA-induced autophagy and α1ATZ degradation.

Reference: PLoS One. 2018 Aug 1;13(8):e0200897. https://pubmed.ncbi.nlm.nih.gov/30067827/

In vivo activity

Mdr2(-/-) mice were fed a diet containing 24-norUrsodeoxycholic acid (0.5% wt/wt) or ursodeoxycholic acid (0.5% wt/wt) as a clinical comparator for 4 weeks; controls received standard chow. 24-norUrsodeoxycholic acid markedly improved liver tests and liver histology and significantly reduced hydroxyproline content and the number of infiltrating neutrophils and proliferating hepatocytes and cholangiocytes.

Reference: Gastroenterology. 2006 Feb;130(2):465-81. https://pubmed.ncbi.nlm.nih.gov/16472600/

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.