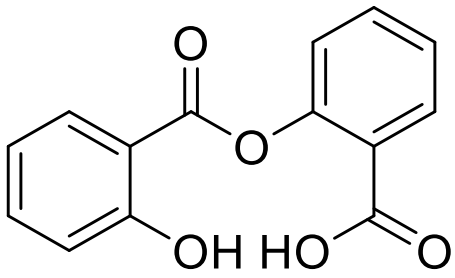
Product data sheet

MedKoo Cat#: 318684 Name: Salsalate CAS#: 552-94-3 Chemical Formula: $C_{14}H_{10}O_5$ Exact Mass: 258.0528 Molecular Weight: 258.23	
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:
Salsalate is a nonsteroidal anti-inflammatory drug (NSAID), a nonacetylated salicylate with no more problems of gastrointestinal bleeding than placebo. Salsalate is currently being investigated as a treatment for Type 2 diabetes with possible use to prevent the disease in people at risk. It reduces blood glucose concentrations in patients with type 2 diabetes, as well as in insulin-resistant patients without diabetes.

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	52	201.37
Ethanol	52	201.37

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	**1 mg**	**5 mg**	**10 mg**
1 mM	3.87 mL	19.36 mL	38.73 mL
5 mM	0.77 mL	3.87 mL	7.75 mL
10 mM	0.39 mL	1.94 mL	3.87 mL
50 mM	0.08 mL	0.39 mL	0.77 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. Jiang K, Huang Y, Chung EJ. Combining Metformin and Drug-Loaded Kidney-Targeting Micelles for Polycystic Kidney Disease. Cell Mol Bioeng. 2022 Dec 22;16(1):55-67. doi: 10.1007/s12195-022-00753-9. PMID: 36660586; PMCID: PMC9842834.
2. Jung TW, Park HS, Jeong JH, Lee T. Salsalate ameliorates the atherosclerotic response through HO-1- and SIRT1-mediated suppression of ER stress and inflammation. Inflamm Res. 2019 Aug;68(8):655-663. doi: 10.1007/s00011-019-01248-6. Epub 2019 May 29. PMID: 31143972.

In vivo study

1. Desjardins EM, Smith BK, Steinberg GR, Brown RE. Sevoflurane-induced hyperglycemia is attenuated by salsalate in obese insulin-resistant mice. Can J Anaesth. 2021 Jul;68(7):972-979. English. doi: 10.1007/s12630-021-01935-1. Epub 2021 Feb 12. PMID: 33580878.
2. Day EA, Ford RJ, Smith BK, Houde VP, Stypa S, Rehal S, Lhotak S, Kemp BE, Trigatti BL, Werstuck GH, Austin RC, Fullerton MD, Steinberg GR. Salsalate reduces atherosclerosis through AMPKβ1 in mice. Mol Metab. 2021 Nov;53:101321. doi: 10.1016/j.molmet.2021.101321. Epub 2021 Aug 21. PMID: 34425254; PMCID: PMC8429104.

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7. Bioactivity

Biological target

Salsalate inhibits synthesis and release of prostaglandins through the inactivation of cyclooxygenase-1 (COX-1) and COX-2. Salsalate has anti-inflammatory activity and reduces glucose levels, insulin resistance, and cytokine expression.

In vitro activity

In this study, salsalate boosted HO-1 and SIRT1 expression, curbing atherosclerotic responses caused by lipopolysaccharide (LPS). In HUVEC and THP-1 cells, salsalate reduced NFκB phosphorylation, lowered TNFα and MCP-1 secretion, and reduced adhesion molecules and cell adhesion. It also mitigated LPS-induced ER stress and cell apoptosis. These effects depend on HO-1 and SIRT1, as their siRNA reverses the benefits.

Reference: Inflamm Res. 2019 Aug;68(8):655-663. https://pubmed.ncbi.nlm.nih.gov/31143972/

In vivo activity

Salsalate can reduce sevoflurane-induced hyperglycemia in mice. Salsalate may represent a new class of therapeutics that, in addition to its anti-inflammatory and analgesic properties, may be useful to reduce perioperative hyperglycemia.

Reference: Can J Anaesth. 2021 Jul;68(7):972-979. English. https://pubmed.ncbi.nlm.nih.gov/33580878/

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.