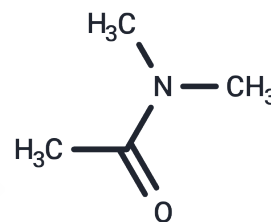


## N,N-Dimethylacetamide

## Chemical Properties

CAS No. :	127-19-5
Formula:	C <sub>4</sub> H <sub>9</sub> NO
Molecular Weight:	87.12
Storage:	Powder: -20°C for 3 years Actual storage temperature shall be subject to the COA.



## Biological Description

Description	N,N-Dimethylacetamide (DMAC) is a drug excipient with blood-brain barrier permeability and anti-inflammatory activity, acting through inhibition of the NF-κB signaling pathway. N,N-Dimethylacetamide can reduce endotoxin-induced inflammatory responses in vivo.
Targets(IC50)	NF-κB
In vitro	Methods: RAW 264.7 cells were treated with N,N-Dimethylacetamide (0-1000μM), and cell viability was determined by MTT assay. Results: N,N-Dimethylacetamide inhibited the bactericidal activity of macrophages in RAW 264.7 cells.[1]
In vivo	Methods: N,N-Dimethylacetamide (0.2, 0.39, 0.78, 1.56, 3.1 mg/kg, intraperitoneal injection) was used to treat LPS-induced C57BL/6 embryonic day (E) 15.5 mice. Results: N,N-Dimethylacetamide prevented LPS-triggered premature birth in C57BL/6 embryonic day (E) 15.5 mice in a concentration-dependent manner.[1]

## Solubility Information

Solubility	DMSO: 262.5 mg/mL (3013.09 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Saline: 10 mg/mL (114.78 mM), Solution. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>

### Preparing Stock Solutions

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	1mg	5mg	10mg
1 mM	11.4784 mL	57.3921 mL	114.7842 mL
5 mM	2.2957 mL	11.4784 mL	22.9568 mL
10 mM	1.1478 mL	5.7392 mL	11.4784 mL
50 mM	0.2296 mL	1.1478 mL	2.2957 mL

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Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

### Reference

Sundaram S, et al. N,N-dimethylacetamide regulates the proinflammatory response associated with endotoxin and prevents preterm birth. *Am J Pathol.* 2013 Aug;183(2):422-30.

Qin Z, Zou Y, Zhang Y, et al. Electrospun pullulan nanofiber loading zanthoxylum bungeanum essential oil/ $\beta$ -cyclodextrin inclusion complexes for active packaging. *International Journal of Biological Macromolecules.* 2022

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