

PRODUCT INFORMATION



Dapansutri

Item No. 24671

CAS Registry No.: 54863-37-5

Formal Name: 3-(methylsulfonyl)-propanenitrile

Synonym: 3-methanesulfonyl Propanenitrile

MF: C₄H₇NO₂S

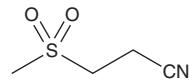
FW: 133.2

Purity: ≥98%

Supplied as: A crystalline solid

Storage: -20°C

Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Dapansutri is supplied as a crystalline solid. A stock solution may be made by dissolving the dapansutri in the solvent of choice, which should be purged with an inert gas. Dapansutri is soluble in the organic solvent DMSO at a concentration of approximately 2 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of dapansutri can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of dapansutri in PBS (pH 7.2) is approximately 3 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Dapansutri is a β-sulfonyl nitrile inhibitor of the NLRP3 inflammasome that inhibits the release of IL-1β and decreases caspase-1 levels in LPS-stimulated J774A.1 murine macrophages, human monocyte derived macrophages (HMDMs), and primary human blood neutrophils without affecting TNF-α release.¹ It is selective for NLRP3 over NLRP4 and AIM2 inflammasomes at concentrations up to 100 μM. Dapansutri inhibits ASC oligomerization and NLRP3 association with caspase-1 and ASC in LPS- and nigericin-stimulated J774A.1 cells. *In vivo*, dapansutri reduces myeloperoxidase (MPO), CXCL1, and IL-6 levels in peritoneal fluid as well as IL-1β levels in liver, lung, spleen, and skeletal muscle in a mouse model of LPS-induced systemic inflammation. It decreases oxidized glutathione and oxaloacetate and increases reduced glutathione, α-ketoglutarate, and citrate levels, markers of oxidative metabolism, in muscle in a mouse model of LPS-induced systemic inflammation. Dapansutri also reduces IL-1β release in blood monocytes isolated from patients with cryopyrin-associated periodic syndrome (CAPS), an autoinflammatory disorder characterized by gain-of-function mutations in NLRP3.

Reference

1. Marchetti, C., Swartzwelder, B., Gamboni, F., et al. OLT1177, a β-sulfonyl nitrile compound, safe in humans, inhibits the NLRP3 inflammasome and reverses the metabolic cost of inflammation. *Proc. Nat. Acad. Sci. USA* **115**(7), E1530-E1539 (2018).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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