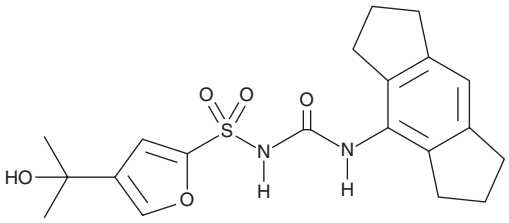
PRODUCT INFORMATION

MCC950

Item No. 17510

CAS Registry No.: 210826-40-7
Formal Name: N-[[(1,2,3,5,6,7-hexahydro-s-indacen-4-yl)amino]carbonyl]-4-(1-hydroxy-1-methylethyl)-2-furansulfonamide
Synonym: CP 456,773
MF: $C_{20}H_{24}N_2O_5S$
FW: 404.5
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

MCC950 is supplied as a crystalline solid. A stock solution may be made by dissolving the MCC950 in the solvent of choice, which should be purged with an inert gas. MCC950 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of MCC950 in these solvents is approximately 0.5, 5, and 30 mg/ml, respectively.

MCC950 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, MCC950 should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. MCC950 has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

MCC950 is an inhibitor of NOD-like receptor protein 3 (NLRP3) inflammasome activation.[1] It inhibits ATP-induced IL-1β release in LPS-primed mouse bone marrow-derived macrophages (BMDMs; IC_{50} = 7.5 nM), as well as cytosolic LPS-induced IL-1β release in Pam_3CSK_4-primed mouse BMDMs at 0.1 and 1 µM, indicating inhibition of both canonical and non-canonical NLRP3 inflammasome activation, respectively. MCC950 is selective for NLRP3 over NLRC4 and absent in melanoma 2 (AIM2) inflammasomes and does not inhibit LPS-induced NLRP3 priming in mouse BMDMs at 10 µM. It reduces ox-LDL-induced increases in caspase-1 activity and inhibits pyroptosis in THP-1 macrophages when used at a concentration of 1 µM.[2] MCC950 (10 mg/kg) reduces myocardial fibrosis in mice following myocardial infarction induced by left coronary artery ligation.[3] It improves forelimb grip strength and reduces spinal edema in a mouse model of spinal crush injury at the same dose.[4]

References

1. Coll, R.C., Robertson, A.A.B., Chae, J.J., *et al.* A small-molecule inhibitor of the NLRP3 inflammasome for the treatment of inflammatory diseases. *Nat. Med.* **21(3)**, 248-255 (2015).
2. Zeng, W., Wu, D., Sun, Y., *et al.* The selective NLRP3 inhibitor MCC950 hinders atherosclerosis development by attenuating infammation and pyroptosis in macrophages. *Sci. Rep.* **11(1)**, 19305 (2021).
3. Gao, R., Shi, H., Chang, S., *et al.* The selective NLRP3-inflammasome inhibitor MCC950 reduces myocardial fibrosis and improves cardiac remodeling in a mouse model of myocardial infarction. *Int. Immunopharmacol.* **74**, 105575 (2019).
4. Jiao, J., Zhao, G., Wang, Y., *et al.* MCC950, a selective inhibitor of NLRP3 inflammasome, reduces the inflammatory response and improves neurological outcomes in mice model of spinal cord injury. *Front. Mol. Biosci.* **7**, 37 (2020).

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