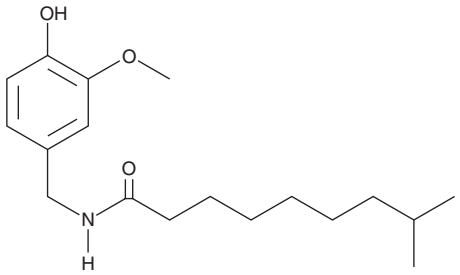
PRODUCT INFORMATION

Dihydrocapsaicin

Item No. 92355

CAS Registry No.:	19408-84-5
Formal Name:	N-[(4-hydroxy-3-methoxyphenyl) methyl]-8-methyl-nonanamide
MF:	$C_{18}H_{29}NO_3$
FW:	307.4
Purity:	≥98%
UV/Vis.:	λ_{max}: 230, 281 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥2 years
Item Origin:	Semisynthetic



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

Laboratory Procedures

Dihydrocapsaicin is supplied as a crystalline solid. A stock solution may be made by dissolving the dihydrocapsaicin in the solvent of choice, which should be purged with an inert gas. Dihydrocapsaicin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of dihydrocapsaicin in ethanol and DMF is approximately 100 mg/ml and approximately 33 mg/ml in DMSO.

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 dihydrocapsaicin can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of dihydrocapsaicin in PBS, pH 7.2, is approximately 0.1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Dihydrocapsaicin is a terpene alkaloid that has been found in *Capsicum* and has diverse biological activities.[1-3] It is active against *E. faecalis*, *B. subtilis*, *S. aureus*, *P. aeruginosa*, *K. pneumoniae*, *E. coli*, and *C. albicans* (MICs = 0.6-10 µg/ml).[1] Dihydrocapsaicin scavenges DPPH (Item No. 14805) and ABTS (Item No. 27317) radicals in cell-free assays. It increases LC3-II, a marker of autophagy, and catalase levels and reduces reactive oxygen species (ROS) production in normal WI38 lung fibroblasts and H1299, but not A549 or H460, lung cancer cells when used at a concentration of 200 µM.[2] Dihydrocapsaicin is an agonist of transient receptor potential vanilloid 1 (TRPV1) and inhibits NETosis induced by phorbol 12-myristate 13-acetate (TPA; Item No. 10008014) in isolated human neutrophils.[4,5] It induces cortical and systemic hypothermia and reduces infarct volume in a rat model of ischemia-reperfusion injury induced by middle cerebral artery occlusion (MCAO) when administered at a dose of 0.5 mg/kg, i.p.[3]

References

1. Nascimento, P.L.A., Nascimento, T.C.E.S., Ramos, N.S.M., *et al. Molecules* **19(4)**, 5434-5447 (2014).
2. Choi, C.-H., Jung, Y.-K., and Oh, S.-H. *Free Radic. Biol. Med.* **49(2)**, 245-257 (2010).
3. Wu, D., Shi, J., Elmadhoun, O., *et al. Brain Res.* **1671**, 18-25 (2017).
4. Feketa, V.V., Balasubramanian, A., Flores, C.M., *et al. Am. J. Physiol. Regul. Integr. Comp. Physiol.* **305(9)**, R1040-R1050 (2013).
5. Sondo, E., Bertelli, R., Pesce, E., *et al. Front. Immunol.* **10**, 963 (2019).

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.

WARRANTY AND LIMITATION OF REMEDY
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