

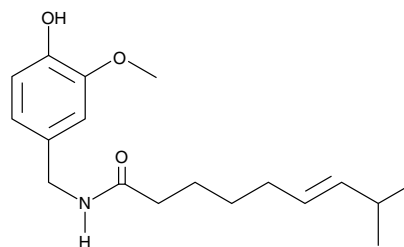
Product Information



Capsaicin

Item No. 92350

CAS Registry No.: 404-86-4
Formal Name: N-[(4-hydroxy-3-methoxyphenyl)methyl]-6E-8-methyl-nonenamide
MF: C₁₈H₂₇NO₃
FW: 305.4
Purity: ≥95%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid
UV/Vis.: λ_{max}: 230, 281 nm



Laboratory Procedures

For long term storage, we suggest that capsaicin be stored as supplied at -20°C. It will be stable for at least two years.

Capsaicin is supplied as a crystalline solid. A stock solution may be made by dissolving the capsaicin in an organic solvent purged with an inert gas. Capsaicin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of capsaicin in these solvents is at least 30 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 capsaicin can be prepared by directly dissolving the crystalline compound in aqueous buffers. The solubility of capsaicin in PBS (pH 7.2) is at least 0.1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Capsaicin is the primary active component of the heat and pain-eliciting lipid-soluble fraction of the *Capsicum* pepper.¹ Capsaicin is present in natural hot pepper extracts along with a number of impurities, including dihydrocapsaicin and several lesser impurities. Separation by HPLC is required in order to obtain capsaicin of consistently high purity and reproducible quality.² VR₁ is a heat-activated calcium ion channel which functions as part of the normal nociceptive pain pathway. Capsaicin elicits a sensation of burning pain by activation of VR₁ on small, non-myelinated polymodal C-type nociceptive nerve fibers.³ Chronic application of capsaicin leads to desensitization of these pain fibers and has been widely exploited in various non-prescription pain remedies.

References

1. Gannett, P.M., Nagel, D.L., Reilly, P.J., *et al.* The capsaicinoids: Their separation, synthesis, and mutagenicity. *J. Org. Chem.* **53**(5), 1064-1071 (1988).
2. Hoffman, P.G., Lego, M.C., and Galetto, W.G. Separation and quantitation of red pepper major heat principles by reverse-phase high-pressure liquid chromatography. *J. Agric. Food Chem.* **31**(6), 1326-1330 (1983).
3. Caterina, M.J., Schumacher, M.A., Tominaga, M., *et al.* The capsaicin receptor: A heat-activated ion channel in the pain pathway. *Nature* **389**, 816-824 (1997).

Related Product

Dihydrocapsaicin - Item No. 92355

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WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY. NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

MATERIAL SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Material Safety Data Sheet, which has been sent via email to your institution.

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