

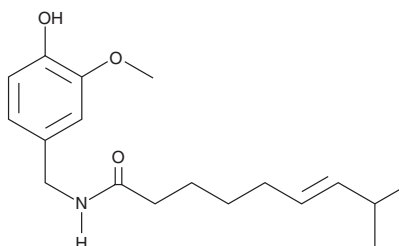
PRODUCT INFORMATION



Capsaicin (technical grade)

Item No. 10010743

CAS Registry No.: 404-86-4
Formal Name: (6E)-N-[(4-hydroxy-3-methoxyphenyl)methyl]-8-methyl-6-nonenamide
MF: C₁₈H₂₇NO₃
FW: 305.4
Purity: ≥60% (mixture of capsaicinoids)
UV/Vis.: λ_{max}: 230, 281 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years
Item Origin: Plant/*Capsicum*



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

Laboratory Procedures

Capsaicin (technical grade) is supplied as a crystalline solid. A stock solution may be made by dissolving the capsaicin (technical grade) in the solvent of choice, which should be purged with an inert gas. Capsaicin (technical grade) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of capsaicin (technical grade) in ethanol and DMF is approximately 50 mg/ml and approximately 30 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 capsaicin can be prepared by directly dissolving the crystalline compound in aqueous buffers. The solubility of capsaicin (technical grade) 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

Capsaicin is a terpene alkaloid that has been found in *Capsicum* and has diverse biological activities.¹⁻⁴ It induces inward currents in HEK293 cells expressing rat transient receptor potential vanilloid 1 (TRPV1; EC₅₀ = 0.64 μM at neutral pH), an effect that can be blocked by the TRPV1 inhibitor A-425619.¹ Capsaicin (10 and 50 μM) decreases LPS-induced prostaglandin E₂ (PGE₂; Item No. 14010) production, as well as reduces LPS- and IFN-induced nitric oxide (NO) release in isolated mouse peritoneal macrophages.² Capsaicin induces substance P (Item No. 24035) release in rat spinal cord slices with an EC₅₀ value of 2.3 μM.³ It reduces acetylcholine- or phenylquinone-induced writhing (ED₅₀s = 1.33 and 1.38 mg/kg, respectively, s.c.) but has no effect on the latency to paw withdrawal in the hot plate test in mice (ED₅₀ = >20 mg/kg, s.c.).⁴ Formulations containing capsaicin have been used in the treatment of nerve pain associated with shingles.

References

1. Neelands, T.R., Jarvis, M.F., Han, P., *et al.* Acidification of rat TRPV1 alters the kinetics of capsaicin responses. *Mol. Pain* **1**, 28 (2005).
2. Kim, C.-S., Kawada, T., Kim, B.-S., *et al.* Capsaicin exhibits anti-inflammatory property by inhibiting IκB-α degradation in LPS-stimulated peritoneal macrophages. *Cell. Signal.* **15**(3), 299-306 (2003).
3. Marvizón, J.C.G., Wang, X., Matsuka, Y., *et al.* Relationship between capsaicin-evoked substance P release and neurokinin 1 receptor internalization in the rat spinal cord. *Neuroscience* **118**(2), 535-545 (2003).
4. Hayes, A.G., Skingle, M., and Tyers, M.B. Effects of single doses of capsaicin on nociceptive thresholds in the rodent. *Neuropharmacology* **20**(5), 505-511 (1981).

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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