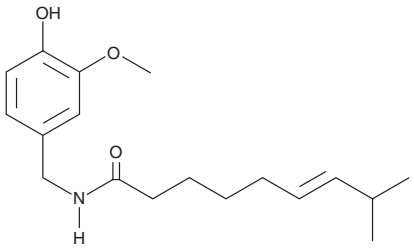
PRODUCT INFORMATION

Capsaicin

Item No. 92350

CAS Registry No.:	404-86-4
Formal Name:	N-[(4-hydroxy-3-methoxyphenyl) methyl]-6E-8-methyl-nonenamide
MF:	$C_{18}H_{27}NO_3$
FW:	305.4
Purity:	≥95%
UV/Vis.:	λ_{max}: 230, 281 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥2 years
Item Origin:	Plant/*Capsicum*



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

Laboratory Procedures

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.

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; EC_{50} = 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 E_2 (PGE_2; 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 release in rat spinal cord slices with an EC_{50} value of 2.3 µM.[3] It reduces acetylcholine- or phenylquinone-induced writhing (ED_{50}s = 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 (ED_{50} = >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 TRPVI 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 IkB-a 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).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM