**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.\(^3\) 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**