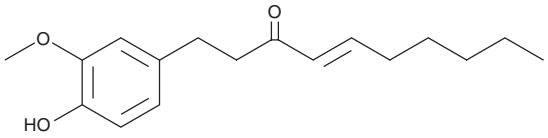
PRODUCT INFORMATION

6-Shogaol

Item No. 11901

CAS Registry No.: 555-66-8
Formal Name: 1-(4-hydroxy-3-methoxyphenyl)-4-decen-3-one
MF: $C_{17}H_{24}O_3$
FW: 276.4
Purity: ≥95%
UV/Vis.: λ_{max}: 203, 224, 281 nm
Supplied as: A solution in ethanol
Storage: -20°C
Stability: ≥2 years



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

Laboratory Procedures

6-Shogaol is supplied as a solution in ethanol. To change the solvent, simply evaporate the ethanol under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as DMSO and dimethyl formamide purged with an inert gas can be used. The solubility of 6-shogaol in these solvents is approximately 20 mg/ml.

6-Shogaol is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, the ethanolic solution of 6-shogaol should be diluted with the aqueous buffer of choice. 6-Shogaol has a solubility of approximately 0.25 mg/ml in a 1:3 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

6-Shogaol is a minor, bioactive component of ginger (*Zingiber officinale* Roscoe) with anti-inflammatory and anticancer properties. It is present in fresh ginger at low levels, but quantities of 6-shogaol are significantly increased in dried ginger. 6-Shogaol induces apoptosis in cancer cells through the production of reactive oxygen species and the activation of caspase, impairs tubulin polymerization, downregulates NF-κB signaling, inhibits the expression of inflammatory mediators, and suppresses Toll-like receptor signaling.[1] 6-Shogaol-rich extracts have been shown to enhance antioxidant defense mechanisms by inducing Nrf2/ARE-mediated gene expression in cell and animal models.[2] It can also activate both TRPV1 and TRPA1 channels (EC_{50}s = 0.32 and 16 µM, respectively).[3]

References

1. Ling, H., Yang, H., Tan, S.-H., *et al.* 6-Shogaol, an active constituent of ginger, inhibits breast cancer cell invasion by reducing matrix metalloproteinase-9 expression *via* blockade of nuclear factor-κB activation. *Brit. J. Pharmacol.* **161**, 1763-1777 (2010).
2. Bak, M.-J., Ok, S., Jun, M., *et al.* 6-Shogaol-rich extract from ginger up-regulates the antioxidant defense systems in cells and mice. *Molecules* **17**, 8037-8055 (2012).
3. Morera, E., De Petrocellis, L., Morera, L., *et al.* Synthesis and biological evaluation of [6]-gingerol analogues as transient receptor potential channel TRPV1 and TRPA1 modulators. *Bioorg. Med. Chem. Lett.* **22(4)**, 1674-1677 (2012).

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