



## Product Information

Product ID C0025

CAS No.

Chemical Name

Synonym

Formula  $C_{40}H_{66}O_4$

Formula Wt. 610.95

Melting Point

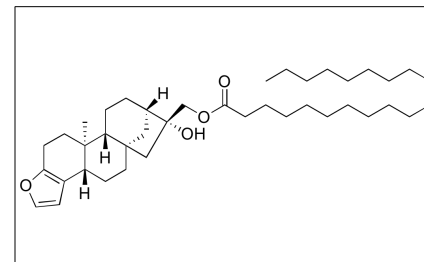
Purity  $\geq 98\%$

Solubility

Store Temp  $-20^{\circ}C$

Ship Temp Ambient

**Description** Cafestol is a diterpene found in brewed, unfiltered coffee that exhibits anti-angiogenic, anticancer, chemopreventive, neuromodulatory, anti-inflammatory, and hyperlipidemic activities. Cafestol inhibits proliferation, migration, and tube formation in vitro, potentially through decreasing phosphorylation of FAK and Akt. In renal carcinoma cells, cafestol induces G1 phase cell cycle arrest and apoptosis, decreases the mitochondrial membrane potential, increases activation of caspase 3, downregulates expression of Bcl-2, Bcl-cl, Mcl-1, and FLIP, suppresses Akt pathway signaling, and inhibits cellular proliferation. In other cellular models, cafestol decreases aflatoxin B1-induced DNA adduct formation and increases levels of glutathione-S-transferase. Additionally, cafestol activates Nrf2 and displays protective benefit in models of Parkinson's disease. In LPS-stimulated macrophages, this compound inhibits ERK2 and MEK1 and decreases production of COX-2 and prostaglandin E2 (PGE2). In vivo, cafestol upregulates expression of genes involved in cholesterol homeostasis by acting as an agonist at the farnesoid X receptor (FXR) and pregnane X receptor (PXR).



**Bulk quantities available upon request**

Product ID	Size
C0025	25 mg
C0025	50 mg
C0025	100 mg

**References** Wang S, Yoon YC, Sung MJ, et al. Antiangiogenic properties of cafestol, a coffee diterpene, in human umbilical vein endothelial cells. *Biochem Biophys Res Commun*. 2012 May 11;421(3):567-71. PMID: 22525673.

Choi MJ, Park EJ, Oh JH, et al. Cafestol, a coffee-specific diterpene, induces apoptosis in renal carcinoma Caki cells through down-regulation of anti-apoptotic proteins and Akt phosphorylation. *Chem Biol Interact*. 2011 Apr 25;190(2-3):102-8. PMID: 21334318.

Trinh K, Andrews L, Krause J, et al. Decaffeinated coffee and nicotine-free tobacco provide neuroprotection in Drosophila models of Parkinson's disease through an NRF2-dependent mechanism. *J Neurosci*. 2010 Apr 21;30(16):5525-32. PMID: 20410106.

Shen T, Lee J, Lee E, et al. Cafestol, a coffee-specific diterpene, is a novel extracellular signal-regulated kinase inhibitor with AP-1-targeted inhibition of prostaglandin E2 production in lipopolysaccharide-activated macrophages. *Biol Pharm Bull*. 2010;33(1):128-32. PMID: 20045950.

Ricketts ML, Boekschoten MV, Kreeft AJ, et al. The cholesterol-raising factor from coffee beans, cafestol, as an agonist ligand for the farnesoid and pregnane X receptors. *Mol Endocrinol*. 2007 Jul;21(7):1603-16. PMID: 17456796.

Cavin C, Holzhäuser D, Constable A, et al. The coffee-specific diterpenes cafestol and kahweol protect against aflatoxin B1-induced genotoxicity through a dual mechanism. *Carcinogenesis*. 1998 Aug;19(8):1369-75. PMID: 9744531.

**Caution:** This product is intended for laboratory and research use only. It is not for human or drug use.