Product Datasheet

Dihydro Daidzein

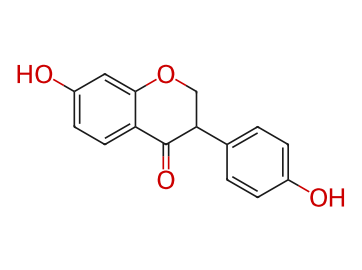
Catalog No. **BP-02288** · CAS **17238-05-0** · Form **free base** · Physical state **solid** · Color **Off-white to gray** · Version **1.0** · Revision **2026-11-04**

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Target	Research area
Endogenous Metabolite; Apoptosis; NF-κB; p38 MAPK	**Cardiovascular Disease; Metabolic Disease; Inflammation/Immunology; Cancer**

Molecular formula	$C_{15}H_{12}O_4$
Molecular weight	**256.2534**

STRUCTURE



DESCRIPTION

Dihydrodaidzein is a dietary phytoestrogen. Dihydrodaidzein possesses functions including antioxidation, inhibition of DNA oxidative damage, regulation of lipid metabolism and maintenance of intestinal flora stability. Dihydrodaidzein induces apoptosis, regulates immune responses, modulates tumor-related factors, activates the Bmp-2 signaling pathway, inhibits NF-κB and MAPK, and exhibits anti-inflammatory activity. Dihydrodaidzein can be used in research related to cancer, cardiovascular diseases, osteoporosis and inflammatory diseases[1][2][3][4][5].

BIOLOGICAL ACTIVITY

In Vitro

Dihydrodaidzein, which is obtained as a racemic mixture through the conversion of Daidzein by cell extracts of Slackia isoflavoniconvertens, can be further converted into Equol ((-)-(S)-Equol).

Dihydrodaidzein can be absorbed and converted into Equol ((-)-(S)-Equol) by bacteria of the genus Lactococcus.

Dihydrodaidzein exhibits high effective permeability in artificial membrane and Caco-2 monolayer assays, indicating its superior intestinal permeability.

Dihydrodaidzein promotes osteogenesis in MC3T3-E1 cells via the Bmp2 pathway and inhibits osteoclastogenesis in RAW 264.7 cells by suppressing the NF-κB and MAPK pathways.

Dihydrodaidzein possesses favorable water solubility (0.14 g/L), exhibits definite solubility in various organic solvents and alkaline solutions, and has a pKa value of 7.71.

SOLUBILITY

Soluble in DMSO : 100 mg/mL

REFERENCES

[1].Schröder C, et al. Identification and expression of genes involved in the conversion of daidzein and genistein by the equol-forming bacterium Slackia isoflavoniconvertens. Applied and environmental microbiology. 2013 Jun;79(11):3494-502.

[2].Franke AA, et al. Liquid chromatographic-photodiode array mass spectrometric analysis of dietary phytoestrogens from human urine and blood. Journal of chromatography. B, Analytical technologies in the biomedical and life sciences. 2002 Sep 25;777(1-2):45-59.

[3].Ubaid M, et al. Daidzein from Dietary Supplement to a Drug Candidate: An Evaluation of Potential. ACS omega. 2023 Sep 12;8(36):32271-32293.

[4].Shimada Y, et al. Cloning and expression of a novel NADP(H)-dependent daidzein reductase, an enzyme involved in the metabolism of daidzein, from equol-producing Lactococcus strain 20-92. Applied and environmental microbiology. 2010 Sep;76(17):5892-901.

[5].Zou P, et al. Advances on resource, biosynthesis pathway, bioavailability, and bioactivity of dihydrodaidzein. Phytochem Rev. 2025;24:3915-3940.

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