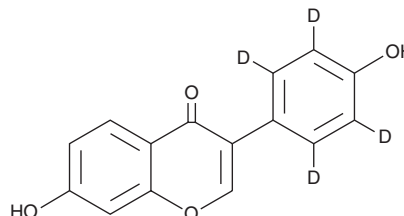


PRODUCT INFORMATION



Daidzein-d₄ Item No. 18249

CAS Registry No.: 1219803-57-2
Formal Name: 7-hydroxy-3-(4-hydroxyphenyl-2,3,5,6-d₄)-4H-1-benzopyran-4-one
MF: C₁₅H₆D₄O₄
FW: 258.3
Chemical Purity: ≥98% (Daidzein)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₄); ≤1% d₀
Supplied as: A solid
Storage: -20°C
Stability: ≥2 years



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

Laboratory Procedures

Daidzein-d₄ is intended for use as an internal standard for the quantification of daidzein (Item No. 10005166) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Daidzein-d₄ is supplied as a solid. A stock solution may be made by dissolving the daidzein-d₄ in the solvent of choice. Daidzein-d₄ is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of daidzein-d₄ in these solvents is approximately 0.1, 30, and 10 mg/ml, respectively.

Description

Daidzein is an isoflavone phytoestrogenic compound that has been found in soybeans and other legumes.¹ It binds to estrogen receptor β (ERβ; K_i = 2.8 μM) but not ERα at concentrations up to 1 mM.² It is estrogenic *in vitro*, increasing gene transcription mediated by the estrogen response element (ERE) in a reporter assay in an ERβ-dependent manner (EC₅₀ = 2.8 μM for MCF-7 cells expressing ERβ).¹ Daidzein is an inhibitor of carbonic anhydrase (CA) that is selective for carbonic CAVII and CAXII (K_is = 4.2 and 56 nM, respectively) over CAI, II, and IV (K_is = >10,000, >10,000, and 718.7 nM, respectively).³ It reduces tumor growth in a PC3 prostate cancer mouse orthotopic model when administered at a dose of 50 mg/kg per day and potentiates the effects of radiation therapy.⁴

References

1. Harris, D.M., Besselink, E., Henning, S.M., *et al.* Phytoestrogens induce differential estrogen receptor alpha- or beta-mediated responses in transfected breast cancer cells. *Exp. Biol. Med. (Maywood)* **230(8)**, 558-568 (2005).
2. Zhao, L. and Brinton, R.D. Structure-based virtual screening for plant-based ERβ-selective ligands as potential preventative therapy against age-related neurodegenerative diseases. *J. Med. Chem.* **48(10)**, 3463-3466 (2005).
3. Karioti, A., Ceruso, M., Carta, F., *et al.* New natural product carbonic anhydrase inhibitors incorporating phenol moieties. *Bioorg. Med. Chem.* **23(22)**, 7219-7225 (2015).
4. Singh-Gupta, V., Zhang, H., Yunker, C.K., *et al.* Daidzein effect on hormone refractory prostate cancer *in vitro* and *in vivo* compared to genistein and soy extract: Potentiation of radiotherapy. *Pharm. Res.* **27(6)**, 1115-1127 (2010).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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