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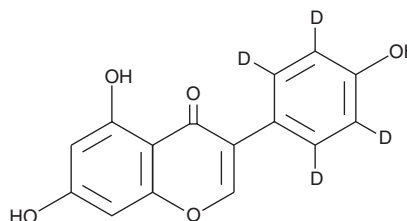
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PRODUCT INFORMATION



Genistein-d₄ Item No. 18244

CAS Registry No.: 187960-08-3
Formal Name: 5,7-dihydroxy-3-(4-hydroxyphenyl)-2,3,5,6-d₄-4H-1-benzopyran-4-one
MF: C₁₅H₆D₄O₅
FW: 274.3
Chemical Purity: ≥95% (Genistein)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₄); ≤1% d₀
UV/Vis.: λ_{max}: 261 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥2 years
Item Origin: Synthetic



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

Laboratory Procedures

Genistein-d₄ is intended for use as an internal standard for the quantification of genistein (Item No. 10005167) 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).

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

Description

Genistein is an isoflavonoid phytoestrogen that has been found in soybeans (*G. max*/*S. hispida*) and has kinase inhibitory, anticancer, pro-cancer, hepatoprotective, and antiviral properties.¹ It inhibits the tyrosine kinases EGFR, pp50^{v-Src}, and pp110^{gag-fes} (IC₅₀ = 6, 7-8, and 6.5 μg/ml, respectively) and decreases EGF-induced serine, threonine, and tyrosine phosphorylation of EGFR in A431 cells when used at a concentration of 20 μg/ml.² Genistein inhibits proliferation and induces apoptosis in a variety of cancer cells, including Bel 7402 hepatocellular carcinoma cells when used at a concentration of 10 μg/ml.¹⁻³ It reduces tumor invasion and angiogenesis in a Bel 7402 mouse subrenal capsule xenograft model when administered at a dose of 50 mg/kg per day.³ However, when administered at the same dose on postnatal days 1-5, genistein increases the incidence of uterine adenocarcinoma in a mouse model of cancer induced by the estrogen receptor agonist diethylstilbestrol (DES; Item No. 10006876).⁴ It reduces lipid accumulation and inflammation in the liver of ovariectomized (OVX) and non-OVX female rats in a model of high-fat high-fructose diet-induced nonalcoholic hepatosteatosis (NASH) when administered at a dose of 16 mg/kg per day.⁵ Genistein (10 μM) also inhibits HIV-1 DNA synthesis in resting CD4⁺ T cells.⁶

References

1. Spagnuolo, C., Russo, G.L., Orhan, I.E., et al. *Adv. Nutr.* **6**(4), 408-419 (2015).
2. Akiyama, T., Ishida, J., Nakagawa, S., et al. *J. Biol. Chem.* **262**(1), 5592-5595 (1987).
3. Gu, Y., Zhu, C.-F., Iwamoto, H., et al. *World J. Gastroenterol.* **11**(41), 6512-6517 (2005).
4. Newbold, R.R., Banks, E.P., Bullock, B., et al. *Cancer Res.* **61**, 4325-4328 (2001).
5. Pummong, S., Werawatganon, D., Klaikeaw, N., et al. *Pharmacogn. Mag.* **14**(55), 20-24 (2018).
6. Guo, J., Xu, X., Rasheed, T.K., et al. *Retrovirology* **10**, 62 (2013).

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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