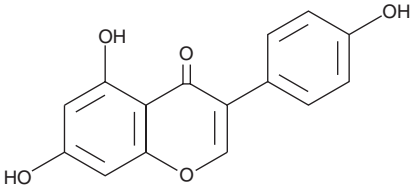
PRODUCT INFORMATION

Genistein

Item No. 10005167

CAS Registry No.:	446-72-0
Formal Name:	5,7-dihydroxy-3-(4-hydroxyphenyl)-4H-1-benzopyran-4-one
Synonyms:	CI-75610, NSC 36586
MF:	$C_{15}H_{10}O_5$
FW:	270.2
Purity:	≥98%
UV/Vis.:	λ_{max}: 261 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years
Item Origin:	Plant/*Styphnolobium japonicum*



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

Laboratory Procedures

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

Genistein is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, genistein should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Genistein has a solubility of approximately 1 mg/ml in a 1:6 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

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, $pp50^{v\text{-}Src}$, and $pp110^{gag\text{-}fes}$ (IC_{50}s = 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. Pummoung, S., Werawatganon, D., Klaikeaw, N., *et al. Pharmacogn. Mag.* **14(55)**, 20-24 (2018).
6. Guo, J., Xu, X., Rasheed, T.K., *et al.* Genistein interferes with SDF-1- and HIV-mediated actin dynamics and inhibits HIV infection of resting CD4 T cells. *Retrovirology* **10**, 62 (2013).

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