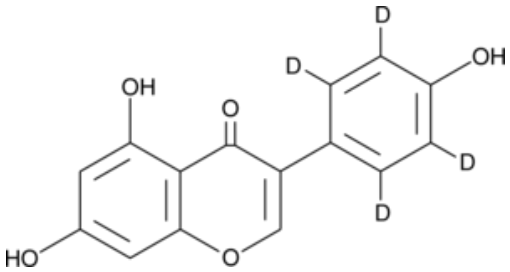
Product Data Sheet

Product Name: Genistein-d4
Cat. No.: GC47398

Chemical Properties

Cas. No.	187960-08-3		
SMILES	O=C1C(C2=C([2H])C([2H])=C(O)C([2H])=C2[2H])=COC3=CC(O)=CC(O)=C31		
Formula	C15H6D4O5	M.Wt	274.3
Solubility	DMF: 30 mg/ml,DMSO: 30 mg/ml,DMSO:PBS (pH 7.2) (1:6): 1 mg/ml	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure			

Background

Genistein-d_4 is intended for use as an internal standard for the quantification of genistein by GC- or LC-MS. 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} = 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

Product Data Sheet

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 .[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]

1.Spagnuolo, C., Russo, G.L., Orhan, I.E., et al.Genistein and cancer: Current status, challenges, and future directionsAdv. Nutr.6(4)408-419(2015) 2.Akiyama, T., Ishida, J., Nakagawa, S., et al.Genistein, a specific inhibitor of tyrosine-specific protein kinasesJ. Biol. Chem.262(1)5592-5595(1987) 3.Gu, Y., Zhu, C.-F., Iwamoto, H., et al.Genistein inhibits invasive potential of human hepatocellular carcinoma by altering cell cycle, apoptosis, and angiogenesisWorld J. Gastroenterol.11(41)6512-6517(2005) 4.Newbold, R.R., Banks, E.P., Bullock, B., et al.Uterine adenocarcinoma in mice treated neonatally with genisteinCancer Res.614325-4328(2001) 5.Pummoung, S., Werawatganon, D., Klaikeaw, N., et al.Genistein-attenuated hepatic steatosis and inflammation in nonalcoholic steatohepatitis with bilateral ovariectomized ratsPharmacogn. 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 cellsRetrovirology1062(2013)