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:** C₁₅H₁₀O₅  
**FW:** 270.2  
**Purity:** ≥98%  
**UV/Vis.:** λₒ = 261 nm  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥2 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. Genistein is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. 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, anti-cancer, pro-cancer, and hepatoprotective properties.¹ It inhibits the tyrosine kinases EGFR, pp50v-Src, and pp110v-gag (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.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 also 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

**References**