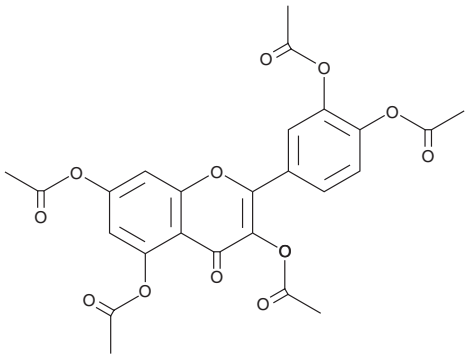
PRODUCT INFORMATION

Pentaacetylquercetin

Item No. 26694

CAS Registry No.:	1064-06-8
Formal Name:	3,5,7-*tris*(acetyloxy)-2-[3,4-*bis*(acetyloxy) phenyl]-4H-1-benzopyran-4-one
Synonyms:	Peracetylated Quercetin, Quercetin Pentaacetate
MF:	$C_{25}H_{20}O_{12}$
FW:	512.4
Purity:	≥95%
UV/Vis.:	λ_{max}: 251, 299 nm
Supplied as:	A crystalline 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

Pentaacetylquercetin is supplied as a crystalline solid. A stock solution may be made by dissolving the pentaacetylquercetin in the solvent of choice. Pentaacetylquercetin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of pentaacetylquercetin in ethanol is approximately 2 mg/ml and approximately 30 mg/ml in DMSO and DMF.

Pentaacetylquercetin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, pentaacetylquercetin should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Pentaacetylquercetin has a solubility of approximately 1 mg/ml in a 1:4 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Pentaacetylquercetin is a pentaacetylated derivative of the flavonoid quercetin (Item No. 10005169) that has diverse biological activities, including antioxidant, anti-inflammatory, and anticancer properties.[1-3] It scavenges 2,2-diphenyl-1-picrylhydrazyl (DPPH; Item No. 14805) radicals *in vitro* (IC_{50} = 3.74 µg/ml) and inhibits iron(II) chloride-induced lipid peroxidation in rat liver mitochondria (IC_{50} = 20.2 µg/ml).[1] Pentaacetylquercetin inhibits LPS-induced increases in nitrite (IC_{50} = 8.7 µM) and PGE_2 (Item No. 14010) production, as well as inducible nitric oxide synthase (iNOS) and COX-2 levels, in RAW 264.7 cells when used at concentrations of 20 and 40 µM.[2] It also inhibits the growth of HL-60, U937, and SK-MEL-1 cells (IC_{50}s = 38, 25, and 58 µM, respectively).[3]

References

1. Chang, H.-F. and Yang, L.-L. Radical-scavenging and rat liver mitochondria lipid peroxidative inhibitory effects of natural flavonoids from traditional medicinal herbs. *J. Med. Plant Res.* **6(6)**, 997-1006 (2012).
2. Chen, Y.-C., Shen, S.-C., Lee, W.-R., *et al.* Inhibition of nitric oxide synthase inhibitors and lipopolysaccharide induced inducible NOS and cyclooxygenase-2 gene expressions by rutin, quercetin, and quercetin pentaacetate in RAW 264.7 macrophages. *J. Cell. Biochem.* **82(4)**, 537-548 (2001).
3. Díaz, J.G., Carmona, A.J., Torres, F., *et al.* Cytotoxic activities of flavonoid glycoside acetates from *Consolida oliveriana*. *Planta Med.* **74(2)**, 171-174 (2008).

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