Product Name: Quercetin

Chemical Properties

**Product Name:** Quercetin

**Cas No.:** 117-39-5

**M.Wt:** 302.24

**Formula:** C15H10O7

**Chemical Name:** 2-(3,4-dihydroxyphenyl)-3,5,7-trihydroxycromen-4-one

**Canonical SMILES:** C1=CC(=C(C=C1C2=C(C(=O)C3=C(C(C=C(C3O2)O)O)O)O)O)

**Solubility:** >15.1mg/mL in DMSO

**Storage:** Store at RT

**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.

**Shopping Condition:** Evaluation sample solution: ship with blue ice
All other available size: ship with RT, or blue ice upon request

Biological Activity

**Targets:** PI3K/Akt/mTOR Signaling

**Pathways:** PI3K

**Description:**
Quercetin is an important dietary flavonoid, present in vegetables, fruits, seeds, nuts, tea and red wine. It has various biological functions in terms of tumor prevention. Quercetin is a strong inhibitor of PI3K, NF-κB, and other kinases involved in intracellular signaling. It can also mildly inhibit Akt1/2, and slightly affect PKC, p38 and ERK1/2 [1].
A number of reports have demonstrated that Quercetin possessed anti-inflammatory, anti-oxidant and pro-apoptotic functions in cancer cells and inhibited tumor progress with
different mechanisms. Quercetin increased cytosolic Ca2+ levels and disrupted the mitochondrial membrane potential (MMP), which in turn promoted the release of cytochrome c in the cytoplasm, thus activating multiple caspases such as caspase-3, -8 and -9 and subsequently inducing apoptosis via mitochondrial pathway [2]. Quercetin induced cell-cycle arrest and apoptosis, which was associated with the function of p53. Quercetin could promote p53 phosphorylation and therefore stabilize p53 both at the mRNA and protein level [3]. However, several studies investigated that cells with impaired p53 became more sensitive to Quercetin mediated cytotoxicity and apoptosis [4].

In vivo studies showed that administration of Quercetin before the initiation stage of carcinogenesis dramatically reduced various chemical agents induced tumor burden in mice models, including benzo(a)pyrene-induced lung tumor burden, azoxymethane-induced preneoplastic lesions in rat colon and N-nitrosodiethylamine-induced hepatocarcinoma etc. [5].

Reference:
The effects of quercetin on antioxidant status and tumor markers in the lung and serum of mice treated with benzo(a)pyrene. Biological and Pharmaceutical Bulletin. 2007

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most ApexBio products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Shortterm storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.