**Product Data Sheet**

**Chemical Properties**

- **Product Name:** Butein
- **Cas No.:** 487-52-5
- **M.Wt:** 272.25
- **Formula:** C15H12O5
- **Chemical Name:** (E)-1-(2,4-dihydroxyphenyl)-3-(3,4-dihydroxyphenyl)prop-2-en-1-one
- **Canonical SMILES:** C1=CC(=C(C1C=CC(=O)C2=C(C=C(C=C2)O)O)O)O
- **Solubility:** ≥13.6mg/mL in DMSO
- **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.
- **Shopping Condition:** Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.

**Biological Activity**

- **Targets:** JAK/STAT Signaling
- **Pathways:** EGFR
- **Description:** Butein, a chalconoid has anti-oxidant effect, which has various pharmacological effects. Reactive oxygen species (ROS), produced intracellularly through multiple mechanisms and depending on the cell and tissue types, mainly ROS NADPH oxidase (NOX) complexes in cell membranes, mitochondria, peroxisomes, and endoplasmic reticulum, via dental adhesive bleaching agents and pulpal disease, can cause oxidative stress. [1] ROS are formed as a natural product of the normal metabolism of oxygen and have important roles in cell signaling and homeostasis. However, during times of environmental stress, ROS levels can increase dramatically. [2] H2O2-induced cytotoxicity and production of ROS were blocked in the presence...
of butein, and these effects were dose dependent. Due to the dual role of ROS, both prooxidant and antioxidant-based anticancer agents have been developed. Butein can induce the apoptosis in B16 melanoma cells and human promyelocytic leukemia cells, inhibit diabetes complications, and inhibit enzymes such as protein kinases and glutathione reductase. [3,4,5,6] Recently, Butein was isolated from R. verniciflua which suppress cellular damage from oxidation caused by H2O2 in HDP cells, through JNK–Nrf2/ARE-dependent HO-1 expression.[7] In addition, Butein attenuated VEGF and MMP-9 activities via the suppression of NF-kB activity by flow cytometric analysis and RT-PCR in vitro. Furthermore, Butein repressed the expression of VEGF and MMP-9 induced by treatment with tumor necrosis factor-α and phorbol-12-myristate-13-acetate mainly through Electrophoretic mobility shift assay (EMSA) and Enzyme-linked immunosorbent assay (ELISA), resulting in an inhibition of cell growth, invasion and angiogenesis of prostate cancer.[8] Thus, Butein may be a promising therapeutic agent for the treatment of various dental diseases.

Reference:
2. Devasagayam, TPA; Tilak JC; Boloor KK; Sane Ketaki S; Ghaskadbi Saroj S; Lele RD. "Free Radicals and Antioxidants in Human Health: Current Status and Future Prospects". Journal of Association of Physicians of India (JAPI), 2004, 52: 796.

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. Short term 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.