Calycosin-7-O-β-D-glucoside, a melanin biosynthesis inhibitor, is isolated from the methanol extract of astragalus. IC50 value: 68 μM in inhibition of Tyrosinase.

Description

In vitro: Calycosin-7-O-β-D-glucoside showed a melanin biosynthesis inhibition zone in a culture plate of Streptomyces bikiniensis. Furthermore, 75.78 μM of calycosin-7-O-β-D-glucoside dramatically decreased 50% of the melanin content on Melan-a cells without any apparent cytotoxicity [1]. Calycosin-7-O-β-D-glucoside was revealed to scavenge NO, inhibit the activities of MMP-2 and MMP-9, and attenuate cell death in the in vitro cultured brain microvascular endothelial cells under OGD condition. In vivo: Calycosin-7-O-β-D-glucoside treatment significantly reduced infarct volume, histological damage and blood–brain barrier permeability in the in vivo MCAO ischemia–reperfusion rat model [2]. To reveal its physiological functions under stress, seedlings with different isoflavonoid levels were established using a phenylalanine ammonia lyase (PAL) enzyme inhibitor, L-α-aminoxy-β-phenylpropionic acid (AOPP). The results showed that the significant promotion of antioxidant capacity in this species might be associated with the remarkable accumulation of Calycosin-7-O-β-D-glucoside after cold pretreatment. The results provided the first evidence that a type of isoflavonoid, Calycosin-7-O-β-D-glucoside, might play a very important role against freezing stress in vivo [3].
REFERENCES


[3]. Haiyun Pan, et al. Evidence of calycosin-7-O-β-d-glucoside’s role as a major antioxidant molecule of Astragalus membranaceus Bge. var. mongholicus (Bge.) Hsiao plants under freezing stress. Environmental and Experimental Botany Volume 109, January 2015, Pages 1–11

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Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA