

Screening Libraries

Proteins

Product Data Sheet

MCE ®

Proanthocyanidins

Cat. No.: HY-N0794
CAS No.: 20347-71-1

Target: Bacterial; Fungal
Pathway: Anti-infection

Storage: Powder -20°C 3 years

4°C 2 years

In solvent -80°C 6 months -20°C 1 month Proanthocyanidins

SOLVENT & SOLUBILITY

In Vitro DMSO: 100 mg/mL (Need ultrasonic)

H₂O: 5 mg/mL (ultrasonic and adjust pH to 11 with Na2CO3)

In Vivo

- 1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: 2.5 mg/mL (Infinity mM); Suspended solution; Need ultrasonic
- 2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (Infinity mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Proanthocyanidin (Procyanidin) are a class of polyphenolic that are widely distributed in higher plants, consisted of an electrophilic flavanyl unit. Proanthocyanidin can be used as antioxidant and anti-cancers agent. Proanthocyanidin also exhibit anti-inflammatory, cardioprotective, antibacterial and antifungal properties, which can be used in the treatment of chronic venous insufficiency, capillary fragility, sunburn and retinopathy. [1].

In Vitro

Proanthocyanidin are present in plants as complex mixtures of polymers. Predominant food sources are red wine, tea, chocolate and fruits like grapes, apples, pears, and cranberries [1].

?The most interesting antibacterial activity of Proanthocyanidin is related to their presence in cranberries (Vaccinium macrocarpon Ait.). A number of clinical trials have demonstrated the effectiveness of cranberry consumption in preventing urinary tract infections (UTIs). Although UTIs can be caused by many microorganisms, more than 85% are caused by Escherichia coli. The presence of P-fimbriae on E. coli, which are proteinaceous fibers on the bacterial cell wall, has been clearly established as a virulence factor, since they are responsible by producing adhesions for adherence to uroepithelial cells. Recently, it is demonstrated that cranberry Proanthocyanidin might inhibit P-fimbriated E. coli from adhering to uroepithelial cells. The antiadhesion activity of cranberry juice appears to be related to the presence of Proanthocyanidin with at least one A-type linkage^[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

The effects of cacao liquor Proanthocyanidin on 2- amino-1-methyl-6-phenylimidazo [4,5-b] pyridine-induced mutagenesis in vivo carcinogenesis in female Sprague-Dawley rats are investigated. In the Ames assay, Proanthocyanidin shows strong antimutagenic effects when assayed in the presence of S-9 mixture. They also inhibit significantly rat pancreatic carcinogenesis in the initiation stage, but not mammary carcinogenesis^[1].

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CUSTOMER VALIDATION

- Acta Pharmacol Sin. 2021 Jul 22.
- Antioxidants (Basel). 2023 Aug 24, 12(9), 1667.
- Naunyn Schmiedebergs Arch Pharmacol. 2023 Nov 27.

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REFERENCES

[1]. Kruger, Maria J, et al. Proanthocyanidins, anthocyanins and cardiovascular diseases. Food research international 2014 v.59 pp. 41-52

[2]. Cos P, et al. Proanthocyanidins in health care: current and new trends. Curr Med Chem. 2004 May;11(10):1345-59.

 $\label{lem:caution:Product} \textbf{Caution: Product has not been fully validated for medical applications. For research use only.}$

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