

PRODUCT INFORMATION



Procyanidin A1

Item No. 38893

CAS Registry No.: 103883-03-0
Formal Name: (2R,3S,8S,14R,15R)-2,8-bis(3,4-dihydroxyphenyl)-3,4-dihydro-8,14-methano-2H,14H-1-benzopyrano[7,8-d][1,3]benzodioxocin-3,5,11,13,15-pentol
Synonyms: Epicatechin-(4 β →8,2 β →O→7)-catechin, Proanthocyanidin A1, Procyanidol A1

MF: C₃₀H₂₄O₁₂

FW: 576.5

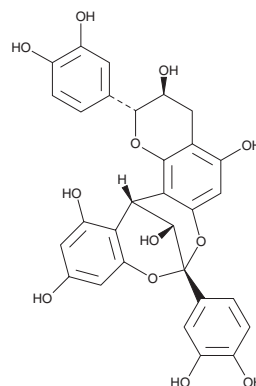
Purity: ≥98%

Supplied as: A solid

Storage: -20°C

Stability: ≥4 years

Item Origin: Plant/Grape seeds



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Procyanidin A1 is supplied as a solid. A stock solution may be made by dissolving the procyanidin A1 in the solvent of choice, which should be purged with an inert gas. Procyanidin A1 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of procyanidin A1 in these solvents is approximately 30 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of procyanidin A1 can be prepared by directly dissolving the solid in aqueous buffers. The solubility of procyanidin A1 in PBS (pH 7.2) is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Procyanidin A1 is a polyphenol flavonoid dimer of (-)-epicatechin (Item No. 11807) and (+)-catechin (Item No. 70940) that has been found in *R. spiciferum* and has diverse biological activities.¹⁻⁴ It binds to placenta growth factor (PlGF) and VEGF (K_d s = 394 and 476 nM, respectively) and increases the activity of JAK2 (EC_{50} = 660 nM).^{1,2} Procyanidin A1 scavenges superoxide radicals (IC_{50} = 14.7 μ M) and inhibits the cytopathic effects of HIV-1 in MT-4 cells (IC_{50} = 14 μ g/ml).³ It increases the proliferation of isolated mouse splenocytes and peritoneal macrophages when used at concentrations ranging from 25 to 100 μ M and DAMI megakaryoblasts (EC_{50} = 8.58 μ M).^{2,4} Procyanidin A1 (50 mg/kg) prevents decreases in the number of platelets in peripheral blood and megakaryocytes in the bone marrow in a mouse model of thrombocytopenia induced by the DNA cross-linking agent carboplatin (Item No. 13112).²

References

1. Pesca, M.S., Dal Piaz, F., Sanogo, R., et al. *J. Nat. Prod.* **76(1)**, 29-35 (2013).
2. Wang, R., Hu, X., Wang, J., et al. *Phytomedicine* **95:153880**, (2022).
3. De Bruyne, T., Pieters, L., Witvrouw, M., et al. *J. Nat. Prod.* **62(7)**, 954-958 (1999).
4. Liu, Y.Z., Cao, Y.G., Ye, J.Q., et al. *Fitoterapia* **81(2)**, 108-114 (2010).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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