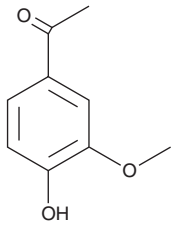
PRODUCT INFORMATION

Apocynin

Item No. 11976

CAS Registry No.:	498-02-2
Formal Name:	1-(4-hydroxy-3-methoxyphenyl)-ethanone
Synonyms:	Acetoguaiacone, Acetovanillone, NSC 2146, NSC 209524
MF:	$C_9H_{10}O_3$
FW:	166.2
Purity:	≥98%
UV/Vis.:	λ_{max}: 229, 276, 304 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



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

Laboratory Procedures

Apocynin is supplied as a crystalline solid. A stock solution may be made by dissolving the apocynin in the solvent of choice, which should be purged with an inert gas. Apocynin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of apocynin in ethanol is approximately 20 mg/ml and approximately 30 mg/ml in DMSO and DMF.

Apocynin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, apocyninshould first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Apocynin has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Apocynin is an acetophenone originally isolated from *P. kurroa* that has antioxidant and anti-inflammatory activities.[1,2] It inhibits glucose production in H-4-II-E-C3 cells (IC_{50} = 25 µM).[3] Apocynin inhibits the production of superoxide anions induced by PMA (Item No. 10008014) in isolated human leukocytes in a concentration-dependent manner.[1] It increases nitric oxide (NO) bioavailability in rat carotid arterial rings isolated from spontaneously hypertensive stroke-prone (SHRSP) rats when used at concentrations of 0.3 or 3 mM.[4] Apocynin (5 mg/kg) reduces lung injury and pulmonary TNF-α and IL-1β levels in a mouse model of pleurisy induced by carrageenan.[2] It inhibits IκBα degradation and reduces NF-κB p65 and inducible nitric oxide synthase (iNOS) protein levels in the same model. Formulations containing apocynin have been used in the treatment of rheumatoid arthritis, osteoarthritis, bronchial asthma, and chronic obstructive pulmonary disease (COPD).

References

1. Heumüller, S., Wind, S., Barbosa-Sicard, E., *et al.* Apocynin is not an inhibitor of vascular NADPH oxidases but an antioxidant. *Hypertension* **51(2)**, 211-217 (2008).
2. Hashimoto, J., Motohashi, K., Sakamoto, K., *et al.* Screening and evaluation of new inhibitors of hepatic glucose production. *J. Antibiot. (Tokyo)* **62(11)**, 625-629 (2009).
3. Hamilton, C.A., Brosnan, M.J., Al-Benna, S., *et al.* NAD(P)H oxidase inhibition improves endothelial function in rat and human blood vessels. *Hypertension* **40(5)**, 755-762 (2002).

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