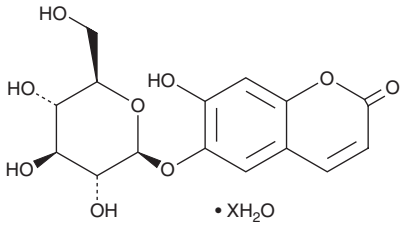
PRODUCT INFORMATION

Esculin (hydrate)

Item No. 28514

Formal Name:	6-(β-D-glucopyranosyloxy)-7-hydroxy-2H-1-benzopyran-2-one, hydrate
Synonyms:	Aesculin, Enallachrome
MF:	$C_{15}H_{16}O_9 \bullet XH_2O$
FW:	340.3
Purity:	≥98%
UV/Vis.:	λ_{max}: 225, 250, 335 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

Esculin (hydrate) is supplied as a crystalline solid. A stock solution may be made by dissolving the esculin (hydrate) in the solvent of choice, which should be purged with an inert gas. Esculin (hydrate) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of esculin (hydrate) in these solvents is approximately 3, 16, and 25 mg/ml, respectively.

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 esculin (hydrate) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of esculin (hydrate) in PBS, pH 7.2, is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Esculin is a coumarin that has been found in *A. hippocastanum* and has antioxidant and anti-inflammatory activities.[1,2] It reduces the size of gastric ulcers and decreases increases in the levels of malondialdehyde (MDA) and the activity of myeloperoxidase (MPO) and catalase in a mouse model of ethanol-induced ulcers when used at a dose of 25 mg/kg.[1] Esculin (20 mg/kg) decreases LPS-induced increases in the levels of TLR4, MyD88, IRAK4, and phosphorylated NF-κB in the lung, as well as levels of IL-1β, IL-6, and TNF-α in the bronchoalveolar lavage fluid (BALF) in a mouse model of acute lung injury.[2]

References

1. Rios, E.R., Rocha, N.F., Venâncio, E.T., *et al.* Mechanisms involved in the gastroprotective activity of esculin on acute gastric lesions in mice. *Chem. Biol. Interact.* **188(1),** 246-254 (2010).
2. Tianzhu, Z. and Shumin, W. Esculin inhibits the inflammation of LPS-induced acute lung injury in mice *via* regulation of TLR/NF-κB pathways. *Inflammation* **38(4),** 1529-1536 (2015).

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