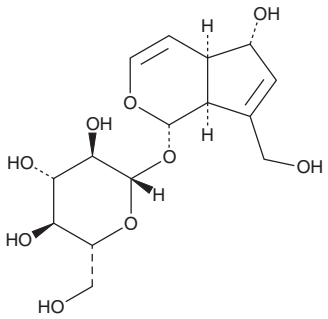
PRODUCT INFORMATION

Aucubin

Item No. 24928

CAS Registry No.:	479-98-1
Formal Name:	(1S,4aR,5S,7aS)-1,4a,5,7a-tetrahydro-5-hydroxy-7-(hydroxymethyl)cyclopenta[c]pyran-1-yl β-D-glucopyranoside
MF:	$C_{15}H_{22}O_9$
FW:	346.3
Purity:	≥98%
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

Aucubin is supplied as a crystalline solid. A stock solution may be made by dissolving the aucubin in the solvent of choice, which should be purged with an inert gas. Aucubin is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of aucubin 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 aucubin can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of aucubin in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Aucubin is an iridoid glycoside that has been found in *E. ulmoides* with diverse biological activities.[1,2] Aucubin (0.001-1 µg/ml) dose-dependently inhibits the IgE-stimulated secretion of IL-6 and TNF-α by RBL-2H3 mast cells (IC_{50}s = 0.19 and 0.1 µg/ml, respectively).[1] It reduces UVB-induced expression of matrix metalloproteinase-1 (MMP-1) in HS68 human foreskin fibroblasts by 57% when used at a concentration of 0.01 µg/ml.[2] Aucubin (0.01-1 µg/ml) also dose-dependently reduces production of reactive oxygen species (ROS) and malondialdehyde (MDA) levels, a marker of lipid peroxidation. In a mouse model of pulmonary fibrosis induced by bleomycin (Item No. 13877), aucubin (5 mg/kg, i.p.) decreases the breathing frequency, increases lung dynamic compliance, alleviates parenchymal fibrotic changes, and reduces expression of TGF-β1 and α-smooth muscle actin (α-SMA).[3] Aucubin (5 mg/kg, i.p.) reduces blood glucose levels and lipid peroxidation in the liver and kidneys of rats with diabetes induced by streptozotocin (Item No. 13104).[4] It also reduces the number of errors made in a Y-maze and enhances neuronal survival by approximately 7- and 4-fold, respectively, in rats with streptozotocin-induced diabetes.[5]

References

1. Jeong, H.J., Koo, H.N., Na, H.J., *et al. Cytokine* **18(5)**, 252-259 (2002).
2. Ho, J.N., Lee, Y.H., Park, J.S., *et al. Biol. Pharm. Bull.* **29(7)**, 1244-1248 (2005).
3. Zhou, Y., Li, P., Duan, J.X., *et al. Inflammation* **40(6)**, 2062-2073 (2017).
4. Jin, L., Xue, H.Y., Jin, L.J., *et al. Eur. J. Pharmacol.* **582(1-3)**, 162-167 (2008).
5. Xue, H.Y., Lu, Y.N., Fang, X.M., *et al. Mol. Biol. Rep.* **39(10)**, 9311-9318 (2012).

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