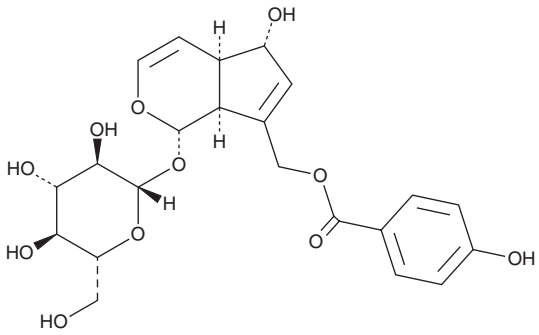
PRODUCT INFORMATION

Agnuside

Item No. 24971

CAS Registry No.:	11027-63-7
Formal Name:	1S,4aR,5S,7aS-tetrahydro-5-hydroxy-7-[[(4-hydroxybenzoyl)oxy]methyl]cyclopenta[c]pyran-1-yl, β-D-glucopyranoside
MF:	$C_{22}H_{26}O_{11}$
FW:	466.4
Purity:	≥98%
UV/Vis.:	λ_{max}: 203, 259 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

Agnuside is supplied as a crystalline solid. A stock solution may be made by dissolving the agnuside in the solvent of choice. Agnuside is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of agnuside in ethanol is approximately 0.5 mg/ml and approximately 10 mg/ml in DMSO and DMF.

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 agnuside can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of agnuside in PBS, pH 7.2, is approximately 0.2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Agnuside is an iridoid glycoside originally isolated from *V. rotundifolia* fruit that has diverse biological activities.[1-4] It inhibits COX-2 with an IC_{50} value of 0.026 mg/ml but exhibits less than 10% inhibition of COX-1 at this concentration.[1] It also inhibits 46.3, 66.8, and 82.1% of P-glycoprotein (P-gp) ATPase activity at concentrations of 5, 25, and 100 µM, respectively.[5] Agnuside (0.1-10 µM) induces proliferation of MCF-7 breast cancer cells, an effect that is inhibited by the estrogen receptor antagonist fulvestrant (ICI 182780; Item No. 10011269).[2] *In vivo*, agnuside (50 mg/kg) reduces acetic acid-induced writhing in mice indicating analgesia.[3] It also suppresses production of the pro-inflammatory mediators prostaglandin E_2 (PGE_2) and leukotriene B_4 (LTB_4; Item No. 20110) and the T cell-mediated cytokines IL-2, TNF-α, INF-γ, IL-4, IL-10, and IL-17 in splenocytes and arthritic paw tissue from arthritic adrenalectomized rats.[4]

References

1. Suksamrarn, A., Kumpun, S., Kirtikara, K., *et al. Planta Med.* **68(1)**, 72-73 (2002).
2. Hu, Y., Hou, T.T., Zhang, Q.Y., *et al. J. Pharm. Pharmacol.* **59(9)**, 1307-1312 (2007).
3. Okuyama, E., Fujimori, S., Yamazaki, M., *et al. Chem. Pharm. Bull. (Tokyo)* **46(4)**, 655-662 (1998).
4. Pandey, A., Bani, S., Satti, N.K., *et al. Inflamm. Res.* **61(4)**, 293-304 (2012).
5. Najar, I.A., Sachin, B.S., Sharma, S.C., *et al. Phytother. Res.* **24(3)**, 454-458 (2010).

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