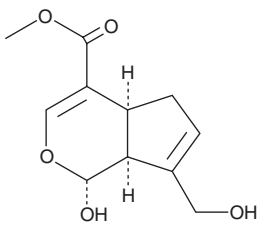
PRODUCT INFORMATION

Genipin

Item No. 10010622

CAS Registry No.:	6902-77-8
Formal Name:	1R,4aS,5,7aS-tetrahydro-1-hydroxy-7-(hydroxymethyl)-cyclopenta[c]pyran-4-carboxylic acid, methyl ester
Synonym:	(+)-Genipin
MF:	$C_{11}H_{14}O_5$
FW:	226.2
Purity:	≥98%
UV/Vis.:	λ_{max}: 240 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

Genipin is supplied as a crystalline solid. A stock solution may be made by dissolving the genipin in the solvent of choice, which should be purged with an inert gas. Genipin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of genipin in these solvents is approximately 5, 50, and 25 mg/ml, respectively.

Genipin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, genipin should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Genipin has a solubility of approximately 0.25 mg/ml in a 1:3 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Uncoupling protein 2 (UCP2) is a mitochondrial carrier protein that is expressed in pancreatic islets and has been shown to negatively regulate glucose-stimulated insulin secretion.[1,2] High levels of UCP2 expression can disrupt pancreatic β cell function and downregulate insulin secretion thereby contributing to the development of type 2 diabetes.[3] Genipin, a compound isolated from *Gardenis jasminoides* Ellis fruits, was originally identified as a protein cross-linking agent. Genipin is a cell-permeable inhibitor of UCP2 activity.[4] Genipin, at 5 µM, increases glucose-stimulated insulin secretion in isolated pancreatic islets chronically exposed to high levels of glucose.[5] Genipin also exhibits anti-inflammatory and anti-angiogenic properties by inducing apoptosis in FaO rat hepatoma cells and human hepatocarcinoma Hep3B cells.[6]

References

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2. Zhang, C.-Y., Baffy, G., Perret, P., *et al. Cell* **105(6)**, 745-755 (2001).
3. Sesti, G., Cardellini, M., Marini, M.A., *et al. Diabetes* **52(5)**, 1280-1283 (2003).
4. Parton, L.E., Ye, C.P., Coppari, R., *et al. Nature Letters* **449(7159)**, 228-232 (2007).
5. Zhang, C.-Y., Parton, L.E., Ye, C.P., *et al. Cell Metabolism* **3(6)**, 417-427 (2006).
6. Kim, B.-C., Kim, H.-G., Lee, S.-A., *et al. Biochem. Pharmacol.* **70(9)**, 1398-1407 (2005).

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