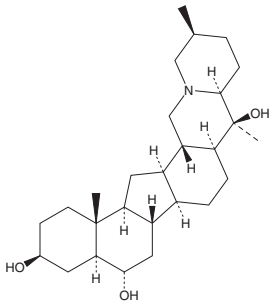
PRODUCT INFORMATION

Peimine

Item No. 29963



CAS Registry No.:	23496-41-5
Formal Name:	(5α)-cevane-3β,6α,20-triol
MF:	$C_{27}H_{45}NO_3$
FW:	431.7
Purity:	≥98%
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years
Item Origin:	Plant/*Fritillaria thunbergii*

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

Laboratory Procedures

Peimine is supplied as a crystalline solid. A stock solution may be made by dissolving the peimine in the solvent of choice, which should be purged with an inert gas. Peimine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of peimine in ethanol is approximately 1 mg/ml and approximately 30 mg/ml in DMSO and DMF.

Peimine is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, peimine should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Peimine 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

Peimine is an alkaloid that has been found in *Fritillaria* and has diverse biological activities, including ion channel inhibitory, anti-tussive, anticancer, and anti-inflammatory properties.[1-5] It is an inhibitor of voltage-gated sodium channel 1.7 ($Na_v1.7$; IC_{50}= 47.2 µM) and human-ether-a-go-go (hERG), also known as $K_v11.1$ (IC_{50} = 43.7 µM).[2,3] It increases the latent period of coughs, decreases the number of coughs, and has expectorant activity in a mouse model of ammonia liquor-induced cough when administered at a dose of 3 mg/kg.[1] Peimine (2.5, 5, and 10 µM) inhibits the growth of DU145, LNCaP, and PC3 prostate cancer, but not RWPE-1 non-cancerous, cells.[4] It also induces phosphorylation of calcium/calmodulin-dependent protein kinase II (CaMKII) in, and apoptosis of, PC3 cells and inhibits PC3 cell invasion, migration, and epithelial-to-mesenchymal transition. Peimine (10, 20, or 50 mg/animal) reduces tumor growth in a PC3 mouse xenograft model. It decreases IL-1β-induced nitric oxide (NO) and prostaglandin E_2 (PGE_2; Item No. 14010) production and reduces inducible NO synthase (iNOS) and COX-2 protein levels in primary mouse articular chondrocytes *in vitro*.[5] It also decreases the severity of osteoarthritis-associated histopathological alterations in a mouse model of osteoarthritis when administered at a dose of 20 mg/kg.

References

1. Wang, D., Zhu, J., Wang, S., *et al. Fitoterapia* **82(8)**, 1290-1294 (2011).
2. Xu, J., Zhao, W., Pan, L., *et al. Fitoterapia* **111**, 1-6 (2016).
3. Kan, L., Zhao, W., Pan, L., *et al. Biomed. Pharmacother.* **89**, 838-844 (2017).
4. Tan, H., Zhang, G., Yang, X., *et al. J. Cell. Biochem.* **121(1)**, 81-92 (2020).
5. Chen, K., Lv, Z.-T., Zhou, C.-H., *et al. Int. J. Mol. Med.* **43(5)**, 2241-2251 (2019).

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