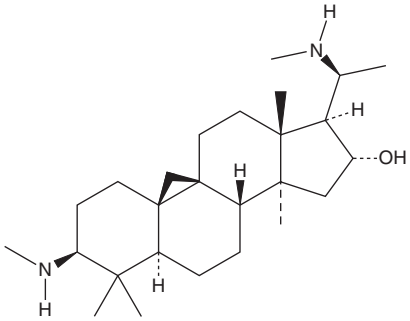
PRODUCT INFORMATION

Cyclovirobuxine D

Item No. 22260

CAS Registry No.:	860-79-7
Formal Name:	(3β,5α,16α,20S)-4,4,14-trimethyl-3,20-*bis*(methylamino)-9,19-cyclopregnan-16-ol
Synonyms:	CVB-D, NSC 91722
MF:	$C_{26}H_{46}N_2O$
FW:	402.7
Purity:	≥95%
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

Cyclovirobuxine D (CVB-D) is supplied as a crystalline solid. A stock solution may be made by dissolving the CVB-D in the solvent of choice, which should be purged with an inert gas. CVB-D is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of CVB-D in these solvents is approximately 1, 0.25, and 25 mg/ml, respectively.

CVB-D is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, CVB-D should first be dissolved in DMF and then diluted with the aqueous buffer of choice. CVB-D has a solubility of approximately 0.2 mg/ml in a 1:4 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

CVB-D is an alkaloid, and the main active component of the traditional Chinese medicine *B. microphylla*, that has diverse biological activities.[1-6] It is an ether-a-go-go related gene (ERG) potassium channel blocker with an IC_{50} value of 19.7 µM using whole-cell patch-clamp electrophysiology in HEK293 cells expressing the human receptor.[1] I_{ERG} blockade is activation-dependent, indicating CVB-D binds to open ERG channels. CVB-D increases the amount and rate of calcium release from intracellular stores in healthy neonatal rat cardiac myocytes and those isolated from adult rats with heart failure in a concentration-dependent manner.[2] It also increases expression of ryanodine receptor 2 (Ryr2) and sarcoplasmic reticulum calcium ATPase 2a (Serca2a) and decreases expression of the sodium-calcium exchanger (Ncx). *In vivo*, CVB-D (0.5-2.0 mg/kg) reduces mortality and improves cardiac function in a rat model of congestive heart failure.[3] CVB-D pretreatment (1 mg/kg per day for 4 days) inhibits myocardial apoptosis and mitochondrial cytochrome C release induced by doxorubicin (Item No. 15007) in mice.[4] CVB-D also induces cellular autophagy and inhibits growth of MCF-7 breast cancer cells and induces mitochondrial apoptosis in MGC803 and MKN26 gastric cancer cells.[5,6]

References

1. Zhao, J., Wang, Q., Xu, J., *et al. Eur. J. Pharmacol.* **660(2-3)**, 259-267 (2011).
2. Yu, B., Ruan, M., Zhou, L., *et al. Fitoterapia* **83(8)**, 1653-1665 (2012).
3. Yu, B., Fang, T.-H., Lü, G.-H., *et al. Fitoterapia* **82(6)**, 868-877 (2011).
4. Guo, Q., Guo, J., Yang, R., *et al. Oxid. Med. Cell. Longev.* 2015, 151972, (2015).
5. Lu, J., Sun, D., Gao, S., *et al. J. Pharmacol. Sci.* **125(1)**, 74-82 (2014).
6. Wu, J., Tan, Z., Chen, J., *et al. Molecules* **20(11)**, 20659-20668 (2015).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM