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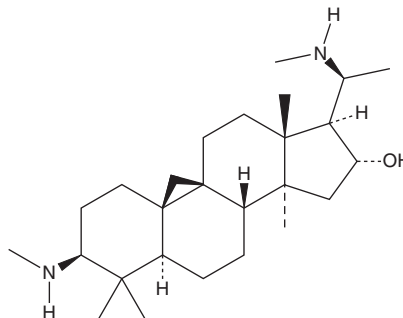
PRODUCT INFORMATION



Cyclovirobuxine D

Item No. 22260

CAS Registry No.: 860-79-7
Formal Name: (3 β ,5 α ,16 α ,20S)-4,4,14-trimethyl-3,20-bis(methylamino)-9,19-cyclopregnan-16-ol
Synonyms: CVB-D, NSC 91722
MF: C₂₆H₄₆N₂O
FW: 402.7
Purity: \geq 95%
Supplied as: A crystalline solid
Storage: -20°C
Stability: \geq 2 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. CVB-D is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. 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 IC₅₀ value of 19.7 μ M 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).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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