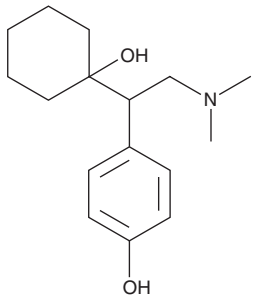
PRODUCT INFORMATION

(±)-O-Desmethyl Venlafaxine

Item No. 9001881

CAS Registry No.:	93413-62-8
Formal Name:	4-[2-(dimethylamino)-1-(1-hydroxycyclohexyl) ethyl]-phenol
Synonyms:	Desvenlafaxine, DVS 233, MDD-XR, Wy 45233
MF:	$C_{16}H_{25}NO_2$
FW:	263.4
Purity:	≥98%
UV/Vis.:	λ_{max}: 226, 275 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

(±)-O-Desmethyl venlafaxine is supplied as a crystalline solid. A stock solution may be made by dissolving the (±)-O-desmethyl venlafaxine in the solvent of choice, which should be purged with an inert gas. (±)-O-Desmethyl venlafaxine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of (±)-O-desmethyl venlafaxine in these solvents is approximately 0.10, 0.25, and 5 mg/ml, respectively.

(±)-O-Desmethyl venlafaxine is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, (±)-O-desmethyl venlafaxine should first be dissolved in DMF and then diluted with the aqueous buffer of choice. (±)-O-Desmethyl venlafaxine has a solubility of approximately 0.30 mg/ml in a 1:2 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

(±)-O-Desmethyl venlafaxine is an active metabolite of the selective norepinephrine and serotonin reuptake inhibitor (SNRI) venlafaxine.[1] It is formed from venlafaxine by the cytochrome P450 (CYP) isoform CYP2D6.[2] Desvenlafaxine inhibits the norepinephrine transporter (NET) and serotonin transporter (SERT) with IC_{50} values of 47.3 and 531.3 nM, respectively, for the human transporters.[1]It is selective for NET and SERT over 50 receptors, peptides, and ion channels among others. It increases extracellular norepinephrine (NE) in the male rat hypothalamus and increases extracellular serotonin (5-HT) in the same region when used in combination with the 5-HT_{1A} receptor antagonist WAY-100635 (Item No. 14599). Desvenlafaxine (3 mg/kg per day) reduces immobility time in the forced swim test in a rat model of cognitive deficits and depression induced by myocardial infarction (MI) when compared with MI-vehicle control animals 16 weeks following MI.[3] It also improves learning in the passive avoidance step-down test two weeks following MI compared to MI-vehicle control rats and spatial memory in the Morris water maze 16 weeks following MI.

References

1. Deecher, D.C., Beyer, C.E., Johnston, G., *et al.* Desvenlafaxine succinate: A new serotonin and norepinephrine reuptake inhibitor. *J. Pharmacol. Exp. Ther.* **318(2)**, 657-665 (2006).
2. Otton, S.V., Ball, S.E., Cheung, S.W., *et al.* Venlafaxine oxidation *in vitro* is catalysed by CYP2D6. *Br. J. Clin. Pharmacol.* **41(2)**, 149-156 (1996).
3. Malick, M., Gilbert, K., Brouillette, J., *et al.* Cognitive deficits following a post-myocardial infarct in the rat are blocked by the serotonin-norepinephrine reuptake inhibitor desvenlafaxine. *Int. J. Mol. Sci.* **19(12)**, E3748 (2018).

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