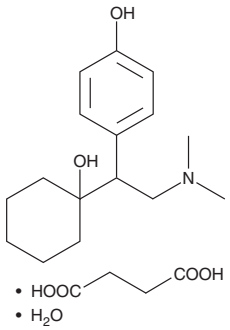
PRODUCT INFORMATION

Desvenlafaxine (succinate hydrate)

Item No. 29855

CAS Registry No.:	386750-22-7
Formal Name:	butanedioic acid, compd. with 4-[2-(dimethylamino)-1-(1-hydroxycyclohexyl) ethyl]phenol, hydrate (1:1:1)
Synonym:	O-Desmethyl Venlafaxine
MF:	$C_{16}H_{25}NO_2 \bullet C_4H_6O_4$ [H_2O]
FW:	399.5
Purity:	≥98%
UV/Vis.:	λ_{max}: 227 nm
Supplied as:	A 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

Desvenlafaxine (succinate hydrate) is supplied as a solid. A stock solution may be made by dissolving the desvenlafaxine (succinate hydrate) in the solvent of choice, which should be purged with an inert gas. Desvenlafaxine (succinate hydrate) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of desvenlafaxine (succinate hydrate) in these solvents is approximately 2, 3, and 5 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of desvenlafaxine (succinate hydrate) can be prepared by directly dissolving the solid in aqueous buffers. The solubility of desvenlafaxine (succinate hydrate) in PBS, pH 7.2, is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Desvenlafaxine 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 the time rats spend immobile 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. J. Pharmacol. Exp. Ther.* **318(2)**, 657-665 (2006).
2. Otton, S.V., Ball, S.E., Cheung, S.W., *et al. Br. J. Clin. Pharmacol.* **41(2)**, 149-156 (1996).
3. Malick, M., Gilbert, K., Brouillette, J., *et al. Int. J. Mol. Sci.* **19(12)**, E3748 (2018).

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