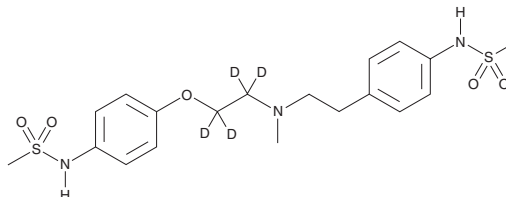


# PRODUCT INFORMATION



## Dofetilide-d<sub>4</sub> Item No. 26451

**CAS Registry No.:** 1189700-56-8  
**Formal Name:** N-[4-[2-[methyl[2-[4-[(methylsulfonyl)amino]phenoxy]ethyl-1,1,2,2-d<sub>4</sub>]amino]ethyl]phenyl]-methanesulfonamide  
**MF:** C<sub>19</sub>H<sub>23</sub>D<sub>4</sub>N<sub>3</sub>O<sub>5</sub>S<sub>2</sub>  
**FW:** 445.6  
**Chemical Purity:** ≥98% (Dofetilide)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>4</sub>); ≤1% d<sub>0</sub>  
**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

Dofetilide-d<sub>4</sub> is intended for use as an internal standard for the quantification of dofetilide (Item No. 15045) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

Dofetilide-d<sub>4</sub> is supplied as a solid. A stock solution may be made by dissolving the dofetilide-d<sub>4</sub> in the solvent of choice, which should be purged with an inert gas. Dofetilide-d<sub>4</sub> is slightly soluble in chloroform and methanol.

### Description

Dofetilide is a class III antiarrhythmic agent that prolongs cardiac action potential duration by selectively inhibiting the rapidly activating inward rectifying component of net delayed rectifier K<sup>+</sup> current (IC<sub>50</sub> = 31.5 nM in guinea pig cardiomyocytes).<sup>1</sup> However, at 1 μM, dofetilide has pro-arrhythmic activity, inducing early afterdepolarizations (prolonged repolarization) in cell models and Torsade de Pointes in a rabbit screen for proarrhythmic properties when administered at a dose of 10 mg/kg.<sup>2</sup> Formulations containing dofetilide have been used in the treatment of highly symptomatic atrial fibrillation and the conversion of flutter to normal sinus rhythm.<sup>3</sup>

### References

1. Jurkiewicz, N.K. and Sanguinetti, M.C. Rate-dependent prolongation of cardiac action potentials by a methanesulfonamide class III antiarrhythmic agent. *Circ. Res.* **72(1)**, 75-83 (1993).
2. Nalos, L., Varkevisser, R., Jonsson, M.K., *et al.* Comparison of the I<sub>Kr</sub> blockers moxifloxacin, dofetilide and E-4031 in five screening models of pro-arrhythmia reveals lack of specificity of isolated cardiomyocytes. *Br. J. Pharmacol.* **165(2)**, 467-478 (2012).
3. Dunnink, A., van Opstal, J.M., Oosterhoff, P., *et al.* Ventricular remodelling is a prerequisite for the induction of dofetilide-induced torsade de pointes arrhythmias in the anaesthetized, complete atrio-ventricular-block dog. *Europace* **14(3)**, 431-436 (2012).

#### 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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