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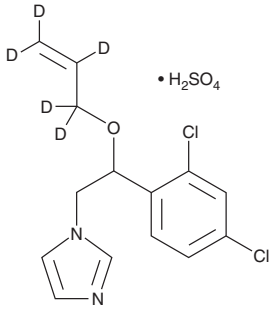
PRODUCT INFORMATION

Imazalil-d_5 (sulfate)

Item No. 39261

CAS Registry No.:	1398065-92-3
Formal Name:	1-(2-((allyl-d_5)oxy)-2-(2,4-dichlorophenyl) ethyl)-1H-imidazole, monosulfate
Synonyms:	Enilconazole-d_5, (±)-Imazalil-d_5
MF:	$C_{14}H_9Cl_2D_5N_2O \bullet H_2SO_4$
FW:	400.3
Chemical Purity:	≥98% (Imazalil)
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_5); ≤1% d_0
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

Imazalil-d_5 (sulfate) is intended for use as an internal standard for the quantification of imazalil (Item No. 25815) 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).

Imazalil-d_5 (sulfate) is supplied as a solid. A stock solution may be made by dissolving the imazalil-d_5 (sulfate) in the solvent of choice, which should be purged with an inert gas. Imazalil-d_5 (sulfate) is slightly soluble in chloroform and methanol.

Description

Imazalil is an imidazole fungicide that inhibits ergosterol biosynthesis.[1] Imazalil inhibits the growth of various fungi *in vitro* including *P. italicum*, *A. niger*, *U. maydis*, *B. alii*, and *C. cucumerinum* in a pH-dependent manner (MICs = 0.005-2 µg/ml at pH 7).[2] It inhibits *S. cerevisiae*, but not rat liver microsomal, cytochrome P450 enzymes (CYPs; IC_{50}s = 0.088 and 80 µM, respectively), as well as aromatase CYP19 from human placental microsomes (IC_{50} = 0.34 µM).[1,3] Imazalil activates the murine pregnane X receptor (PXR) in a concentration-dependent manner in a cell-based reporter assay.[4] It increases hepatic *CYP3A11* and *CYP2B10* mRNA levels in mice when administered at a dose of 100 mg/kg. Imazalil also increases Ki-67-positive nuclei in liver sections and hepatic *MCM2* mRNA levels, markers of cell proliferation, in mice when co-administered with the murine constitutive androstane receptor (mCAR) agonist TCPOBOP (Item No. 14140). Formulations containing imazalil have been used to control fungal infection in agriculture.

References

1. Vanden Bossche, H., Lauwers, W., Willemsens, G., *et al.* Molecular basis for the antimycotic and antibacterial activity of N-substituted imidazoles and triazoles: The inhibition of isoprenoid biosynthesis. *Pestic. Sci.* **15(2)**, 188-198 (1984).
2. Siegel, M.R., Kerkenaar, A., and Kaars Sijpesteijn, A. Antifungal activity of the systemic fungicide imazalil. *Neth. J. Pl. Path.* **83(Suppl. 1)**, 121-133 (1977).
3. Vinggaard, A.M., Hnida, C., Breinholt, V., *et al.* Screening of selected pesticides for inhibition of CYP19 aromatase activity *in vitro*. *Toxicol. In Vitro* **14(3)**, 227-234 (2000).
4. Yoshimaru, S., Shizu, R., Tsuruta, S., *et al.* Acceleration of murine hepatocyte proliferation by imazalil through the activation of nuclear receptor PXR. *J. Toxicol. Sci.* **43(7)**, 443-450 (2018).

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