PRODUCT INFORMATION



Ibudilast-d₇

Item No. 28876

CAS Registry No.:	2713301-45-0	
Formal Name:	2-(methyl-d ₂)-1-[2-(1-methylethyl)	
	pyrazolo[1,5-a]pyridin-3-yl]-1-propanone-	
	2,3,3,3-d₄	
Synonyms:	AV 411-d ₇ , KC-404-d ₇	
MF:	$C_{14}H_{11}D_7N_2O$	
FW:	237.4	、
Chemical Purity:	≥98% (Ibudilast))
Deuterium		
Incorporation:	≥99% deuterated forms (d ₁ -d ₇); ≤1% d ₀	/
Supplied as:	A solid	
Storage:	-20°C	
Stability:	≥4 years	
Information represent	s the product encodifications. Batch encodific analytical results are prov	di c

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Ibudilast-d₇ is intended for use as an internal standard for the quantification of ibudilast (Item No. 14832) 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).

Ibudilast-d₇ is supplied as a solid. A stock solution may be made by dissolving the ibudilast-d₇ in the solvent of choice, which should be purged with an inert gas. Ibudilast-d₇ is soluble in chloroform and methanol.

Description

Ibudilast is an inhibitor of phosphodiesterase 4 (PDE4; IC₅₀s = 54, 65, 239, and 166 nM for PDE4A-D, respectively).¹ It is selective for PDE4 over PDE1, PDE7A, PDE7B, and PDE9A (IC₅₀s = ≥10,000 nM for all) but does inhibit PDE3A, PDE3B, and PDE5A (IC₅₀s = 1,600, 2,700, and 3,510 nM, respectively). Ibudilast inhibits LPS-induced production of TNF- α and fMLP-induced production of leukotriene B₄ (LTB₄; Item No. 20110) in isolated human whole blood (IC₅₀s = 6.2 and 2.5 μ M, respectively). It inhibits bronchospasm by 34% in a guinea pig model of leukotriene-mediated allergic bronchospasm when administered intravenously at a dose of 5 mg/kg.² Ibudilast prevents increases in TNF- α , IL-1 β , and IL-6 expression in the striatum in a mouse model of MPTP-induced Parkinson's disease.³ It also increases striatal expression of glial cell-derived neurotrophic factor (GDNF) in MPTP-treated and -untreated mice when administered at doses of 40 and 50 mg/kg, respectively, twice per day.

References

- 1. Huang, Z., Liu, S., Zhang, L., et al. Preferential inhibition of human phosphodiesterase 4 by ibudilast. Life Sci. 78(23), 2663-2668 (2006).
- 2. Kreutner, W., Sherwood, J., and Rizzo, C. The effect of leukotriene antagonists, lipoxygenase inhibitors and selected standards on leukotriene-mediated allergic bronchospasm in guinea pigs. Agents Actions 28(3-4), 173-184 (1989).
- 3. Schwenkgrub, J., Zaremba, M., Joniec-Maciejak, I., et al. The phosphodiesterase inhibitor, ibudilast, attenuates neuroinflammation in the MPTP model of Parkinson's disease. PLoS One 12(7), e0182019 (2017).

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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