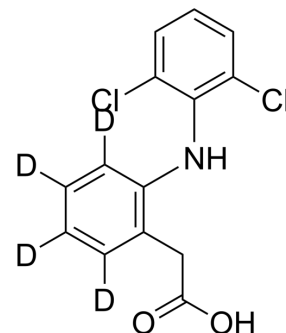


## Diclofenac-d<sub>4</sub>

<b>Cat. No.:</b>	HY-15036S		
<b>CAS No.:</b>	153466-65-0		
<b>Molecular Formula:</b>	C <sub>14</sub> H <sub>7</sub> D <sub>4</sub> Cl <sub>2</sub> NO <sub>2</sub>		
<b>Molecular Weight:</b>	300.17		
<b>Target:</b>	Apoptosis; COX; Isotope-Labeled Compounds		
<b>Pathway:</b>	Apoptosis; Immunology/Inflammation; Others		
<b>Storage:</b>	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



### BIOLOGICAL ACTIVITY

#### Description

Diclofenac-d<sub>4</sub> is the deuterium labeled Diclofenac. Diclofenac is a potent and nonselective anti-inflammatory agent, acts as a COX inhibitor, with IC50s of 4 and 1.3 nM for human COX-1 and COX-2 in CHO cells[1], and 5.1 and 0.84 μM for ovine COX-1 and COX-2, respectively[2]. Diclofenac induces apoptosis of neural stem cells (NSCs) via the activation of the caspase cascade[3].

#### In Vitro

Stable heavy isotopes of hydrogen, carbon, and other elements have been incorporated into drug molecules, largely as tracers for quantitation during the drug development process. Deuteration has gained attention because of its potential to affect the pharmacokinetic and metabolic profiles of drugs<sup>[1]</sup>.  
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

### REFERENCES

- [1]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. *Ann Pharmacother.* 2019;53(2):211-216.
- [2]. Riendeau D, et al. Biochemical and pharmacological profile of a tetrasubstituted furanone as a highly selective COX-2 inhibitor. *Br J Pharmacol.* 1997 May;121(1):105-17.
- [3]. Labib MB, et al. Design, synthesis of novel isoindoline hybrids as COX-2 inhibitors: Anti-inflammatory, analgesic activities and docking study. *Bioorg Chem.* 2018 Oct;80:70-80.
- [4]. Chiho Kudo, et al. Diclofenac Inhibits Proliferation and Differentiation of Neural Stem Cells. *Biochem Pharmacol.* 2003 Jul 15;66(2):289-95.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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