

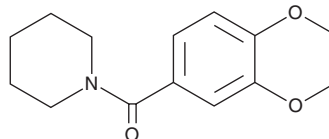
# PRODUCT INFORMATION



## CX-546

Item No. 45130

**CAS Registry No.:** 215923-54-9  
**Formal Name:** (2,3-dihydro-1,4-benzodioxin-6-yl)-1-piperidinyl-methanone  
**MF:** C<sub>14</sub>H<sub>17</sub>NO<sub>3</sub>  
**FW:** 247.3  
**Purity:** ≥98%  
**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

CX-546 is supplied as a solid. A stock solution may be made by dissolving the CX-546 in the solvent of choice, which should be purged with an inert gas. CX-546 is slightly soluble (0.1-1 mg/ml) in ethanol and DMSO.

### Description

CX-546 is an AMPA receptor positive allosteric modulator.<sup>1,2</sup> CX-546 (300 μM) attenuates desensitization and slows deactivation of glutamate-stimulated GluA1 and GluA2 subunit-containing AMPA receptors. It increases AMPA-stimulated glucose utilization in cortical astrocytes (EC<sub>50</sub> = 93.2 μM).<sup>3</sup> *In vivo*, CX-546 (10 mg/kg) reduces mechanical and cold allodynia and immobility time in the forced swim test in a rat model of neuropathic pain induced by spared nerve injury (SNI).<sup>4</sup> It reverses fentanyl- and phenobarbital-mediated respiratory depression in rats when administered at a dose of 16 mg/kg.<sup>5</sup>

### References

1. Nagarajan, N., Quast, C., Boxall, A.R., *et al.* Mechanism and impact of allosteric AMPA receptor modulation by the ampakine™ CX546. *Neuropharmacology* **41(6)**, 650-663 (2001).
2. Arai, A.C., Xia, Y.-F., Rogers, G., *et al.* Benzamide-type AMPA receptor modulators form two subfamilies with distinct modes of action. *J. Pharmacol. Exp. Ther.* **303(3)**, 1075-1085 (2002).
3. Pellerin, L. and Magistretti, P.J. Ampakine™ CX546 bolsters energetic response of astrocytes: A novel target for cognitive-enhancing drugs acting as α-amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid (AMPA) receptor modulators. *J. Neurochem.* **92(3)**, 668-677 (2005).
4. Le, A.M., Lee, M., Su, C., *et al.* AMPAkinases have novel analgesic properties in rat models of persistent neuropathic and inflammatory pain. *Anesthesiology* **121(5)**, 1080-1090 (2014).
5. Ren, J., Poon, B.Y., Tang, Y., *et al.* Ampakines alleviate respiratory depression in rats. *Am. J. Respir. Crit. Care Med.* **174(12)**, 1384-1391 (2006).

#### 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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