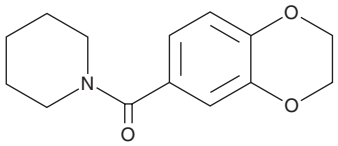
PRODUCT INFORMATION

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:	$C_{14}H_{17}NO_3$
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.[1,2] 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_{50} = 93.2 µM).[3] *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).[4] It reverses fentanyl- and phenobarbital-mediated respiratory depression in rats when administered at a dose of 16 mg/kg.[5]

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.* AMPAkines 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).

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