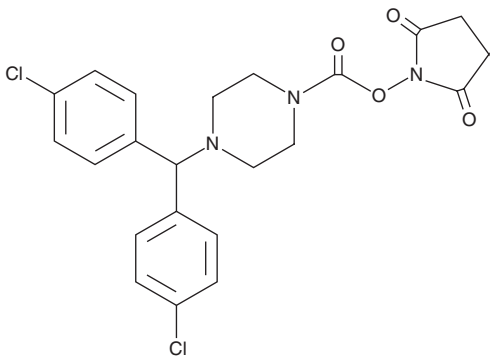
PRODUCT INFORMATION

MJN110

Item No. 17583

CAS Registry No.:	1438416-21-7
Formal Name:	4-[*bis*(4-chlorophenyl)methyl]-1-piperazinecarboxylic acid, 2,5-dioxo-1-pyrrolidinyl ester
Synonym:	2,5-Dioxopyrrolidin-1-yl 4-[*bis*(4-chlorophenyl)methyl]piperazine-1-carboxylate
MF:	$C_{22}H_{21}Cl_2N_3O_4$
FW:	462.3
Purity:	≥95%
UV/Vis.:	λ_{max}: 234 nm
Supplied as:	A crystalline 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

MJN110 is supplied as a crystalline solid. A stock solution may be made by dissolving the MJN110 in the solvent of choice, which should be purged with an inert gas. MJN110 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of MJN110 in these solvents is approximately 0.25, 30, and 25 mg/ml, respectively.

Description

Endocannabinoids such as 2-arachidonoyl glycerol (2-AG; Item No. 62160) and arachidonoyl ethanolamide (AEA; Item No. 90050) are biologically active lipids that are involved in a number of synaptic processes including activation of cannabinoid receptors. Monoacylglycerol lipase (MAGL) is a serine hydrolase responsible for the hydrolysis of 2-AG to arachidonic acid (Item No. 90010) and glycerol, thus terminating its biological function. MJN110 is an N-hydroxysuccinimidyl carbamate that inhibits MAGL (IC_{50} = 9.1 nM) and to a lesser extent ABHD6 with potent selectivity over FAAH (IC_{50} > 10 µM) and other brain serine hydrolases.[1] It can inhibit 2-AG hydrolysis (IC_{50} = 2.1 nM) with no effect on AEA hydrolysis up to 50 µM.[1] At 5 mg/kg, MJN110 has been shown to alleviate mechanical allodynia in a rat model of diabetic neuropathy.[1]

Reference

1. Niphakis, M.J., Cognetta, A.B., III, Chang, J.W., *et al.* Evalulation of NHS carbamates as a potent and selective class of endocannabinoid hydrolase inhibitors. *ACS Chem. Neurosci.* **4(9)**, 1322-1332 (2013).

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