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Print Date: Sep 16th 2016

Certificate of Analysis

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Product Name: **JZL 184** **Catalog No.: 3836** **Batch No.: 3**

CAS Number: 1101854-58-3

IUPAC Name: 4-[*Bis*(1,3-benzodioxol-5-yl)hydroxymethyl]-1-piperidinecarboxylic acid 4-nitrophenyl ester

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $C_{27}H_{24}N_2O_9$

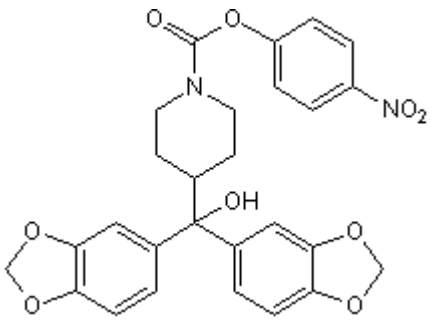
Batch Molecular Weight: 520.49

Physical Appearance: Off White solid

Solubility: DMSO to 100 mM

Storage: Store at -20°C

Batch Molecular Structure:



2. ANALYTICAL DATA

TLC: R_f = 0.52 (75% EtOAc/PE)

HPLC: Shows >99.8% purity

^{1}H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	62.3	4.65	5.38
Found	62.3	4.45	5.4

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Description:

Potent and selective MAGL inhibitor. Blocks hydrolysis of the endocannabinoid 2-arachidonyl glycerol (2-AG) in vivo in the mouse brain (IC_{50} = 8 nM). Potentiates depolarization-induced suppression of excitability in cerebellar Purkinje neurons. Exhibits >300-fold selectivity for MAGL over FAAH in vitro. Attenuates nociception in neuropathic and inflammatory pain models. Also reduces free fatty acid levels in primary tumors.

Physical and Chemical Properties:

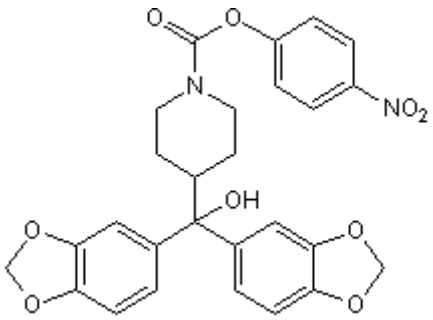
Batch Molecular Formula: $C_{27}H_{24}N_2O_9$

Batch Molecular Weight: 520.49

Physical Appearance: Off White solid

Minimum Purity: >98%

Batch Molecular Structure:



Storage: Store at -20°C

Solubility & Usage Info:

DMSO to 100 mM

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

Licensing Information:

Sold under license from The Scripps Research Institute.

References:

Kinsey *et al* (2013) Repeated low-dose administration of the monoacylglycerol lipase inhibitor JZL184 retains cannabinoid receptor type 1-mediated antinociceptive and gastroprotective effects. J.Pharmacol.Exp.Ther. ***345*** 492. PMID: 23412396.

Zhang *et al* (2012) Dysregulated lipid metabolism in cancer. World J.Biol.Chem. ***3*** 167. PMID: 22937213.

Long *et al* (2009) Selective blockade of 2-arachidonylglycerol hydrolysis produces cannabinoid behavioral effects. Nat.Chem.Biol. ***5*** 37. PMID: 19029917.

Pan *et al* (2009) Blockade of 2-arachidonylglycerol hydrolysis by selective monoacylglycerol lipase inhibitor 4-nitrophenyl 4-(dibenzo[*d*][1,3]dioxol-5-yl(hydroxy)methyl)piperidine-1-carboxylate (JZL184) enhances retrograde endocannabinoid signaling. J.Pharm.Exp.Ther. ***331*** 591. PMID: 19666749.

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