Print Date: Sep 17th 2020

Certificate of Analysis

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Product Name: **SYM 2081** **Catalog No.: 0903** **Batch No.: 21**

CAS Number: 31137-74-3

IUPAC Name: (2*S*,4*R*)-4-Methylglutamic acid

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $C_6H_{11}NO_4$

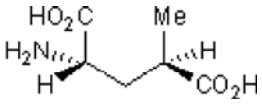
Batch Molecular Weight: 161.16

Physical Appearance: White solid

Solubility: water to 50 mM
phosphate buffered saline to 50 mM
1eq. NaOH to 100 mM

Storage: Store at RT

Batch Molecular Structure:



2. ANALYTICAL DATA

TLC: R_f = 0.48 (Pyridine:Acetic acid:Water:Butanol [3:8:11:22])

HPLC: Shows 97% purity

^{1}H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Optical Rotation: $[\alpha]_D$ = +24.9 (Concentration = 0.5, Solvent = 6N HCl)

Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	44.72	6.88	8.69
Found	44.73	6.63	8.64

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CAS Number: 31137-74-3

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Description:

Potent and highly selective kainate receptor agonist, with an IC_{50} for inhibition of [^{3}H]-kainate binding of 35 nM and almost 3,000- and 200-fold selectivity for kainate receptors over AMPA and NMDA receptors respectively. Also selectively inhibits the cloned excitatory amino acid transporter EAAT2 at higher concentrations.

Physical and Chemical Properties:

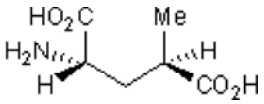
Batch Molecular Formula: $C_6H_{11}NO_4$

Batch Molecular Weight: 161.16

Physical Appearance: White solid

Minimum Purity: ≥97%

Batch Molecular Structure:



Storage: Store at RT

Solubility & Usage Info:

water to 50 mM
phosphate buffered saline to 50 mM
1eq. NaOH 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 with the permission of Annovis Inc.

References:

Savidge *et al* (1999) Characterisation of kainate receptor mediated whole-cell currents in rat cultured cerebellar granule cells. Neuropharmacology ***38*** 375. PMID: 10219975.

Donevan *et al* (1998) The methylglutamate, SYM 2081, is a potent and highly selective agonist at kainate receptors. J.Pharmacol.Exp.Ther. ***285*** 539. PMID: 9580595.

Jones *et al* (1997) Desensitization of kainate receptors by kainate, glutamate and diastereomers of 4-methylglutamate. Neuropharmacology ***36*** 853. PMID: 9225313.

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