bio-techne
TOCRIS

Print Date: Jun 28th 2023

Certificate of Analysis

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Product Name: **L-*trans*-2,4-PDC** **Catalog No.: 0298** **Batch No.: 16**

CAS Number: 64769-66-0

IUPAC Name: L-*trans*-Pyrrolidine-2,4-dicarboxylic acid

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $C_6H_9NO_4$

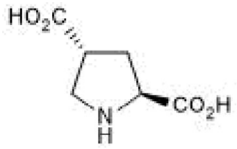
Batch Molecular Weight: 159.14

Physical Appearance: White solid

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

Storage: Store at RT

Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows >99.5% purity

^{1}H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Optical Rotation: $[\alpha]_D$ = -50.4 (Concentration = 1, Solvent = Water)

Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	45.28	5.7	8.8
Found	45.13	5.73	8.75

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CAS Number: 64769-66-0

IUPAC Name: L-*trans*-Pyrrolidine-2,4-dicarboxylic acid

Description:

L-trans-2,4-PDC is a potent, competitive, transportable EAAT1-4 inhibitor/non-transportable EAAT5 inhibitor. In [^{3}H]-d-Asp uptake assays in HEK293 cells expressing human EAAT1, EAAT2 and EAAT3, K_i values are 20, 20 and 109 µM, respectively. In a FLIPR Membrane Potential (FMP) assay, K_m values for L-trans-2,4-PDC are 7.7, 11 and 19 µM for human EAAT2, EAAT3 and EAAT1, respectively.

Physical and Chemical Properties:

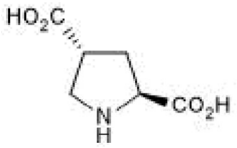
Batch Molecular Formula: $C_6H_9NO_4$

Batch Molecular Weight: 159.14

Physical Appearance: White solid

Minimum Purity: ≥97%

Batch Molecular Structure:



Storage: Store at RT

Solubility & Usage Info:

water to 100 mM
phosphate buffered saline to 100 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. *Unless contradicted by product-specific protocols or instructions, our standard recommendations apply:

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.

References:

Jensen and Bräuner-Osborne (2004) Pharmacological characterization of human excitatory amino acid transporters EAAT1, EAAT2 and EAAT3 in a fluorescence-based membrane potential assay. Biochem.Pharmacol. ***67*** 2115. PMID: 15135308.

Zuiderwijk *et al* (1996) Effects of uptake carrier blockers SK & F 89976-A and L-*trans*-PDC on *in vivo* release of amino acids in rat hippocampus. Eur.J.Pharmacol. ***307*** 275. PMID: 8836615.

Mitrovic and Johnston (1994) Regional differences in the inhibition of L-glutamate amd L-aspartate sodium-dependent high affinity uptake systems in rat CNS synaptosomes by L-*trans*-pyrrolidine-2,4-dicarboxylic *threo*-3-hydroxy-D-aspartate and D-aspartate. Neurochem.Int. ***24*** 583. PMID: 7981641.