

## Certificate of Analysis

**Product Name:** *cis*-ACBD

**Catalog No.:** 0271

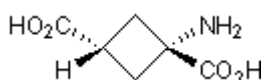
**Batch No.:** 10

**CAS Number:** 73550-55-7

**IUPAC Name:** *cis*-1-Aminocyclobutane-1,3-dicarboxylic acid

### 1. PHYSICAL AND CHEMICAL PROPERTIES

**Batch Molecular Formula:** C<sub>6</sub>H<sub>9</sub>NO<sub>4</sub>·H<sub>2</sub>O  
**Batch Molecular Weight:** 177.16  
**Physical Appearance:** White crystalline solid  
**Solubility:** 1eq. NaOH to 100 mM  
**Storage:** Store at RT  
**Batch Molecular Structure:**



### 2. ANALYTICAL DATA

**TLC:** R<sub>f</sub> = 0.4 (Butanol:Acetic acid:Water [3:1:1])  
**<sup>1</sup>H NMR:** Consistent with structure  
**Mass Spectrum:** Consistent with structure  
**Microanalysis:**

	Carbon	Hydrogen	Nitrogen
Theoretical	40.68	6.26	7.91
Found	40.64	6.26	7.9

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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**Description:**

Potent, competitive and selective inhibitor of glutamate uptake. Certain confusion exists over the naming of this compound because of apparent contradictions in the literature. This is the isomer which has the carboxylic acid and the amino groups on the same side of the cyclobutyl ring.

**Physical and Chemical Properties:**

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Physical Appearance: White crystalline solid

**Batch Molecular Structure:**



**Storage:** Store at RT

**Solubility & Usage Info:**

1eq. NaOH to 100 mM

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**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.

**References:**

**Allan et al** (1990) Synthesis and activity of a potent NMDA agonist, *trans*-1-aminocyclobutane-1,3-dicarboxylic acid, and related phosphonic and carboxylic acids. *J.Med.Chem.* **33** 2905. PMID: 2145435.

**Fletcher et al** (1991) Inhibition of L-glutamic acid uptake into rat cortical synaptosomes by the conformationally restricted analogue of glutamic acid, *cis*-1-aminocyclobutane-1,3-dicarboxylic acid. *Neurosci.Lett.* **121** 133. PMID: 1673544.

**Koch et al** (1999) Differentiation of substrate and nonsubstrate inhibitors of the high-affinity, sodium-dependent glutamate transporters. *Mol.Pharmacol.* **56** 1095. PMID: 10570036.

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