

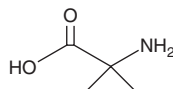
# PRODUCT INFORMATION



## 1-Aminocyclopropanecarboxylic Acid

Item No. 16132

CAS Registry No.: 22059-21-8  
Formal Name: 1-amino-cyclopropanecarboxylic acid  
Synonyms: ACC, ACPC, NSC 98430  
MF:  $C_4H_7NO_2$   
FW: 101.1  
Purity:  $\geq 98\%$   
Supplied as: A crystalline solid  
Storage:  $-20^\circ\text{C}$   
Stability:  $\geq 4$  years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

1-Aminocyclopropanecarboxylic acid (ACPC) is supplied as a crystalline solid. Aqueous solutions of ACPC can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of ACPC in PBS (pH 7.2) is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

1-Aminocyclopropanecarboxylic acid (ACPC) is an intermediate in the synthesis of ethylene, the plant hormone responsible for biological processes ranging from seed germination to organ senescence.<sup>1</sup> ACPC has been shown to modulate NMDA receptor activity by acting as a partial agonist at the glycine-binding site on NMDA receptors ( $EC_{50} = 0.7\text{-}0.9\ \mu\text{M}$ ) in the presence of low levels (1  $\mu\text{M}$ ) of glutamate and as a competitive antagonist at the glutamate-binding site on NMDA receptors ( $EC_{50} = 81.6\ \text{nM}$ ) with high levels (10  $\mu\text{M}$ ) of glutamate.<sup>2</sup> This compound has been reported to protect against neuron cell death in *in vivo* models of ischemia by enabling moderate levels of NMDA receptor activation and attenuating any excess NMDA receptor signaling that may lead to neurotoxicity.<sup>2</sup>

### References

1. Bleeker, A.B. and Kende, H. Ethylene: A gaseous signal molecule in plants. *Annu. Rev. Cell Dev. Biol.* **16**, 1-18 (2000).
2. Nahum-Levy, R., Fossom, L.H., Skolnick, P., *et al.* Putative partial agonist 1-aminocyclopropanecarboxylic acid acts concurrently as a glycine-site agonist and a glutamate-site antagonist at N-methyl-D-aspartate receptors. *Mol. Pharmacol.* **56**(6), 1207-1218 (1999).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

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