**Product Data Sheet**

**β-Chloro-L-alanine**

**Cat. No.:** HY-107373  
**CAS No.:** 2731-73-9  
**Molecular Formula:** C₃H₆ClNO₂  
**Molecular Weight:** 123.54  
**Target:** Bacterial  
**Pathway:** Anti-infection  
**Storage:**  
- Powder: -20°C 3 years, 4°C 2 years  
- In solvent: -80°C 6 months, -20°C 1 month

**SOLVENT & SOLUBILITY**

| In Vitro | H₂O : ≥ 30 mg/mL (242.84 mM)  
| --- | ---  
| a "≥" means soluble, but saturation unknown. |

<table>
<thead>
<tr>
<th>Preparing Stock Solutions</th>
<th>Solvent</th>
<th>Mass</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concentration</td>
<td>1 mg</td>
<td>5 mg</td>
</tr>
<tr>
<td>1 mM</td>
<td>8.0945 mL</td>
<td>40.4727 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td>1.6189 mL</td>
<td>8.0945 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td>0.8095 mL</td>
<td>4.0473 mL</td>
</tr>
</tbody>
</table>

Please refer to the solubility information to select the appropriate solvent.

**BIOLOGICAL ACTIVITY**

**Description**  
β-Chloro-L-alanine is a bacteriostatic amino acid analog which inhibits a number of enzymes, including threonine deaminase and alanine racemase.

**IC₅₀ & Target**  
Bacterial[¹]

**In Vitro**  
β-Chloro-L-alanine can inhibit threonine deaminase, the branched-chain amino acid transaminase (transaminase B), L-aspartate-pdecarboxylase, alanine racemase and probably O-acetylserine sulfhydrylase. β-Chloro-L-alanine reversibly inhibits the *Escherichia coli* K-12 alanine-valine transaminase, transaminase C. This inhibition, along with the inhibition of transaminase B, account for the isoleucine-plus-valine requirement of *Escherichia coli* in the presence of β-Chloro-L-alanine. *Salmonella typhimurium* LT2 will grow in the presence of BCA if isoleucine and valine are added to the medium and presume that the growth requirement is due to the inhibition of transaminase B[¹].
REFERENCES

[1]. β-Chloro-L-alanine can inhibit threonine deaminase, the branched-chain amino acid transaminase (transaminase B), L-aspartate-pdecarboxylase, alanine racemase and probably O-acetylserine sulfhydrylase. β-Chloro-L-alanine reversibly inhibits the Escherichia coli