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## Product Data Sheet

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Product Name: CAIII Human, His  
Cat. No.: GP21452  
Batch No.: 1

### Product Data

|                     |   |                    |                         |
|---------------------|---|--------------------|-------------------------|
| Purity              | >98%  | Source             | Escherichia Coli.       |
| Physical Appearance | solid   | Shipping Condition | Shipped with Ice Packs. |
| Synonyms            | Car3; CAIII; Carbonic anhydrase 3; EC 4.2.1.1; Carbonic anhydrase III; Carbonate dehydratase III; CA-III. |                    |                         |
| Formulation         | Supplied in 10mM Tris-HCl (pH 8), 250mM NaCl, 0.5mM DTT, 1.5mM Cysteine, and 50% Glycerol.                |                    |                         |

### Introduction

Carbonic anhydrase (carbonate dehydratase) is a family of metalloenzymes (enzymes that contain one or more metal atoms as a functional component of the enzyme) that catalyze the rapid (and reversible) conversion of carbon dioxide to bicarbonate and protons, a reaction that occurs rather slowly in the absence of a catalyst. Carbonic anhydrase greatly increases the rate of the reaction, with typical catalytic rates of the different forms of this enzyme ranging between  $10^4$  and  $10^6$  reactions per second. The active site of most carbonic anhydrases contains a zincion. CAIII is a cytoplasmic isoenzyme, but is released into the circulation following injury.

### Stability

Store at 4°C if entire vial will be used within 2-4 weeks. Store, frozen at -20°C for longer periods of time. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Avoid multiple freeze-thaw cycles.

### Background

Carbonic anhydrase III Human Recombinant produced in E.Coli, and having a molecular mass of 33.9 kDa. CAIII is expressed with an amino-terminal hexahistidine tag. The CA-III is purified by proprietary chromatographic techniques.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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