

# Recombinant Human Carbonic Anhydrase III, Muscle Specific

**Cat. No.** CA3-1239H    **Lot. No.** (See product label)

## SPECIFICATION

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Product Overview</b> | CA3 Human Recombinant produced in E.Coli is a single, non-glycosylated, polypeptide chain containing 260 amino acids (1-260 a.a.) and having a molecular mass of 29.5 kDa. The CA3 is purified by proprietary chromatographic techniques.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Species</b>          | Human                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Source</b>           | Human                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>ProteinLength</b>    | 1-260 a.a.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Description</b>      | Carbonic anhydrase III is part of a multigene family that encodes carbonic anhydrase isozymes which are a class of metalloenzymes that catalyze the reversible hydration of carbon dioxide and are differentially expressed in various cell types. Carbonic anhydrase III expression is strictly tissue specific and present at high levels in skeletal muscle and much lower levels in cardiac and smooth muscle. CA3 catalyses swift conversion of carbon dioxide to bicarbonate and protons ( $\text{CO}_2 + \text{H}_2\text{O} = \text{HCO}_3^- + \text{H}^+$ ). CA3 participates in a variety of biological processes, including respiration, calcification, acid-base balance, bone resorption and the formation of aqueous humor, cerebrospinal fluid, saliva and gastric juice. CA3 includes a zinc ion in its active site and maintains acid-base balance in blood and other tissues, and to help transport carbon dioxide of tissues. |
| <b>Form</b>             | The CA3 solution contains 20mM Tris-HCl pH-8, 1mM DTT and 10% glycerol.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Purity</b>           | Greater than 90% as determined by SDS-PAGE.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

 Tel: 1-631-559-9269    1-516-512-3133

 Email: [info@creative-biomart.com](mailto:info@creative-biomart.com)     Fax: 1-631-938-8127

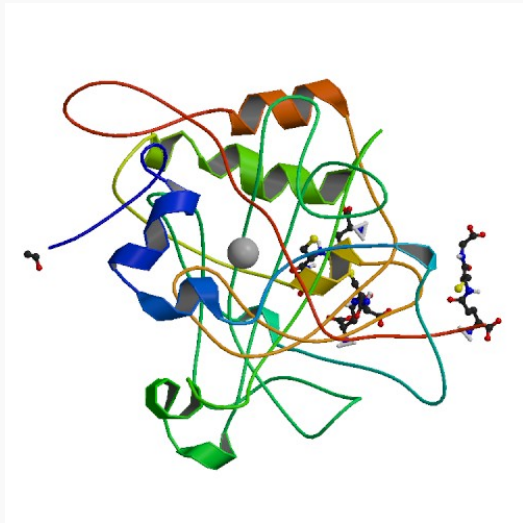
 45-1 Ramsey Road, Shirley, NY 11967, USA

|                            |                                                                                                                                                                                                                                                                                                              |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Physical Appearance</b> | Sterile Filtered clear colorless solution.                                                                                                                                                                                                                                                                   |
| <b>Amino acid sequence</b> | MAKEWGYASH NGPDHWHELF PNAKGENQSP IELHTKDIRH DPSLQPWSVS<br>YDGGSAKITL NNGKTCRVVF DDTYDRSMLR GGPLPGPYRL RQFHLHWGSS<br>DDHGSEHTVD GVKYAAELHL VHWNPKYNTF KEALKQRDGI AVIGIFLKIG<br>HENGEFQIFL DALDKIKTKG KEAPFTKFDP SCLFPACRDY WTYQGSFTTP<br>PCEECIVWLL LKEPMTVSSD QMAKLRSLLS SAENEPPVPL VSNWRPPQPI<br>NNRVVRSFK. |
| <b>Storage</b>             | CA3 Recombinant Human although stable at 4°C for 30 days, should be stored desiccated below -20°C for periods greater than 30 days. Please avoid freeze-thaw cycles.                                                                                                                                         |
| <b>GENE INFORMATION</b>    |                                                                                                                                                                                                                                                                                                              |
| <b>Gene Name</b>           | CA3 carbonic anhydrase III, muscle specific [ Homo sapiens ]                                                                                                                                                                                                                                                 |
| <b>Official Symbol</b>     | CA3                                                                                                                                                                                                                                                                                                          |
| <b>Synonyms</b>            | CA3; carbonic anhydrase III, muscle specific; Car3; CAIII; Carbonic anhydrase 3; CA-III; Carbonate dehydratase III; Carbonic anhydrase III; carbonic anhydrase III, muscle specific; EC 4.2.1.1                                                                                                              |
| <b>Gene ID</b>             | 761                                                                                                                                                                                                                                                                                                          |
| <b>mRNA Refseq</b>         | NM_005181                                                                                                                                                                                                                                                                                                    |
| <b>Protein Refseq</b>      | NP_005172                                                                                                                                                                                                                                                                                                    |
| <b>MIM</b>                 | 114750                                                                                                                                                                                                                                                                                                       |

 Tel: 1-631-559-9269 1-516-512-3133

 Email: [info@creative-biomart.com](mailto:info@creative-biomart.com)  Fax: 1-631-938-8127

 45-1 Ramsey Road, Shirley, NY 11967, USA

|                                     |                                                                                                         |
|-------------------------------------|---------------------------------------------------------------------------------------------------------|
| <b>UniProt ID</b>                   | P07451                                                                                                  |
| <b>Chromosome Location</b>          | 8q13-q22                                                                                                |
| <b>Pathway</b>                      | Nitrogen metabolism                                                                                     |
| <b>Function</b>                     | carbonate dehydratase activity; lyase activity; metal ion binding; nickel ion binding; zinc ion binding |
| <b>PDB rendering based on 1flj.</b> |                      |