

## Recombinant Human Myoglobin, Heme free, T7-tagged

Cat. No. MB-165H    Lot. No. (See product label)

### SPECIFICATION

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Product Overview</b>    | Recombinant Human Myo heme free produced in <i>E. Coli</i> is a non-glycosylated polypeptide chain. The protein has a molecular mass of 11.67kDa. The rHuMyo heme free contains N-terminal T7 tag and purified by proprietary chromatographic techniques.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Species</b>             | Human                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Source</b>              | E.coli                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Description</b>         | <p>Myoglobin is a single-chain globular protein of 153 amino acids, containing a heme (iron-containing porphyrin) prosthetic group in the center around which the remaining apoprotein folds. It has eight alpha helices and a hydrophobic core. It has a molecular weight of 16,700 daltons, and is the primary oxygen-carrying pigment of muscle tissues. Unlike the blood-borne hemoglobin, to which it is structurally related, this protein does not exhibit cooperative binding of oxygen, since positive cooperativity is a property of multimeric/oligomeric proteins only. Instead, the binding of oxygen by myoglobin is unaffected by the oxygen pressure in the surrounding tissue. Myoglobin is often cited as having an "instant binding tenacity" to oxygen given its hyperbolic oxygen dissociation curve. High concentrations of myoglobin in muscle cells allow organisms to hold their breaths longer. In 1958, John Kendrew and associates successfully determined the structure of myoglobin by high-resolution X-ray crystallography.</p> |
| <b>Physical Appearance</b> | Sterile Filtered solution.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

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|                              |                                                                                                                                                                                        |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Formulation</b>           | The sterile solution (3.32mg/ml) contains phosphate-buffered saline (pH 8.0) and 50Mm phosphate-borate.                                                                                |
| <b>Purity</b>                | Greater than 95.0% as determined by: (a) Analysis by RP-HPLC. (b) Anion-exchange FPLC. (c) Analysis by reducing and non-reducing SDS-PAGE Silver Stained.                              |
| <b>Dimers And Aggregates</b> | Less than 1% as determined by silver stained SDS-PAGE gel analysis.                                                                                                                    |
| <b>Endotoxin</b>             | Less than 0.1 ng/g (IEU/g) of rHuMyo.                                                                                                                                                  |
| <b>Stability</b>             | rMyo heme free although stable at 15°C for 2 weeks, should be stored at 4°C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please do not freeze. |

## GENE INFORMATION

|                       |                                                    |
|-----------------------|----------------------------------------------------|
| <b>Gene Name</b>      | MB myoglobin [ Homo sapiens ]                      |
| <b>Synonyms</b>       | MB; myoglobin; PVALB; MGC13548; OTTHUMP00000197922 |
| <b>Gene ID</b>        | 4151                                               |
| <b>mRNA Refseq</b>    | NM_005368                                          |
| <b>Protein Refseq</b> | NP_005359                                          |
| <b>MIM</b>            | 160000                                             |
| <b>UniProt ID</b>     | P02144                                             |

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|----------------------------|------------------------------------------------------------------------------|
| <b>Chromosome Location</b> | 22q13.1                                                                      |
| <b>Function</b>            | heme binding; metal ion binding; oxygen binding; oxygen transporter activity |

**Model of helical domains in myoglobin.**

