



Genorise® Recombinant Human Myoglobin

Catalog Number: GR119201

Background

Myoglobin is an iron- and oxygen-binding protein found in the muscle tissue of vertebrates in general and in almost all mammals. It is related to hemoglobin, which is the iron- and oxygen-binding protein in blood, specifically in the red blood cells. In humans, myoglobin is only found in the bloodstream after muscle injury. It is an abnormal finding, and can be diagnostically relevant when found in blood. Myoglobin is the primary oxygen-carrying pigment of muscle tissues.^[1] High concentrations of myoglobin in muscle cells allow organisms to hold their breath for a longer period of time. Diving mammals such as whales and seals have muscles with particularly high abundance of myoglobin. Myoglobin is found in Type I muscle, Type II A and Type II B, but most texts consider myoglobin not to be found in smooth muscle. Myoglobin is released from damaged muscle tissue (rhabdomyolysis), which has very high concentrations of myoglobin. The released myoglobin is filtered by the kidneys but is toxic to the renal tubular epithelium and so may cause acute renal failure.^[2] It is not the myoglobin itself that is toxic (it is a protoxin) but the ferriheme portion that is dissociated from myoglobin in acidic environments (e.g., acidic urine, lysosomes). Myoglobin is a sensitive marker for muscle injury, making it a potential marker for heart attack in patients with chest pain.^[3] However, elevated myoglobin has low specificity for acute myocardial infarction (AMI) and thus CK-MB, cTnT, ECG, and clinical signs should be taken into account to make the diagnosis.

References

1. Ordway GA, Garry DJ (2004). *J. Exp. Biol.* **207** (Pt 20): 3441–6.
2. Naka T, et al. (2005). *Crit Care* **9** (2): R90–5.
3. Weber M, et al. (2005). *Clin. Biochem.* **38** (11): 1027–30.



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Description

Size: 10 µg

Source: *E coli* derived

Component: Met1-Gly154

Accession # NP_005359.1

Predicted Molecular Mass: 17 kDa (monomer)

Specifications

SDS-PAGE: 18 kDa, reducing conditions

Purity: >97%, by SDS-PAGE under reducing conditions and visualized by silver stain.

Formulation: Lyophilized from a 0.2 µm filtered PBS with BSA as a carrier protein.

Preparation and Storage

Reconstitution: Reconstitute at 100 µg/mL in sterile PBS.

Shipping: The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage: Use a manual defrost freezer and avoid repeated freeze thaw cycles.

- 6 months from date of receipt, -20 to -70°C as supplied.
- 3 months, -20 to -70°C under sterile conditions after reconstitution.

DECLARATION

THIS REAGENT IS FOR IN VITRO LABORATORY TESTING AND RESEARCH USE ONLY. DO NOT USE IT FOR CLINICAL DIAGNOSTICS. DO NOT USE OR INJECT IT IN HUMANS AND ANIMALS.

**FOR LABORATORY RESEARCH USE ONLY
NOT FOR USE IN MICE AND ANIMALS**