Product Information Sheet

Product Name	Myoglobin (Heart)	P136-3 v1

Abbreviations	MB | MYO
Accession Number	P02144
Source	Human Cardiac Tissue
Applications	Control Manufacture, Life Science, Clinical Chemistry, Biosensors, ELISA Assay, Lateral Flow

Protein Function

Myoglobin is a small haeme-containing protein that imparts the red colour to meat and is the primary oxygen-carrying protein of muscle tissues. It binds oxygen tightly via the haeme iron (Fe2+) atom, accepting oxygen from the blood borne haemoglobin, which exhibits negative allosteric cooperativity and hence binds oxygen relatively poorly under conditions of low oxygen tension. The oxygen stored by myoglobin is eventually released into the mitochondria, where it acts as the terminal electron acceptor of oxidative respiration. It was the first protein for which a complete 3-dimensional structure was determined using X-ray diffraction. [1]

Tissue Occurrence & Abundance

Myoglobin is found in all vertebrate striated muscle such as skeletal and heart muscle but not in smooth muscle. Muscle that requires a lot of oxygen, such as the heart contains large amounts of myoglobin as do tissues such as whale skeletal muscle, which store oxygen during diving. Human skeletal muscles contain 0.5 to 1.0% w/w of myoglobin.

Function in Disease

Myoglobin is rapidly released into the blood after damage to muscles, especially after myocardial infarction (heart attack) making it a useful early indicator of heart damage, especially when used in conjunction with tests for creatine kinase-muscle form (CK-MM) and Troponin complex. Myoglobin concentrations peak more rapidly than the other two proteins but it is less specific than Troponin.

Structure

Molecular weight	17,053
Amino acids	153
Disulphide bonds	None
pI value(s)	7.2
Prosthetic group	Haeme (Fe2+)
Glycosylation	None
Oligomerisation	None
Isoforms	None, although there are a number of genetic variants consisting of amino acid substitutions.

References

1. JC Kendrew, G Bodo, HM Dintzis, RG Parrish, H Wyckoff, and DC Phillips (1958). A Three-Dimensional Model of the Myoglobin Molecule Obtained by X-Ray Analysis. Nature 181 (4610): 662–666.

WHY BBI?

- ✓ Our production facilities allow us to offer **large batch sizes** ranging from 100ug to g quantities.
- ✓ With a network of global labs and hospitals, we can access many diverse testing platforms, providing you with the exact analysis results you need.
- ✓ With over 25 years' experience sourcing human biologicals at our HTA approved site; you can be confident in a **secure supply**.

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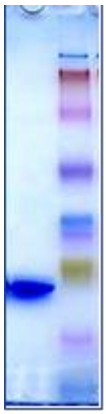
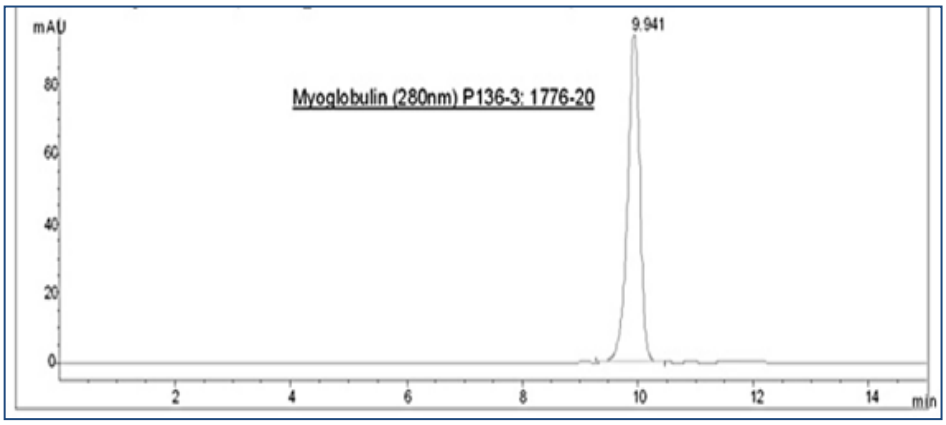
Purity	> 96% pure
Stability & Formulation	Supplied in a PBS Buffer containing 0.09% sodium azide preservative – Store at 2-8°C. Stable, although the Fe2+ can be oxidised to the ferric form (“metmyoglobin”), which is no longer able to bind oxygen
SDS PAGE & Size exclusion HPLC	 
Dispensations	P136-3 - 1mg / 10mg

Ordering Details – use the following code when ordering

Product	Code	Description
Myoglobin	P136-3	>96% pure | supplied in PBS buffer | sourced from Human Cardiac Tissue

Get in touch to order an evaluation sample, or purchase directly at www.bbisolutions.com