

Active Native Bovine Myosin Protein (Full Length)

Cat. No. Myh2-20B **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Myosin protein has been purified from bovine cardiac muscle. The full length myosin protein has been purified with its essential light chains (ELC) and regulatory light chains (RLC). Myosin has been determined to be biologically active in an F-actin activated ATPase assay. Bovine cardiac myosin protein is supplied as a white lyophilized powder.
Species	Bovine
Source	Cardiac Muscle
ProteinLength	Full Length
Description	Myosins are actin-based motor proteins that function in the generation of mechanical force in eukaryotic cells. Muscle myosins are heterohexamers composed of 2 myosin heavy chains and 2 pairs of nonidentical myosin light chains. This gene encodes a member of the class II or conventional myosin heavy chains, and functions in skeletal muscle contraction. This gene is found in a cluster of myosin heavy chain genes on chromosome 17. A mutation in this gene results in inclusion body myopathy-3. Multiple alternatively spliced variants, encoding the same protein, have been identified.
Form	White lyophilized powder
Bio-activity	The biological activity of bovine cardiac myosin can be determined from its rate of F-actin activated ATP hydrolysis. A standard biological assay for monitoring ATP

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	hydrolysis by myosin consists of an in vitro F-actin stimulated myosin ATPase assay. Stringent quality control ensures that in the presence of F-actin, bovine cardiac myosin will have a minimum ATP hydrolysis rate 10 fold greater than in the absence of F-actin and a minimum actin activated ATPase activity > 25 nmol/min/mg of myosin.
Purity	Protein purity is determined by scanning densitometry of Coomassie Blue stained protein on a 4-20 % gradient polyacrylamide gel. Myosin protein is 95 % pure.
Applications	Drug discovery target in cardiac research Measurement of F-actin activated myosin ATPase activity Identification/characterization of proteins or small molecules that affect myosin II ATPase activity Identification/characterization of proteins or small molecules that affect the myosin II - F-actin interaction Control myosin ATPase activity in drug discovery screening projects
Stability	The lyophilized protein is stable at 4 centigrade desiccated (<10 % humidity) for 1 year.
Storage	Briefly centrifuge to collect the product at the bottom of the tube. In order to maintain high biological activity of the protein, it is recommended that the protein solution be aliquoted into "experiment sized" amounts, snap frozen in liquid nitrogen and stored at -70 centigrade. The protein is stable for 6 months if stored at -70 centigrade. The protein should not be exposed to repeated freeze-thaw cycles. The lyophilized protein is stable at 4 centigrade desiccated (< 10 % humidity) for 1 year.
Storage Buffer	25 mM PIPES pH 7.0, 1.25 M KCl, 2.5 % (w/v) sucrose and 0.5 % (w/v) dextran.
Reconstitution	The protein should be reconstituted to 10 mg/mL by the addition of 100 µL of Milli-Q

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water.

GENE INFORMATION

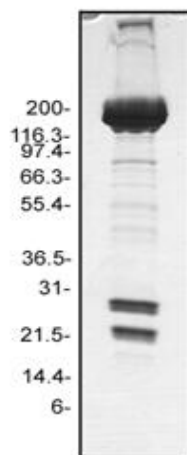
Gene Name	MYH2 myosin heavy chain 2 [Bos taurus (cattle)]
Official Symbol	MYH2
Synonyms	MYH2; myosin heavy chain 2; MyHC-2a; myosin-2; myosin, heavy chain 2, skeletal muscle, adult; myosin, heavy polypeptide 2, skeletal muscle, adult; type 2a myosin heavy chain
Gene ID	788772
mRNA Refseq	NM_001166227
Protein Refseq	NP_001159699
UniProt ID	Q9BE41

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Myosin protein purity determination



A 20 µg sample of MY03 was separated by electrophoresis in a 4-20 % SDS-PAGE system, and stained with Coomassie Blue. The myosin heavy chain is located at approximately 200 kDa, whereas the RLC is approximately 20 kDa and the ELC isoform is approximately 25 kDa). Protein quantitation was performed using the Precision Red Protein Assay Reagent.

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