ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

Life Technologies™ Your Molecular & Cell Technology Partner

Muscle Actin protein

Cat. ACTB15-N	Purified Bovine Muscle Actin Protein	**SIZE**: 100 ug
Cat. ACTB15-N-1	Purified Bovine Muscle Actin Protein	**SIZE**: 1 mg

Actin and myosin are the two major cytoskeletal proteins implicated in cellular movements, secretion, phagocytosis, cytokinesis, exocytosis and chromosome movement. At least 6 actin isoforms have been identified by protein sequence analyses. Four actin isoforms represents the differentiation markers of muscle tissues. Actin isoforms are >90% conserved, except the N-terminal 18aa (50-60% homology).

In absence of salts, actin exists as a globular monomeric protein (G-actin). In presence of ATP, a divalent cation (Ca 2+ or Mg 2+) and high salts (KCl, NaCl or MgCl2), the G-actin polymerizes to form a fibrous or filamentous actin (F-actin) which incorporates the cation and ATP. Dialysis of the F-actin solution against water reverses the polymerization.

Source of Protein

Prepared from the acetone powder of bovine skeletal muscle by the method of Spudich and Watt. A mol. wt of approximately 42-43kD based on sequence information of the rabbit muscle protein general similarity of actins across species and SDS electrophoresis.

Form & Storage

The bovine muscle acetone powder is extracted with buffer A (2mM Tris buffer, pH 8.0 containing .02mM ATP, 0.5mM, Beta-mercaptanol and 0.2mM CaCl2). The filtrate is clarified by centrifugation, then the action is polymerized by addition of 50mM KCl and 2mM MgCl2. The KCl concentration is then increase to 0.6M and the solution is stirred for 90 mins. The F-actin is then collected by centrifugation , resuspended in Buffer A and extensively dialyzed to convert to G-actin. Protein estimated by Biuret is approximately 90%.

The lyophilized powder can be reconstituted in original volume of water at 1-3mg/ml,). It can then be used or aliquoted for storage in small aliquots at -70oC or below

General References:

Carlier, M. F (JBC) 1991, Vol 266, 1-4; Merck Index, 12th Edition #137 (1996); Hinshaw, D. B et al, Arch. Biochem. Biophys. 288, 311-316 (1991); Small, J. V et al , J. Cell Science, 89, 21 (1988)

*This product is for in vitro research use only.

Related material available from ADI

Antibodies to Human Beta Actin (Polyclonal and Monoclonal)

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