

## Actin

**Description:** Ultra pure Actin consists in the alpha-skeletal muscle isoform and is purified from rabbit striated muscle. The purification method used (according to Spudich & Watts) results in a highly purified protein having a Molecular mass of 43,000 dalton.

Catalog #: PRPS-524

**Source:** Rabbit Muscle.

For research use only.

**Physical Appearance:** Sterile Filtered White lyophilized (freeze-dried) powder.

**Purity:** Greater than 98.0% as determined by: (a) Analysis by RP-HPLC. (b) Analysis by SDS-PAGE.

**Formulation:**

The protein was lyophilized from a 1mg/ml solution containing 10mM Tris/HCl buffer pH 8.0, 0.2mM CaCl<sub>2</sub>, 0.2mM ATP, 1mM DTT and 0.5% (w/v) SDS.

**Stability:**

Lyophilized Actin although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution Actin should be stored at 4°C between 2-7 days and for future use below -18°C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please prevent freeze-thaw cycles.

**Usage:**

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**Applications:**

Protein standard in 1D and 2D SDS gel electrophoresis Immunoassays Immunization.

**Solubility:**

It is recommended to reconstitute the lyophilized Actin in sterile 18M-cm H<sub>2</sub>O not less than 100µg/ml, which can then be further diluted to other aqueous solutions.

**Introduction:**

Actin is a muscle protein localized in the I band of the myofibrils; acting along with myosin, it is responsible for contraction and relaxation of muscle. Each actin protomer binds one molecule of ATP and has one high affinity site for either calcium or magnesium ions, as well as several low affinity sites. Actin exists as a monomer in low salt concentrations, but filaments form rapidly as salt concentration rises, with the consequent hydrolysis of ATP. It occurs in globular (G-actin) and fibrous (F-actin) forms. Actin is found in all eukaryotic cells (except for nematode sperm). Actin is one of the most highly-conserved proteins, differing by no more than 20% in species as diverse as algae and humans. Its other functions include: cell motility, cell division and cytokinesis, vesicle and organelle movement, cell signaling, and the establishment and maintenance of cell junctions and cell shape.

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