

BACKGROUND

Actin is a ubiquitous globular protein that is one of the most highly-conserved proteins known. It is found in two main states; G-actin is the globular monomeric form, whereas F-actin forms helical polymers. Both G- and F-actin are intrinsically flexible structures - a feature vital in actin's role as a dynamic filament network.

Actin has four major functions. Firstly, F-actin polymers form microfilaments - polar intracellular 'tracks' for kinesin motor proteins, allowing the transport of vesicles, organelles and other cargo. Actin is a component of the cytoskeleton and links to alpha-actinin, E-cadherin and beta-catenin at adherens junctions. This gives mechanical support to cells and attaches them to each other and the extracellular matrix. In muscle cells, actin-rich thin filaments associate with myosin-rich thick filaments to form actomyosin myofibrils. Using energy from the hydrolysis of ATP, myofibrils undergo cyclic shortening through actin-myosin head interactions, which represents the mechanics of muscle contraction. Finally, actin has a role in cell motility through polymerization and depolymerization of fibrils.¹

Beta actin, also known as cytoplasmic actin is a 42 kDa, highly conserved protein, ubiquitously expressed in all eukaryotic cells. It is a relatively stable cytoskeletal protein normally at a constant level in cells, regardless of experimental treatment or technical procedure.² For this reason, measurement of beta-Actin is generally used as an internal control for experimental error.

References:

1. Pollard, D.T. & Cooper, J.A.: Science 326:1208-1212, 2009
2. Mori, R. et al: Prostate 68:1555-60, 2008

TECHNICAL INFORMATION

Source:

Beta-actin Antibody is a mouse monoclonal antibody raised against a short peptide from human beta-Actin sequence.

Specificity and Sensitivity:

This antibody detects endogenous beta-actin proteins without cross-reactivity with other family members.

Storage Buffer: PBS and 30% glycerol

Storage:

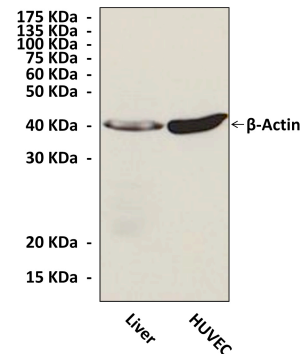
Store at -20°C for at least one year. Store at 4°C for frequent use. Avoid repeated freeze-thaw cycles.

APPLICATIONS

Application:	*Dilution:
WB	1:1000
IP	n/d
IHC	n/d
ICC	n/d
FACS	n/d

**Optimal dilutions must be determined by end user.*

QUALITY CONTROL DATA



Western Blot detection of beta actin proteins in Huvec cell and mouse liver tissue lysates using beta-actin Antibody.

