

**SM1349PS****Monoclonal Antibody to Actin (F-Actin) - Purified**

<b>Alternate names:</b>	Actin F type
<b>Quantity:</b>	50 µg
<b>Concentration:</b>	1.0 mg/ml
<b>Background:</b>	<p>Actins are highly conserved proteins that are involved in various types of cell motility and are ubiquitously expressed in all eukaryotic cells. G-Actin (globular actin) with bound ATP can polymerise to form F-Actin (Filamentous Actin). Actin monomers spiral around the axis of the filament similar to a double helix.</p> <p>F-Actin may also undergo a process called treadmilling, in which filament length remains constant and actin monomers add at one end and dissociated at the other.</p>
<b>Host / Isotype:</b>	Mouse / IgM
<b>Recommended Isotype Controls:</b>	SM13P
<b>Clone:</b>	NH3
<b>Immunogen:</b>	<p>Human monocytes and U937 cell line.</p> <p>Spleen cells from immunised BALB/c mice were fused with cells of the mouse NS1 myeloma cell line.</p>
<b>Format:</b>	<p><b>State:</b> Liquid purified IgM fraction prepared from tissue culture supernatant.</p> <p><b>Buffer System:</b> PBS, pH 7.4</p> <p><b>Preservatives:</b> 0.09% Sodium Azide</p>
<b>Applications:</b>	<p><b>Flow Cytometry</b> (1/10).</p> <p><b>Immunofluorescence.</b></p> <p><b>Immunohistochemistry on Frozen Sections.</b></p> <p>Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.</p>
<b>Specificity:</b>	<p>This antibody recognizes Filamentous Actin (F-Actin).</p> <p>The antibody binds to the N-terminal region of actin, but not to the extreme N-terminal 40 amino acids.</p> <p>In tissue sections the antibody stains the cytoplasm of macrophages strongly, and gives granular, localised nuclear staining of all cell types.</p> <p>Clone NH3 is reported to recognize Actin in the filamentous form with the epitope likely to be located between residues 120 and 226 of the molecule.</p> <p>Clone NH3 is also described to show reactivity with a 43 kDa polypeptide using cell lines U937 and HL-60 by SDS/PAGE and Immunoblotting.</p> <p><b>Species:</b> Human, Rabbit, Rat and Mouse.</p> <p>Other species not tested.</p>
<b>Storage:</b>	<p>Store undiluted at 2-8°C for one month or (in aliquots) at -20°C for longer.</p> <p>Avoid repeated freezing and thawing.</p> <p>Shelf life: one year from despatch.</p>

### General Readings:

1. Dransfield, I. et al. (1988) Initial characterization of an anti-actin monoclonal antibody (NH3). *Biochem. Soc. Trans.* 16: 163-164.
2. McCarthy AM, Spisak KO, Brozinick JT, Elmendorf JS. Loss of cortical actin filaments in insulin-resistant skeletal muscle cells impairs GLUT4 vesicle trafficking and glucose transport. *Am J Physiol Cell Physiol.* 2006 Nov;291(5):C860-8. Epub 2006 Jun 14. PubMed PMID: 16774991.
3. Bhonagiri P, Pattar GR, Habegger KM, McCarthy AM, Tackett L, Elmendorf JS. Evidence coupling increased hexosamine biosynthesis pathway activity to membrane cholesterol toxicity and cortical filamentous actin derangement contributing to cellular insulin resistance. *Endocrinology.* 2011 Sep;152(9):3373-84. doi: 10.1210/en.2011-1295. Epub 2011 Jun 28. PubMed PMID: 21712361.