

#8456 Store at -20C

Pan-Actin (D18C11) Rabbit mAb


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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, IHC-P, IF-IC	H M R Mk	Endogenous	45	Rabbit IgG	#P60709, #P68133, #P63261, #P68032, #P62736, #P63267	60, 58, 71, 70, 59, 72

Product Usage Information	Application	Dilution
	Western Blotting	1:1000
	Immunohistochemistry (Paraffin)	1:200
	Immunofluorescence (Immunocytochemistry)	1:50
Storage	Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.	
Specificity / Sensitivity	Pan-Actin (D18C11) Rabbit mAb recognizes endogenous levels of total actin protein (all isoforms).	
Source / Purification	Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of human β-actin protein.	
Background	<p>Actin, a ubiquitous eukaryotic protein, is the major component of the cytoskeleton. At least six isoforms are known in mammals. Nonmuscle β- and γ-actin, also known as cytoplasmic actin, are ubiquitously expressed, controlling cell structure and motility (1). While all actin isoforms are highly homologous, cytoplasmic β- and γ-actin protein sequences differ by only four biochemically similar amino acids (2). For this reason, antibodies raised to β-actin may cross-react with γ-actin, and vice versa. α-cardiac and α-skeletal actin are expressed in striated cardiac and skeletal muscles, respectively; two smooth muscle actins, α- and γ-actin, are found primarily in vascular smooth muscle and enteric smooth muscle, respectively. These actin isoforms regulate the contractile potential of muscle cells (1). Actin exists mainly as a fibrous polymer, F-actin. In response to cytoskeletal reorganizing signals during processes such as cytokinesis, endocytosis, or stress, cofilin promotes fragmentation and depolymerization of F-actin, resulting in an increase in the monomeric globular form, G-actin (3). The ARP2/3 complex stabilizes F-actin fragments and promotes formation of new actin filaments (3). Research studies have shown that actin is hyperphosphorylated in primary breast tumors (4). Cleavage of actin under apoptotic conditions has been observed <i>in vitro</i> and in cardiac and skeletal muscle, as shown in research studies (5-7). Actin cleavage by caspase-3 may accelerate ubiquitin/proteasome-dependent muscle proteolysis (7).</p>	
Background References	<ol style="list-style-type: none"> Herman, I.M. (1993) <i>Curr. Opin. Cell Biol.</i> 5, 48-55. Perrin, B.J. and Ervasti, J.M. (2010) <i>Cytoskeleton (Hoboken)</i> 67, 630-4. Condeelis, J. (2001) <i>Trends Cell Biol</i> 11, 288-93. Lim, Y.P. et al. (2004) <i>Clin Cancer Res</i> 10, 3980-7. Kayalar, C. et al. (1996) <i>Proc Natl Acad Sci U S A</i> 93, 2234-8. Communal, C. et al. (2002) <i>Proc Natl Acad Sci U S A</i> 99, 6252-6. Du, J. et al. (2004) <i>J Clin Invest</i> 113, 115-23. 	

Species Reactivity	Species reactivity is determined by testing in at least one approved application (e.g., western blot).
Western Blot Buffer	IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.
Applications Key	WB: Western Blotting IHC-P: Immunohistochemistry (Paraffin) IF-IC: Immunofluorescence (Immunocytochemistry)

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster
X: Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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