

β -Actin

Mouse Monoclonal IgG2b

IP-MS Validated

Cat. # AM0081

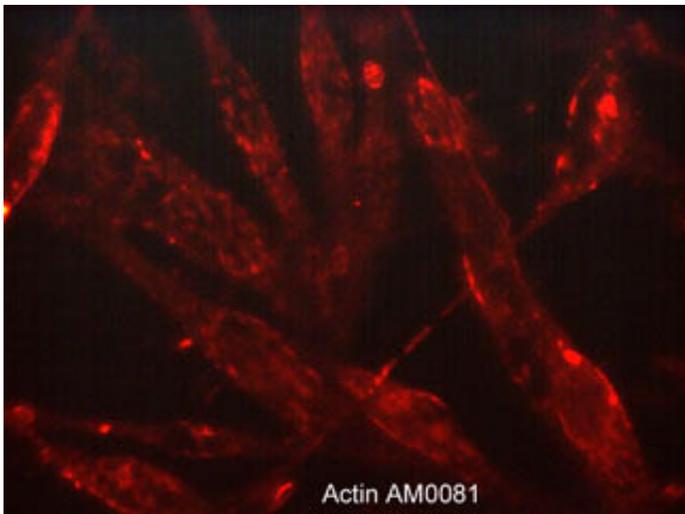
Size 100 μ l

Background

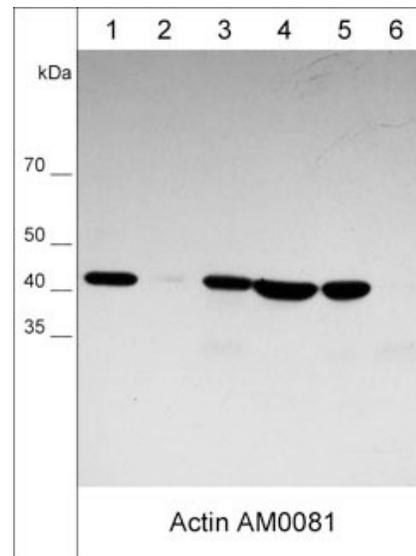
Actin is a major cytoskeletal protein involved in diverse cellular functions including cell motility, adhesion, and morphology. Six different actin isoforms have been identified in vertebrates. There are four α isoforms: skeletal, cardiac, and two smooth muscle (enteric and aortic) actins, along with two cytoplasmic actins (β and γ). Actin exists in two principal forms, globular, monomeric (G) actin, and filamentous polymeric (F) actin. The assembly and disassembly of actin filaments, and also their organization into functional networks, is regulated by a variety of actin-binding proteins (ABPs). Phosphorylation may also be important for regulating actin assembly and interaction with ABPs. In *Dictyostelium*, phosphorylation of Tyr-53 occurs in response to cell stress and this phosphorylation may alter actin polymerization. In B cells, SHP-1 tyrosine dephosphorylation of actin leads to actin filament depolymerization following BCR stimulation.

Background References

- Jungbluth, A. et al. (1995) FEBS Let. 375:87.
Baba, T. et al. (2003) J. Immunol. 170: 3762.
Winder, S.J. et al. (2005) J. Cell Sci. 118:651.
Liu, X. et al. (2006) Proc Nat Acad Sci U S A. 103(37):13694.



Immunocytochemical labeling of β -Actin in paraformaldehyde fixed human MeWo cells. The cells were labeled with mouse monoclonal anti- β -Actin (clone M008). The antibody was detected using goat anti-mouse DyLight[®] 594.



Western blot analysis of human HUVEC-CS (lane 1), rabbit spleen fibroblast (lane 2), human Jurkat (lane 3), human LNCaP (lane 4), human HeLa (lane 5), and mouse F9 (lane 6) cell lysates. The blot was probed with mouse monoclonal anti- β -Actin (AM0081) at 1:1000 (lanes 1-6).

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Immunogen

Clone M008 was generated from a proprietary antigen related to human β -actin in MDA-MB-231 breast cancer cell line.

Buffer and Storage

Mouse monoclonal, protein G purified antibody is supplied in 100 μ l phosphate-buffered saline, 50% glycerol, 1 mg/ml BSA, and 0.05% sodium azide. Store at -20°C. Stable for 1 year.

Applications

| | |
|-------|--------|
| WB | 1:1000 |
| ICC | 1:50 |
| IP-MS | 1:100 |
| ELISA | 1:1000 |

Species Reactivity

Hu

End user should determine optimal dilution for their particular applications and experiments.

Western blot membranes were incubated with diluted antibody in 5% non-fat milk, Tris buffer, 0.04% Tween20 for 1 hour at room temperature.

Abbreviations: E = ELISA, ICC = immunocytochemistry, IHC = immunohistochemistry, IP = immunoprecipitation, MS = mass spectrometry, WB = western blot
Hu = Human, Ms = Mouse, Rt = Rat, Ck = Chicken, F = Frog, B = Bovine

Specificity

Clone M008 detects a 42 kDa* protein corresponding to the molecular mass of β -actin on SDS-PAGE immunoblots of human cancer cell lines, as well as human recombinant β -actin. This actin antibody preferentially detects human β -actin with only weak reactivity toward actins in rat, mouse, or rabbit. The antibody works in multiple applications including western blot, immunocytochemical labeling, ELISA, and immunoprecipitation. In addition, mass spectrometry analysis of immunoprecipitates using AM0081 in human A431 cell lysate confirmed that this antibody detects β -actin.

*All molecular weights (MW) are confirmed by comparison to MW standards and to western blot mobilities of known proteins with similar MW.

"Native" western blot utilizes non-reducing sample buffer (no mercaptoethanol or SDS), normal SDS-PAGE gel electrophoresis, and no methanol in transfer buffers.

Related Products

AK6060 Actin & Tubulin Antibody Sampler Kit

AK7600 Actin Filament Regulation Immunocytochemistry Kit

AK7710 Actin Phospho-Regulation Immunocytochemistry Kit

AM2021 Actin (C-terminal region) Mouse Monoclonal

AP1671 Actin (Tyr-53), phospho-specific Rabbit Polyclonal

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