

DESCRIPTION

Species Reactivity	Human/Mouse/Rat
Specificity	Detects human, mouse, and rat AMPK α 1. No cross-reactivity with recombinant human AMPK α 2 is observed.
Source	Monoclonal Mouse IgG _{2B} Clone # 362532
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	<i>E. coli</i> -derived recombinant human AMPK α 1 Lys349-Gln559 Accession # Q13131
Formulation	Lyophilized from a 0.2 μ m filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 μ m filtered solution in PBS.

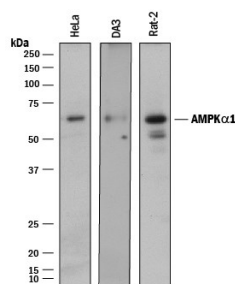
APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. [General Protocols](#) are available in the Technical Information section on our website.

	Recommended Concentration	Sample
Western Blot	1 μ g/mL	See Below
Immunocytochemistry	5-25 μ g/mL	See Below
Simple Western	20 μ g/mL	See Below

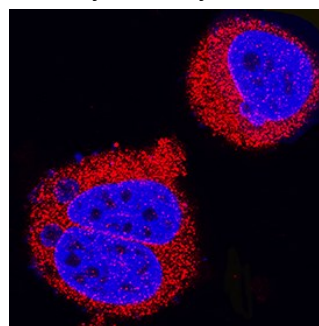
DATA

Western Blot



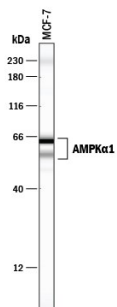
Detection of Human, Mouse, and Rat AMPK α 1 by Western Blot. Western blot shows lysates of HeLa human cervical epithelial carcinoma cell line, DA3 mouse myeloma cell line, and Rat-2 rat embryonic fibroblast cell line. PVDF membrane was probed with 1 μ g/mL of Mouse Anti-Human/Mouse/Rat AMPK α 1 Monoclonal Antibody (Catalog # MAB3197) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF017). A specific band was detected for AMPK α 1 at approximately 70 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Immunocytochemistry



AMPK α 1 in MCF-7 Human Cell Line. AMPK α 1 was detected in immersion fixed MCF-7 human breast cancer cell line using Mouse Anti-Human/Mouse/Rat AMPK α 1 Monoclonal Antibody (Catalog # MAB3197) at 8 μ g/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # NL007) and counterstained with DAPI (blue). Specific staining was localized to nuclei and cytoplasm. View our protocol for [Fluorescent ICC Staining of Cells on Coverslips](#).

Simple Western



Detection of Human AMPK α 1 by Simple Western™. Simple Western lane view shows lysates of MCF-7 human breast cancer cell line, loaded at 0.2 mg/mL. Specific bands were detected for AMPK α 1 at approximately 57 & 64 kDa (as indicated) using 20 μ g/mL of Mouse Anti-Human/Mouse/Rat AMPK α 1 Monoclonal Antibody (Catalog # MAB3197). This experiment was conducted under reducing conditions and using the 12-230 kDa separation system.

Non-specific interaction with the 230 kDa Simple Western standard may be seen with this antibody.



PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> 12 months from date of receipt, -20 to -70 °C as supplied. 1 month, 2 to 8 °C under sterile conditions after reconstitution. 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

AMP-activated protein kinase (AMPK) is a heterotrimeric complex consisting of a catalytic α subunit and regulatory β and γ subunits. Each subunit exists as alternate isoforms (α 1, α 2, β 1, β 2, γ 1, γ 2, γ 3), with all 12 combinations able to form complexes. The catalytic α subunit of AMPK is activated allosterically by AMP, and by phosphorylation via the AMPK kinases LKB1 and CaMKK β . AMPK's role in metabolic regulation has implicated this serine/threonine kinase as a therapeutic target in heart disease, obesity, and diabetes.