Human/Mouse/Rat ERK2 Antibody

Antigen Affinity-purified Polyclonal Goat IgG

Catalog Number: AF12301

DESCRIPTION

Species Reactivity	Human/Mouse/Rat
Specificity	Detects human, mouse, and rat ERK2. Also recognizes ERK1 in some cell types at much lower affinity.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	*E. coli*-derived recombinant human ERK2 Met1-Ser360 Accession # P28482
Formulation	Lyophilized from a 0.2 μm 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 μm filtered solution in PBS.

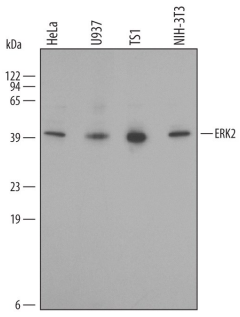
APPLICATIONS

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 µg/mL	See Below
Immunohistochemistry	3-15 µg/mL	See Below
Knockout Validated	ERK2 is specifically detected in HeLa human cervical epithelial carcinoma parental cell line but is not detectable in ERK2 knockout HeLa cell line.	

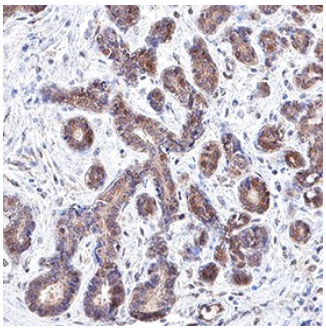
DATA

Western Blot



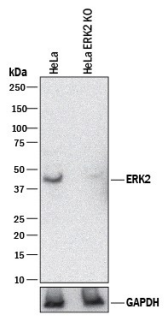
Detection of Human and Mouse ERK2 by Western Blot. Western blot shows lysates of HeLa human cervical epithelial carcinoma cell line, U937 human histiocytic lymphoma cell line, TS1 mouse helper T cell line, and NIH-3T3 mouse embryonic fibroblast cell line. PVDF membrane was probed with 1 µg/mL of Goat Anti-Human/Mouse/Rat ERK2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF12301) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF109). A specific band was detected for ERK2 at approximately 42 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Immunohistochemistry



ERK2 in Human Breast. ERK2 was detected in immersion fixed paraffin-embedded sections of human breast using Goat Anti-Human/Mouse/Rat ERK2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF12301) at 3 µg/mL for 1 hour at room temperature followed by incubation with the Anti-Goat IgG VisUCyte™ HRP Polymer Antibody (Catalog # VC004). Tissue was stained using DAB (brown) and counterstained with hematoxylin (blue). Specific staining was localized to cytoplasm in epithelial cells. View our protocol for IHC Staining with VisUCyte HRP Polymer Detection Reagents.

Knockout Validated



Western Blot Shows Human ERK2 Specificity by Using Knockout Cell Line. Western blot shows lysates of HeLa human cervical epithelial carcinoma parental cell line and ERK2 knockout HeLa cell line (KO). PVDF membrane was probed with 1 µg/mL of Goat Anti-Human/Mouse/Rat ERK2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF12301) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF017). A specific band was detected for ERK2 at approximately 42 kDa (as indicated) in the parental HeLa cell line, but is not detectable in knockout HeLa cell line. GAPDH (Catalog # AF5718) is shown as a loading control. This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 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.** ● 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.

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BACKGROUND

ERK1 and ERK2 (also known as MAPK3 and MAPK1) are 44 and 42 kDa Ser/Thr kinases, respectively. They are part of the Ras-Raf-ERK signal transduction cascade often found downstream of growth factor receptor activation. ERK1 and ERK2 were initially isolated and cloned as kinases activated in response to insulin and NGF. They are expressed in most, if not all, mammalian tissues. Dual threonine and tyrosine phosphorylation activate both ERKs, at Thr202/Tyr204 for human ERK1 and Thr185/Tyr187 for human ERK2.

ERK5, also known as Big Mitogen-activated Protein Kinase 1 (BMK1) and MAPK7, is activated by several mechanisms, including receptor tyrosine kinases, G protein-coupled receptors, and osmotic stress. Like ERK1 and ERK2, ERK5 contains the conserved Thr-Glu-Tyr activation motif in its activation loop. Unlike these ERKs, however, ERK5 contains a unique C-terminal domain that regulates its activation and nuclear translocation.

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