Anti-ERK2 Antibody [5-D2]

M1407-3

Product Type:	Mouse monoclonal IgG1, primary antibodies
Species reactivity:	Human, Mouse, Rat
Applications:	WB, IF-Cell, IHC-P, FC
Molecular Wt:	Predicted band size: 41 kDa
Clone number:	5-D2

Description: Serine/threonine kinase which acts as an essential component of the MAP kinase signal transduction pathway. MAPK1/ERK2 and MAPK3/ERK1 are the 2 MAPKs which play an important role in the MAPK/ERK cascade. They participate also in a signaling cascade initiated by activated KIT and KITLG/SCF. Depending on the cellular context, the MAPK/ERK cascade mediates diverse biological functions such as cell growth, adhesion, survival and differentiation through the regulation of transcription, translation, cytoskeletal rearrangements. The MAPK/ERK cascade plays also a role in initiation and regulation of meiosis, mitosis, and postmitotic functions in differentiated cells by phosphorylating a number of transcription factors. Moreover, the MAPK/ERK cascade is also involved in the regulation of the endosomal dynamics, including lysosome processing and endosome cycling through the perinuclear recycling compartment (PNRC); as well as in the fragmentation of the Golgi apparatus during mitosis.

Immunogen: Recombinant protein within human ERK2 aa aa 200-359.

Positive control: Human brain tissue lysate, mouse brain tissue lysate, rat brain tissue lysate, A549, HepG2, NIH-3T3, human colon tissue, human prostate cancer tissue, Hela.

Subcellular location: Cytoplasm, cytoskeleton, spindle, Nucleus, microtubule organizing center, centrosome, Membrane, caveola, Cell junction, focal adhesion.

Database links: SwissProt: P28482 Human | P63085 Mouse | P63086 Rat

Recommended Dilutions:

WB	1:1,000-1:2,000
IF-Cell	1:50-1:200
IHC-P	1:50-1:200
FC	1:50-1:100

Storage Buffer: 1*PBS (pH7.4), 0.2% BSA, 40% Glycerol. Preservative: 0.05% SodiumAzide.

Storage Instruction: Store at +4℃ after thawing. Aliquot store at -20℃. Avoid repeated freeze / thaw cycles.

Purity: Protein A affinity purified.

Images

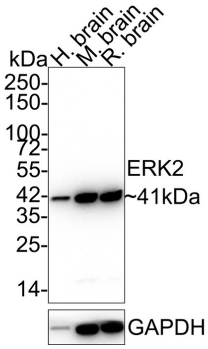

Fig1: Western blot analysis of ERK2 on different lysates with Mouse anti-ERK2 antibody (M1407-3) at 1/1,000 dilution.

Lane 1: Human brain tissue lysate
Lane 2: Mouse brain tissue lysate
Lane 3: Rat brain tissue lysate

Lysates/proteins at 40 µg/Lane.

Predicted band size: 41 kDa
Observed band size: 41 kDa

Exposure time: 1 minute 2 seconds;

4-20% SDS-PAGE gel.

Proteins were transferred to a PVDF membrane and blocked with 5% NFDM/TBST for 1 hour at room temperature. The primary antibody (M1407-3) at 1/1,000 dilution was used in 5% NFDM/TBST at 4℃ overnight. Alpaca Anti-Mouse IgG - HRP for IP Nano-Secondary Antibody (NBI02H) at 1/5,000 dilution was used for 1 hour at room temperature.

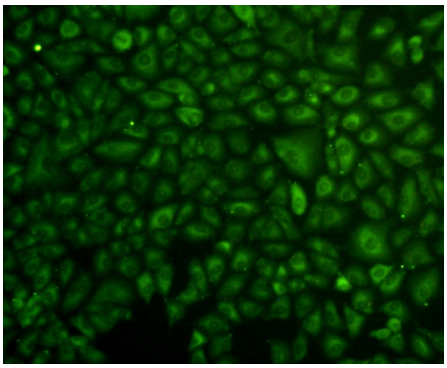

Fig2: ICC staining ERK2 in A549 cells (green). Formalin fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 10 minutes at room temperature and blocked with 1% Blocker BSA for 15 minutes at room temperature. Cells were probed with ERK2 monoclonal antibody at a dilution of 1:100 for 1 hour at room temperature, washed with PBS. Alexa Fluorc™ 488 Goat anti-Mouse IgG was used as the secondary antibody at 1/100 dilution.

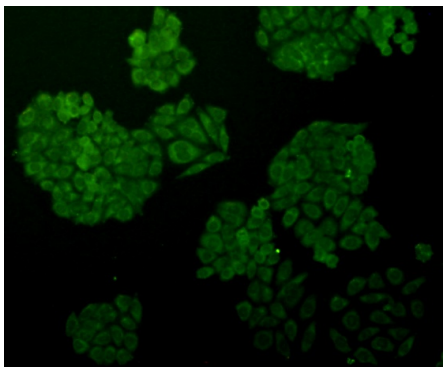

Fig3: ICC staining ERK2 in HepG2 cells (green). Formalin fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 10 minutes at room temperature and blocked with 1% Blocker BSA for 15 minutes at room temperature. Cells were probed with ERK2 monoclonal antibody at a dilution of 1:100 for 1 hour at room temperature, washed with PBS. Alexa Fluorc™ 488 Goat anti-Mouse IgG was used as the secondary antibody at 1/100 dilution.

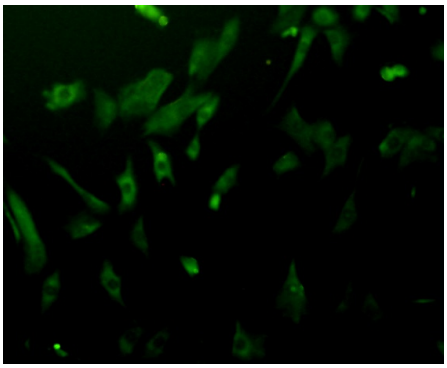

Fig4: ICC staining ERK2 in NIH-3T3 cells (green). Formalin fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 10 minutes at room temperature and blocked with 1% Blocker BSA for 15 minutes at room temperature. Cells were probed with ERK2 monoclonal antibody at a dilution of 1:100 for 1 hour at room temperature, washed with PBS. Alexa Fluorc™ 488 Goat anti-Mouse IgG was used as the secondary antibody at 1/100 dilution.

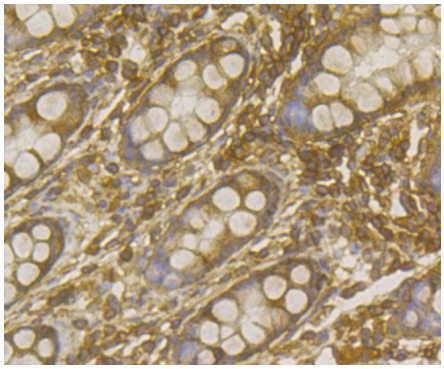

Fig5: Immunohistochemical analysis of paraffin-embedded human colon tissue using anti-ERK2 antibody. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0) for 20 minutes. The tissues were blocked in 5% BSA for 30 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the antibody (M1407-3) at 1/100 dilution, for 30 minutes at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chrogen. Counter stained with hematoxylin and mounted with DPX.

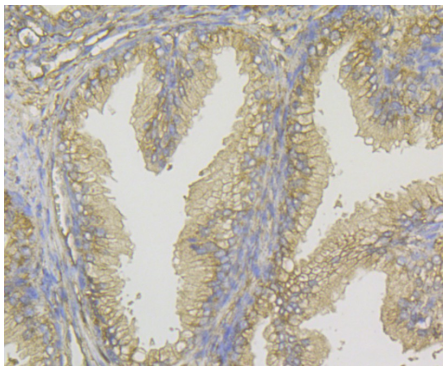

Fig6: Immunohistochemical analysis of paraffin-embedded human prostate cancer tissue using anti-ERK2 antibody. The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 8.0-8.4) for 20 minutes.The tissues were blocked in 5% BSA for 30 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the antibody (M1407-3) at 1/100 dilution, for 30 minutes at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chrogen. Counter stained with hematoxylin and mounted with DPX.

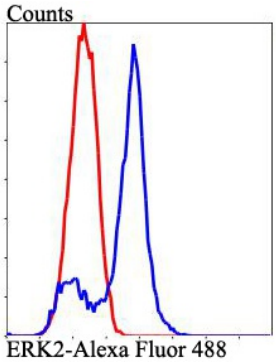

Fig7: Flow cytometric analysis of ERK2 was done on Hela cells. The cells were fixed, permeabilized and stained with ERK2 antibody at 1/100 dilution (blue) compared with an unlabelled control (cells without incubation with primary antibody; red). After incubation of the primary antibody on room temperature for an hour, the cells was stained with a Alexa Fluor™ 488-conjugated goat anti-mouse IgG Secondary antibody at 1/500 dilution.

Background References

1. Wortzel I et al. The ERK cascade: distinct functions within various subcellular organelles. Genes Cancer 2:195-209 (2011).
2. Ohori M et al. Role of a cysteine residue in the active site of ERK and the MAPKK family. Biochem Biophys Res Commun 353:633-637 (2007).
3. Ohori M et al. Identification of a selective ERK inhibitor and structural determination of the inhibitor-ERK2 complex. Biochem Biophys Res Commun 336:357-363 (2005).