Anti-ERK2 Antibody [C3B12]

EM1901-55

Product Type:	Mouse monoclonal IgG1, primary antibodies
Species reactivity:	Human, Mouse, Rat
Applications:	WB, IHC-P, FC
Molecular Wt:	Predicted band size: 41 kDa
Clone number:	C3B12

Description: Mitogen-activated protein kinase (MAPK) signaling pathways involve two closely related MAP kinases, known as extracellular-signal-related kinase 1 (ERK 1, p44) and 2 (ERK 2, p42). Growth factors, steroid hormones, G protein-coupled receptor ligands, and neurotransmitters can initiate MAPK signaling pathways. Activation of ERK1 and ERK2 requires phosphorylation by upstream kinases such as MAP kinase kinase (MEK), MEK kinase and Raf-1. ERK1 and ERK2 phosphorylation can occur at specific tyrosine and threonine sites mapping within consensus motifs that include the Threonine-Glutamate-Tyrosine motif. ERK activation leads to dimerization with other ERKs and subsequent localization to the nucleus. Active ERK dimers phosphorylate serine and threonine residues on nuclear proteins and influence a host of responses that include proliferation, differentiation, transcription regulation and development. The human ERK2 gene maps to chromosome 22q11.21 and encodes a 360-amino acid protein.

Immunogen: Recombinant protein within human ERK2 aa 200-360.

Positive control: HeLa cell lysate, Jurkat cell lysate, A549 cell lysate, A431 cell lysate, HepG2 cell lysate, HEK-293 cell lysate, NIH/3T3 cell lysate, RAW264.7 cell lysate, C6 cell lysate, PC-12 cell lysate, human brain tissue lysate, mouse brain tissue lysate, rat brain tissue lysate, human thyroid tissue, human skin tissue, human breast carcinoma tissue, human pancreas tissue, mouse testis tissue, mouse colon tissue, mouse ovary tissue, K562.

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	1:3,000
IHC-P	1:50-1:200
FC	1:50-1:100

Storage Buffer: 1*PBS (pH7.4), 0.2% BSA, 50% Glycerol. Preservative: 0.05% SodiumAzide.

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

Purity: Protein G affinity purified.

Images

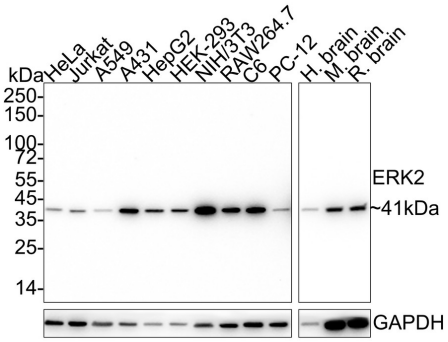

Fig1: Western blot analysis of ERK2 on different lysates with Mouse anti-ERK2 antibody (EM1901-55) at 1/3,000 dilution.

Lane 1: HeLa cell lysate (20 µg/Lane)
Lane 2: Jurkat cell lysate (20 µg/Lane)
Lane 3: A549 cell lysate (20 µg/Lane)
Lane 4: A431 cell lysate (20 µg/Lane)
Lane 5: HepG2 cell lysate (20 µg/Lane)
Lane 6: HEK-293 cell lysate (20 µg/Lane)
Lane 7: NIH/3T3 cell lysate (20 µg/Lane)
Lane 8: RAW264.7 cell lysate (20 µg/Lane)
Lane 9: C6 cell lysate (20 µg/Lane)
Lane 10: PC-12 cell lysate (20 µg/Lane)
Lane 11: Human brain tissue lysate (40 µg/Lane)
Lane 12: Mouse brain tissue lysate (40 µg/Lane)
Lane 13: Rat brain tissue lysate (40 µg/Lane)

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

Exposure time: Lane 1-10: 2 minute 37 seconds; Lane 11-13: 5 seconds;
ECL: K1801;
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 (EM1901-55) at 1/3,000 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.

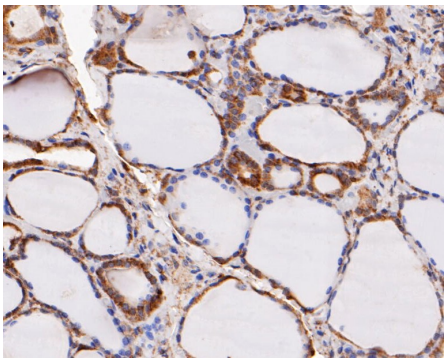

Fig2: Immunohistochemical analysis of paraffin-embedded human thyroid tissue using anti-ERK2 antibody. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0) for 20 minutes. The tissues were blocked in 5% BSA for 30 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (EM1901-55, 1/100) for 30 minutes at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

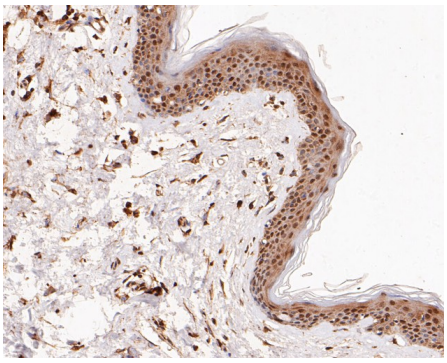

Fig3: Immunohistochemical analysis of paraffin-embedded human skin tissue using anti-ERK2 antibody. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0) for 20 minutes. The tissues were blocked in 5% BSA for 30 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (EM1901-55, 1/100) for 30 minutes at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

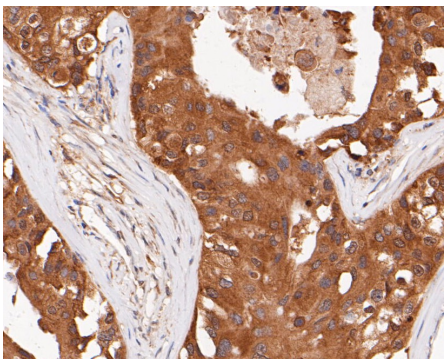

Fig4: Immunohistochemical analysis of paraffin-embedded human breast carcinoma tissue using anti-ERK2 antibody. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0) for 20 minutes. The tissues were blocked in 5% BSA for 30 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (EM1901-55, 1/100) for 30 minutes at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

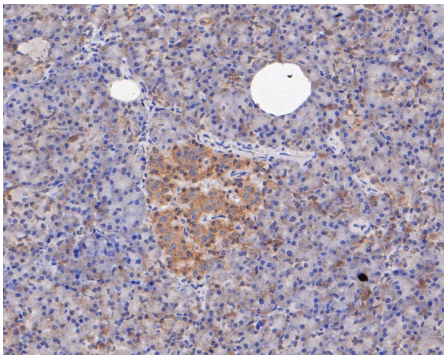

Fig5: Immunohistochemical analysis of paraffin-embedded human pancreas tissue using anti-ERK2 antibody. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0) for 20 minutes. The tissues were blocked in 5% BSA for 30 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (EM1901-55, 1/100) for 30 minutes at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

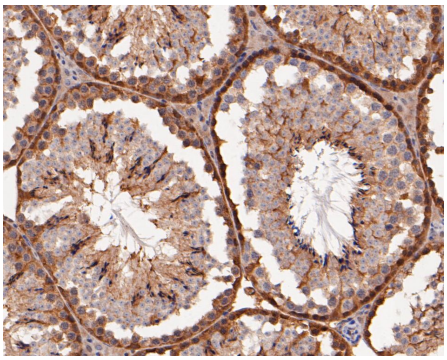

Fig6: Immunohistochemical analysis of paraffin-embedded mouse testis tissue using anti-ERK2 antibody. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0) for 20 minutes. The tissues were blocked in 5% BSA for 30 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (EM1901-55, 1/100) for 30 minutes at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

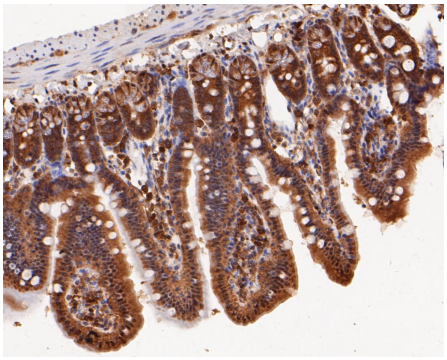

Fig7: Immunohistochemical analysis of paraffin-embedded mouse colon tissue using anti-ERK2 antibody. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0) for 20 minutes. The tissues were blocked in 5% BSA for 30 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (EM1901-55, 1/100) for 30 minutes at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

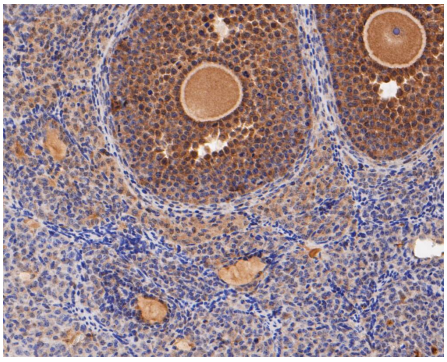

Fig8: Immunohistochemical analysis of paraffin-embedded mouse ovary tissue using anti-ERK2 antibody. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0) for 20 minutes. The tissues were blocked in 5% BSA for 30 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (EM1901-55, 1/100) for 30 minutes at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

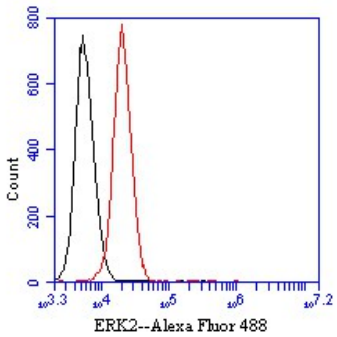

Fig9: Flow cytometric analysis of ERK2 was done on K562 cells. The cells were fixed, permeabilized and stained with the primary antibody (EM1901-55, 1/50) (red). After incubation of the primary antibody at room temperature for an hour, the cells were stained with a Alexa Fluor 488-conjugated Goat anti-Mouse IgG Secondary antibody at 1/1000 dilution for 30 minutes.Unlabelled sample was used as a control (cells without incubation with primary antibody; black).

Background References

1. Wang VY. et. al. Bcl3 Phosphorylation by Akt, Erk2, and IKK Is Required for Its Transcriptional Activity. Mol Cell. 2017 Aug 3;67(3):484-497.e5.
2. Schwebs DJ. et. al. Dictyostelium Erk2 is an atypical MAPK required for chemotaxis. Cell Signal. 2018 Jun;46:154-165.