Phospho-ERK5 (Thr218, Tyr220) Polyclonal Antibody

Catalog Number 44-612G

**Details**

- **Size**: 100 µL
- **Host/Isotope**: Rabbit / IgG
- **Class**: Polyclonal
- **Type**: Antibody
- **Immunogen**: The antiserum was produced against a chemically synthesized phosphopeptide derived from the region of human ERK5 that contains threonine 218 and tyrosine 220. The sequence is conserved in mouse.
- **Conjugate**: Unconjugated
- **Form**: Liquid
- **Purification**: Antigen affinity chromatography
- **Storage buffer**: Dulbecco's PBS, pH 7.3, with 50% glycerol, 1mg/mL BSA
- **Contains**: 0.05% sodium azide
- **Storage Conditions**: -20°C

**Species Reactivity**

- **Species reactivity**: Human
- **Published species**: Non-human primate, Mouse, Human, Not Applicable

**Tested Applications**

- **Western Blot (WB)**: 1:1,000
- **Immunocytochemistry (ICC/IF)**: Assay-dependent

**Published Applications**

- **Western Blot (WB)**: See 3 publications below
- **ELISA (ELISA)**: See 1 publications below
- **Immunoprecipitation (IP)**: See 1 publications below

**Background/Target Information**

MAPK7 (ERK5) serine/threonine kinase is a member of the MAP kinase family and is involved in a wide variety of cellular processes such as proliferation, differentiation, transcription regulation and development. MAPK7 is activated by mitogen-activated protein kinase 5 (MAP2K5/MEK5) and is involved in downstream signaling processes of various receptors. In response to extracellular signals, MAPK7 translocates to the cell nucleus where it regulates gene expression by phosphorylating and activating different transcription factors. Gene deletion of MAPK7 in mice results in defective blood vessel and cardiac development leading to embryonic lethality. MAPK7 has been shown to be critical for endothelial function and maintenance of blood vessel integrity. Four alternatively spliced transcript variants of this gene encoding two distinct isoforms have been reported. ERK5 is expressed in many adult tissues, abundantly in heart, placenta, lung, kidney and skeletal muscle, but is not detectable in liver.

Phospho-ERK5 (Thr218, Tyr220) Antibody (44-612G) in WB

Extracts prepared from HEK293 cells transiently transfected with plasmids expressing ERK5 kinase domain (ERK5kin) and constitutively activated MEK5-D were resolved by SDS-PAGE on a 10% polyacrylamide gel and transferred to PVDF. Membranes were blocked with a 5% BSA-TBST buffer overnight at 4°C, then were incubated with the ERK5 (Thr218, Tyr220) antibody for two hours at room temperature in a 3% BSA-TBST buffer, following prior incubation with: no peptide (1), the non-phosphopeptide corresponding to the immunogen (2), a generic phosphothreonine-containing peptide (3), a generic phosphotyrosine-containing peptide (4), the phosphopeptide derived from the corresponding region of ERK1&2 (5), or, the phosphopeptide immunogen (6). After washing, membranes were incubated with goat F(ab')2 anti-rabbit IgG alkaline phosphatase conjugate (Product # ALI4405) and bands were detected using the Tropix WesternStar™ detection method. The data show that while there is some cross-reactivity with ERK1&2, only the phosphopeptide corresponding to ERK5 (pTpY218/220) completely blocks the antibody signal, demonstrating the specificity of the antibody. NOTE: The antibody signal appears at ~50 kDa as this is the molecular weight of the transiently transfected ERK5 kinase domain.
### 3 Western Blot References

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<thead>
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| **Human / Not Cited** | EMBO reports (2005; 6: 63)  
"Abl-kinase-sensitive levels of ERK5 and its intrinsic basal activity contribute to leukaemia cell survival."  
Author(s): Buschbeck M, Hofbauer S, Di Croce L, Keri G, Ullrich A  
PubMed Article URL: [http://dx.doi.org/10.1038/sj.embor.7400316](http://dx.doi.org/10.1038/sj.embor.7400316) |
| **Mouse / Not Cited** | 44-612G was used in Western Blotting to define methods used to measure the activation of ERK5 using different biochemical and cell-based assays. |
| **Non-human primate / Not Cited** | The Journal of biological chemistry (2002; 277: 29503)  
"Phosphotyrosine-specific phosphatase PTP-SL regulates the ERK5 signaling pathway."  
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| **Human / Not Cited** | Methods in molecular biology (Clifton, N.J.) (2010; 661: 91)  
"Activity assays for extracellular signal-regulated kinase 5."  
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### 1 ELISA References

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### PubMed References

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