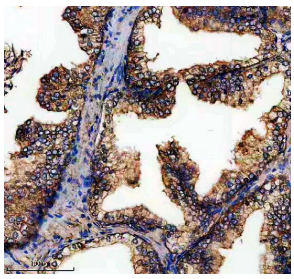
DUSP7 Antibody / Dual specificity protein phosphatase 7 Antibody (FY13624)

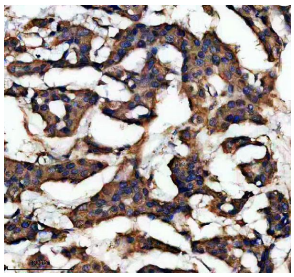
Catalog No.	Formulation	Size
FY13624	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

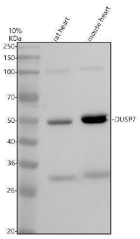
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q16829
Applications	Western blot: 0.5-1ug/ml Immunohistochemistry (FFPE): 2-5ug/ml ELISA: 0.1-0.5 ug/ml
Limitations	This DUSP7 Antibody / Dual specificity protein phosphatase 7 Antibody is intended for research use only.



DUSP7 Antibody by IHC in human prostate carcinoma. Immunohistochemistry of paraffin-embedded human prostate carcinoma using Dual specificity protein phosphatase 7 Antibody shows extensive brown DAB-positive staining in glandular tumor epithelium, with blue hematoxylin counterstaining. Sections underwent heat-mediated EDTA antigen retrieval at pH 8.0, followed by overnight incubation with 2 ug/mL primary antibody at 4oC and peroxidase-based visualization.



DUSP7 Antibody by IHC in human breast carcinoma. Immunohistochemistry of paraffin-embedded human breast carcinoma using Dual specificity protein phosphatase 7 Antibody reveals brown DAB staining in malignant epithelial cells with blue hematoxylin nuclear counterstaining. Heat-mediated antigen retrieval was performed in EDTA buffer, pH 8.0. Sections were incubated with 2 ug/mL primary antibody overnight at 4oC and developed using a peroxidase detection system.



DUSP7 Antibody by WB in rat and mouse heart. Western blot analysis using Dual specificity protein phosphatase 7 Antibody detects a prominent band consistent with the expected molecular weight of approximately 45 kDa in rat heart (lane 1) and mouse heart (lane 2) tissue lysates. Reduced samples containing 30 ug total protein per lane were separated by 10% SDS-PAGE and transferred to nitrocellulose. Membranes were blocked with 5% nonfat milk and incubated with 0.5 ug/mL primary antibody overnight at 4oC, followed by HRP-conjugated secondary antibody and chemiluminescent detection.

Description

DUSP7 Antibody / Dual specificity protein phosphatase 7 Antibody recognizes DUSP7, also known as PYST2, a dual-specificity phosphatase involved in controlling mitogen-activated protein kinase signaling. MAPK pathways translate growth-factor and environmental inputs into changes in transcription, metabolism, proliferation, and differentiation. Their output depends not only on whether a kinase becomes activated but also on how long its activity persists. DUSP7 belongs to the phosphatases that counterbalance MAPK activation by removing regulatory phosphate groups from kinase activation loops.

ERK1 and ERK2 are activated when upstream MEK kinases phosphorylate both threonine and tyrosine residues within their activation motifs. DUSP7 can dephosphorylate activated ERK proteins, thereby reducing their catalytic activity. Its catalytic domain contains the conserved cysteine-based motif shared by many protein phosphatases, while other regions contribute to recognition of MAPK substrates. This combination of catalytic chemistry and selective protein interactions helps distinguish MAPK-directed phosphatases from enzymes with broader substrate preferences.

The DUSP7 Antibody recognizes a MAPK-directed phosphatase whose influence on ERK activity must be understood alongside the actions of related phosphatases. ERK signaling participates in decisions that are highly sensitive to timing. A brief ERK pulse may produce a different transcriptional response from sustained activation, even when both begin with similar upstream stimulation. Phosphatases such as DUSP7 help shape these temporal patterns by providing a route for signal attenuation. Their effects can also be influenced by cellular localization, expression changes, and feedback from the pathways they regulate. DUSP7 therefore functions within a dynamic signaling circuit rather than as an isolated on-off switch.

Several phosphatases can act on overlapping MAPK substrates, making functional redundancy an important consideration when assessing DUSP7. A change in one enzyme's abundance may be buffered by others or may become consequential only in a particular cellular state. Distinguishing these possibilities requires attention to signaling kinetics and the broader phosphatase network. Understanding when DUSP7 makes a nonredundant contribution to ERK regulation can help explain how cells preserve appropriate signaling duration while responding to repeated or changing extracellular cues.

Explore related research targets in our Signal Transduction Antibodies for Cell Signaling and Regulatory Pathway Research collection.

Application Notes

Users should optimize the working dilution of the DUSP7 Antibody / Dual specificity protein phosphatase 7 Antibody for their specific experimental setup.

Immunogen

The DUSP7 Antibody was generated using e. coli-derived human PYST2/DUSP7 recombinant protein (amino acids G107-T419).

Storage

After reconstitution, the DUSP7 Antibody may be stored at 4oC for up to one month. For longer storage, aliquot and freeze at -20oC for up to six months. Avoid repeated freezing and thawing.

Alternate Names

DUSP7 antibody, Dual specificity protein phosphatase 7 antibody, dual specificity phosphatase 7 antibody, MKP X antibody, MKPX antibody, PYST2 antibody

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