

#5149 Store at -20°C

DUSP4/MKP2 (D9A5) Rabbit mAb


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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, W-S	H Mk	Endogenous	42	Rabbit	#Q13115	1846

Product Usage Information

Application

Western Blotting

Simple Western™

Dilution

1:1000

1:50 - 1:250

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

Specificity / Sensitivity

DUSP4/MKP2 (D9A5) Rabbit mAb recognizes endogenous levels of total DUSP4 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Pro168 of human DUSP4 protein.

Background

MAP kinases are inactivated by dual-specificity protein phosphatases (DUSPs) that differ in their substrate specificity, tissue distribution, inducibility by extracellular stimuli, and cellular localization. DUSPs, also known as MAPK phosphatases (MKPs), specifically dephosphorylate both threonine and tyrosine residues in MAPK P-loops and have been shown to play important roles in regulating the function of the MAPK family (1,2). At least 13 members of the family (DUSP1-10, DUSP14, DUSP16, and DUSP22) display unique substrate specificities for various MAP kinases (3). MAPK phosphatases typically contain an amino-terminal rhodanese-fold responsible for DUSP docking to MAPK family members and a carboxy-terminal catalytic domain (4). These phosphatases can play important roles in development, immune system function, stress responses, and metabolic homeostasis (5). In addition, research studies have implicated DUSPs in the development of cancer and the response of cancer cells to chemotherapy (6).

DUSP4 (MKP2, hVH2) is a nuclear dual-specificity phosphatase that is a negative regulator of Erk1/2 signaling by dephosphorylating and inactivating Erk1/2 in response to growth factors (7,8). Treatment with mitogen or expression of activating mutations of Ras (G12V) or Raf (V600E) promote increased expression of DUSP4 and a coincident decrease in phospho-Erk in the nucleus (9). In contrast, numerous studies have detected decreased expression of DUSP4 in a variety of tumor types, resulting in increased signaling via the Ras/Erk pathway, enhanced tumor growth, and decreased drug sensitivity (10-12). DUSP4/MKP2 also plays an important role in regulating the immune system where it has been implicated in regulating T and B cell proliferation and apoptosis, and adaptive and inflammatory responses (13-16).

Background References

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Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

WB: Western Blotting **W-S:** Simple Western™

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster
X: Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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