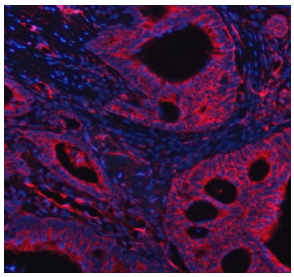
PPM1F Antibody / Protein phosphatase 1F / POPX2 (RQ8183)

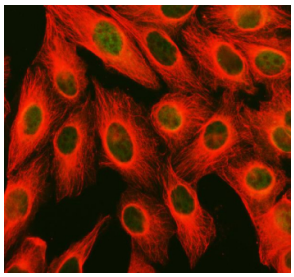
Catalog No.	Formulation	Size
RQ8183	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

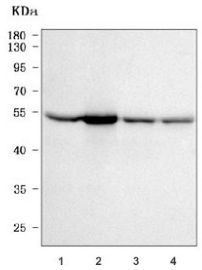
Availability	1-3 business days
Species Reactivity	Human
Format	Antigen affinity purified
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	P49593
Localization	Nuclear, cytoplasmic
Applications	Western Blot : 0.5-1ug/ml Immunofluorescence : 5ug/ml Flow Cytometry : 1-3ug/million cells Direct ELISA : 0.1-0.5ug/ml
Limitations	This PPM1F antibody is available for research use only.



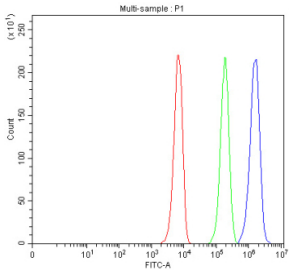
Immunofluorescent staining of FFPE human intestinal cancer tissue with PPM1F antibody (red) and DAPI nuclear stain (blue). HIER: steam section in pH8 EDTA buffer for 20 min.



Immunofluorescent staining of FFPE human U-2 OS cells with PPM1F antibody (green) and Alpha Tubulin mAb (red). HIER: steam section in pH6 citrate buffer for 20 min.



Western blot testing of human 1) MCF7, 2) K562, 3) HeLa and 4) HepG2 cell lysate with PPM1F antibody. Predicted molecular weight ~50 kDa.



Flow cytometry analysis of fixed and permeabilized human K562 cells with PPM1F antibody at 1ug/million cells (blocked with goat sera); Red=cells alone, Green=isotype control, Blue= PPM1F antibody.

Description

PPM1F antibody targets Protein phosphatase 1F, also known as POPX2, encoded by the PPM1F gene. Protein phosphatase 1F is a member of the PP2C family of magnesium- and manganese-dependent serine-threonine protein phosphatases. PPM1F functions as a negative regulator of multiple signaling pathways by dephosphorylating specific kinase substrates, thereby fine-tuning cellular responses to extracellular and intracellular cues. The protein is primarily localized in the cytoplasm but can associate with distinct subcellular compartments depending on interacting partners and signaling context.

Functionally, Protein phosphatase 1F plays an important role in regulating cytoskeletal dynamics, cell migration, and signal transduction. PPM1F has been shown to interact with and dephosphorylate key kinases involved in actin remodeling and stress-activated signaling pathways, contributing to control of cell shape and motility. Through these actions, POPX2 serves as a modulatory phosphatase that balances kinase-driven signaling and prevents excessive or prolonged pathway activation. A PPM1F antibody supports studies focused on phosphatase-mediated regulation of intracellular signaling networks.

PPM1F is expressed in a wide range of tissues and cell types, with detectable expression in epithelial cells, fibroblasts, and cells of the nervous system. Its expression and activity are dynamically regulated during processes such as cell migration, adhesion, and differentiation. In migrating cells, POPX2 has been implicated in coordinating signaling at the leading edge, linking phosphatase activity to cytoskeletal organization and directional movement. This context-dependent regulation highlights the role of PPM1F as a spatial and temporal regulator of signaling events.

From a disease-relevance perspective, altered PPM1F expression or activity has been investigated in cancer biology and cell invasion studies. Dysregulation of phosphatase activity can disrupt the balance between phosphorylation and dephosphorylation, contributing to aberrant signaling that promotes tumor cell migration and metastasis. PPM1F has also been studied in relation to neuronal signaling and stress responses, reflecting broader roles for PP2C family phosphatases in maintaining cellular homeostasis. These associations position PPM1F as a molecule of interest in

studies of signaling imbalance and disease-associated cellular behavior.

At the molecular level, Protein phosphatase 1F contains a conserved PP2C catalytic domain responsible for its phosphatase activity. Isoform diversity, protein-protein interactions, and post-translational modifications can influence substrate specificity, localization, and apparent electrophoretic behavior on SDS-PAGE without implying changes in primary sequence. A PPM1F antibody supports research applications focused on phosphatase signaling, cytoskeletal regulation, and disease-associated changes in phosphorylation-dependent pathways, with NSJ Bioreagents providing reagents intended for research use.

Application Notes

Optimal dilution of the PPM1F antibody should be determined by the researcher.

Immunogen

E. coli-derived recombinant human protein (amino acids E17-S454) was used as the immunogen for the PPM1F antibody.

Storage

After reconstitution, the PPM1F antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.