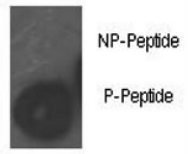
Phospho-RB1 Ser780 Antibody / RB1 Phospho Ser780 Polyclonal Antibody (F48445)

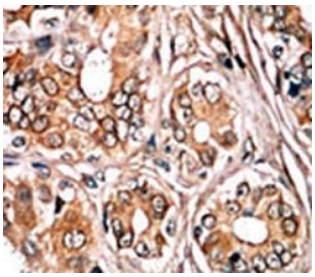
Catalog No.	Formulation	Size
F48445-0.4ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.4 ml
F48445-0.08ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.08 ml

Bulk quote request

Species Reactivity	Human
Predicted Reactivity	Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Antigen affinity
UniProt	P06400
Applications	Dot blot: 1:500 IHC (Paraffin): 1:50-1:100
Limitations	This Phospho-RB1 Ser780 Antibody / RB1 Phospho Ser780 Polyclonal Antibody is available for research use only.



Phospho-RB1 Ser780 Antibody Dot Blot Analysis. Dot blot analysis of the RB1 Phospho Ser780 Polyclonal Antibody using phosphorylated (P-Peptide) and non-phosphorylated (NP-Peptide) RB1 peptides, with 50 ng of each peptide spotted separately. A prominent signal is observed with the phosphorylated peptide, while no appreciable signal is detected with the non-phosphorylated peptide, demonstrating preferential recognition of the Ser780-phosphorylated peptide.



IHC analysis of FFPE human breast carcinoma tissue stained with the Phospho-RB1 Ser780 Antibody.

Description

Phospho-RB1 Ser780 Antibody / RB1 Phospho Ser780 Polyclonal Antibody recognizes retinoblastoma protein phosphorylated at serine 780, a regulatory site associated with cyclin-dependent kinase signaling and cell cycle progression. Retinoblastoma protein, encoded by the RB1 gene, is a tumor suppressor that regulates the transition from G1 to S phase by controlling the activity of E2F transcription factors. Its growth-suppressive functions are influenced by phosphorylation at multiple residues, which can modify protein interactions and alter the transcriptional programs governing cellular proliferation.

Ser780 is located in the C-terminal region of RB1 and is a well-characterized phosphorylation site associated with cyclin D-dependent CDK4/6 activity. Phosphorylation at this residue is frequently examined as a marker of signaling through the cyclin D-CDK4/6-RB1 pathway. During early G1, mitogenic signals promote cyclin D expression and CDK4/6 activation, contributing to changes in RB1 phosphorylation. Subsequent phosphorylation events involving additional residues and cyclin-dependent kinases help coordinate progression toward DNA replication. However, phosphorylation at Ser780 alone does not establish complete RB1 inactivation or unrestricted E2F activity.

The regulatory significance of Ser780 phosphorylation extends to studies of CDK4/6 inhibition. Pharmacological inhibitors of CDK4/6 can reduce phosphorylation at this site in responsive cells, providing a biochemical indicator of pathway modulation. Interpretation nevertheless requires consideration of total RB1 expression, additional phosphorylation sites, and the cellular context. RB1 phosphorylation is dynamic, and individual residues may respond differently to kinase activity, phosphatase regulation, and cell cycle conditions. Site-specific measurements therefore provide information that cannot be obtained from total protein abundance alone.

Disruption of the cyclin D-CDK4/6-RB1 pathway contributes to abnormal proliferation in numerous cancers. Increased cyclin D expression, CDK4/6 activation, or loss of CDK inhibitors can alter RB1 phosphorylation and weaken normal cell cycle restrictions. Conversely, tumors lacking functional RB1 may respond differently to therapies targeting upstream cyclin-dependent kinases. Distinguishing phosphorylation-dependent regulation from RB1 protein loss is consequently important when examining mechanisms of tumor growth and therapeutic response. This Phospho-RB1 Ser780 Antibody provides a site-specific reagent for investigating RB1 phosphorylation, CDK4/6 pathway activity, and the molecular regulation of G1 progression.

Explore our Retinoblastoma Antibody FCD-18, a rabbit monoclonal antibody targeting RB1, for an additional option with Western blot, immunohistochemistry, and immunofluorescence validation.

Application Notes

Titration of the Phospho-RB1 Ser780 Antibody / RB1 Phospho Ser780 Polyclonal Antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

This Phospho-RB1 Ser780 Antibody was produced from rabbits immunized with a KLH conjugated synthetic phosphopeptide corresponding to amino acid residues surrounding pS780 of human Rb.

Storage

Aliquot the Phospho-RB1 Ser780 Antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

Alternate Names

Phospho-Rb Ser780 antibody, Phospho-Retinoblastoma Ser780 antibody, Phospho-pRb Ser780 antibody, Phosphorylated RB1 Ser780 antibody, Retinoblastoma Protein Phospho Ser780 antibody

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