

Rb1 Antibody / Retinoblastoma (FY12555)

Catalog No.	Formulation	Size
FY12555	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

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Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na ₂ HPO ₄ .
UniProt	P06400
Applications	Western Blot : 0.25-0.5ug/ml Immunohistochemistry : 2-5ug/ml Immunocytochemistry/Immunofluorescence : 5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This RB1 antibody is available for research use only.

Description

RB1 antibody detects Retinoblastoma-associated protein, a pivotal tumor suppressor that controls cell cycle progression, differentiation, and genome stability. RB1 is the founding member of the retinoblastoma protein family, which also includes RBL1 (p107) and RBL2 (p130). Through regulation of E2F transcription factors, RB1 governs the G1-to-S phase transition, making it one of the most important gatekeepers of cellular proliferation. The RB1 antibody is widely used in cancer biology, developmental research, and cell cycle studies.

RB1 is encoded by the RB1 gene located on human chromosome 13q14.2. The protein is approximately 110 kilodaltons and composed of an N-terminal domain, a central pocket domain responsible for E2F binding, and a C-terminal regulatory region. RB1 activity is primarily modulated through phosphorylation by cyclin-dependent kinases (CDKs). Hypophosphorylated RB1 binds and inhibits E2F transcription factors, repressing transcription of S-phase genes. Upon phosphorylation, RB1 releases E2Fs, allowing cell cycle progression.

The RB1 antibody detects the 110 kilodalton protein and phospho-variants by western blot and demonstrates nuclear

localization in immunocytochemistry. RB1 serves as a platform for chromatin modifiers, recruiting histone deacetylases (HDACs) and methyltransferases to silence gene expression during quiescence and differentiation. In addition to cell cycle control, RB1 promotes genomic stability by coordinating DNA repair, replication fidelity, and mitotic checkpoints.

Loss or mutation of RB1 is a hallmark of numerous cancers, including retinoblastoma, osteosarcoma, and small-cell lung carcinoma. RB1 inactivation leads to unchecked E2F activity, excessive proliferation, and impaired DNA repair. Conversely, reactivation of RB1 signaling can suppress tumor growth and restore differentiation potential in malignant cells.

Beyond oncology, RB1 regulates tissue-specific differentiation, especially in muscle and neuronal lineages, by interacting with lineage-determining transcription factors. Its phosphorylation status serves as an indicator of cell cycle activity and is frequently used as a diagnostic biomarker. NSJ Bioreagents provides a validated RB1 antibody optimized for western blot, immunohistochemistry, and flow cytometry, supporting detailed studies of tumor suppression, transcriptional control, and cell cycle regulation.

Application Notes

Optimal dilution of the RB1 antibody should be determined by the researcher.

Immunogen

E.coli-derived human RB1 recombinant protein (Position: E40-D921) was used as the immunogen for the RB1 antibody.

Storage

After reconstitution, the RB1 antibody can be stored for up to one month at 4°C. For long-term, aliquot and store at -20°C. Avoid repeated freezing and thawing.