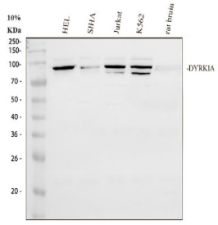
DYRK1A Antibody / Dual-specificity tyrosine-phosphorylation-regulated kinase 1A (RQ4176)

Catalog No.	Formulation	Size
RQ4176	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q13627
Applications	Western Blot : 0.5-1ug/ml Direct ELISA : 0.1-0.5ug/ml
Limitations	This DYRK1A antibody is available for research use only.



Western blot analysis of DYRK1A using anti-DYRK1A antibody. Proteins were separated on a 10% SDS-PAGE gel under reducing conditions and transferred to a nitrocellulose membrane. Lane 1: human HeLa whole cell lysates; Lane 2: human SiHa whole cell lysates; Lane 3: human Jurkat whole cell lysates; Lane 4: human K562 whole cell lysates; Lane 5: rat brain tissue lysates. The membrane was incubated with rabbit anti-DYRK1A antibody followed by HRP-conjugated goat anti-rabbit IgG and chemiluminescent detection. A specific band was detected at the predicted molecular weight of DYRK1A (~86 kDa). In some cell lysate samples, a closely migrating doublet is observed near the expected size, which is consistent with reported DYRK1A isoforms and phosphorylation-dependent mobility shifts described in the literature.

Description

DYRK1A Antibody targets dual-specificity tyrosine-phosphorylation-regulated kinase 1A, a serine-threonine protein kinase encoded by the DYRK1A gene. Dual-specificity tyrosine-phosphorylation-regulated kinase 1A is a member of the DYRK family of kinases, which are characterized by their ability to autophosphorylate on tyrosine residues while phosphorylating

substrates primarily on serine and threonine residues. DYRK1A plays a central role in cellular signaling pathways that regulate cell cycle progression, transcriptional control, neuronal development, and signal integration in both dividing and post-mitotic cells.

Functionally, DYRK1A participates in phosphorylation-dependent regulation of a wide range of substrates involved in transcription, RNA processing, cytoskeletal organization, and cell fate determination. Through these activities, dual-specificity tyrosine-phosphorylation-regulated kinase 1A influences key biological processes including cell proliferation, differentiation, and survival. A DYRK1A Antibody supports studies focused on kinase signaling networks, phosphorylation-dependent regulatory mechanisms, and intracellular signal transduction pathways relevant to development and disease.

DYRK1A is broadly expressed across tissues, with particularly important roles in the central nervous system. During development, DYRK1A contributes to neuronal proliferation, differentiation, and synaptic function, while in mature tissues it is involved in maintenance of cellular homeostasis and regulated signaling responses. Subcellular localization of dual-specificity tyrosine-phosphorylation-regulated kinase 1A is predominantly nuclear, although cytoplasmic distribution has also been reported depending on cell type and physiological context. This dynamic localization reflects the ability of DYRK1A to regulate both nuclear transcriptional programs and cytoplasmic signaling events.

At the molecular level, DYRK1A contains a conserved kinase domain responsible for catalytic activity, along with regulatory regions that influence substrate recognition, localization, and interaction with binding partners. Autophosphorylation of DYRK1A is required for full catalytic activity and represents a defining feature of the DYRK kinase family. These structural and regulatory characteristics allow dual-specificity tyrosine-phosphorylation-regulated kinase 1A to function as an integrative signaling node that coordinates phosphorylation events across multiple cellular compartments.

From a disease relevance perspective, DYRK1A has been extensively investigated in the context of neurodevelopmental disorders, neurodegenerative disease, and cancer. Altered DYRK1A expression or activity has been associated with changes in neuronal development and cognitive function, and the gene is located within the Down syndrome critical region, where gene dosage effects contribute to disease-associated phenotypes. In addition, DYRK1A has been studied for its involvement in cell cycle regulation and oncogenic signaling pathways, highlighting its broader relevance beyond neural systems. These findings underscore the importance of dual-specificity tyrosine-phosphorylation-regulated kinase 1A as a regulator of cellular signaling and developmental processes.

DYRK1A Antibody reagents are valuable tools for investigating kinase signaling pathways, phosphorylation-dependent regulatory mechanisms, and disease-associated alterations in DYRK1A expression or localization. Such antibodies support research applications examining intracellular signaling, transcriptional regulation, and developmental biology, with NSJ Bioreagents providing antibodies intended for research use.

Application Notes

Optimal dilution of the DYRK1A antibody should be determined by the researcher.

Immunogen

A recombinant human protein corresponding to amino acids H38-M269 was used as the immunogen for the DYRK1A antibody.

Storage

After reconstitution, the DYRK1A antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.