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DYRK3 antibody - N-terminal region

Rabbit Polyclonal Antibody
Catalog # AI10011

Product Information

Application	WB, IF
Primary Accession	O43781
Other Accession	O43781, NP_003573, NM_003582
Reactivity	Human, Mouse
Predicted	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	65714

Additional Information

Gene ID	8444
Alias Symbol	DYRK5, RED, REDK, hYAK3-2
Other Names	Dual specificity tyrosine-phosphorylation-regulated kinase 3, Regulatory erythroid kinase, REDK, DYRK3
Target/Specificity	This gene product belongs to the DYRK family of dual-specificity protein kinases that catalyze autophosphorylation on serine/threonine and tyrosine residues. The members of this family share structural similarity, however, differ in their substrate specificity, suggesting their involvement in different cellular functions. The encoded protein has been shown to autophosphorylate on tyrosine residue and catalyze phosphorylation of histones H3 and H2B in vitro. Alternatively spliced transcript variants encoding different isoforms have been identified.
Format	Liquid. Purified antibody supplied in 1x PBS buffer with 0.09% (w/v) sodium azide and 2% sucrose.
Reconstitution & Storage	Add 50 ul of distilled water. Final anti-DYRK3 antibody concentration is 1 mg/ml in PBS buffer with 2% sucrose. For longer periods of storage, store at -20°C. Avoid repeat freeze-thaw cycles.
Precautions	DYRK3 antibody - N-terminal region is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	DYRK3 (HGNC:3094)
Function	Dual-specificity protein kinase that promotes disassembly of several types of

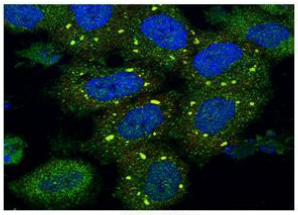
	membraneless organelles during mitosis, such as stress granules, nuclear speckles and pericentriolar material (PubMed:29973724). Dual-specificity tyrosine-regulated kinases (DYRKs) autophosphorylate a critical tyrosine residue in their activation loop and phosphorylate their substrate on serine and threonine residues (PubMed:29634919, PubMed:9748265). Acts as a central dissolvase of membraneless organelles during the G2-to-M transition, after the nuclear-envelope breakdown: acts by mediating phosphorylation of multiple serine and threonine residues in unstructured domains of proteins, such as SRRM1 and PCM1 (PubMed:29973724). Does not mediate disassembly of all membraneless organelles: disassembly of P-body and nucleolus is not regulated by DYRK3 (PubMed:29973724). Dissolution of membraneless organelles at the onset of mitosis is also required to release mitotic regulators, such as ZNF207, from liquid-unmixed organelles where they are sequestered and keep them dissolved during mitosis (PubMed:29973724). Regulates mTORC1 by mediating the dissolution of stress granules: during stressful conditions, DYRK3 partitions from the cytosol to the stress granule, together with mTORC1 components, which prevents mTORC1 signaling (PubMed:23415227). When stress signals are gone, the kinase activity of DYRK3 is required for the dissolution of stress granule and mTORC1 relocation to the cytosol: acts by mediating the phosphorylation of the mTORC1 inhibitor AKT1S1, allowing full reactivation of mTORC1 signaling (PubMed:23415227). Also acts as a negative regulator of EPO-dependent erythropoiesis: may place an upper limit on red cell production during stress erythropoiesis (PubMed:10779429). Inhibits cell death due to cytokine withdrawal in hematopoietic progenitor cells (PubMed:10779429). Promotes cell survival upon genotoxic stress through phosphorylation of SIRT1: this in turn inhibits p53/TP53 activity and apoptosis (PubMed:20167603).
Cellular Location	Nucleus. Cytoplasm. Nucleus speckle. Cytoplasmic granule. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome Note=Associates with membraneless organelles in the cytoplasm and nucleus (PubMed:29973724). Shuttles between cytoplasm and stress granules (PubMed:20167603). Localized predominantly on distinct speckles distributed throughout the cytoplasm of the cell (PubMed:20167603). At low concentration, shows a homogeneous distribution throughout the cytoplasm and does not condense in speckles. During oxidative and osmotic stress, localizes to stress granules (PubMed:20167603).
Tissue Location	Isoform 1: Highly expressed in testis and in hematopoietic tissue such as fetal liver, and bone marrow (PubMed:10779429). Isoform 1: Predominant form in fetal liver and bone marrow (PubMed:10779429). Isoform 1: Present at low levels in heart, pancreas, lymph node and thymus (PubMed:10779429). Isoform 2: Highly expressed in testis and in hematopoietic tissue such as fetal liver, and bone marrow (PubMed:10779429). Isoform 2: Predominant form in testis. Isoform 2: Present at low levels in heart, pancreas, lymph node and thymus (PubMed:10779429).

Background

This is a rabbit polyclonal antibody against DYRK3. It was validated on Western Blot using a cell lysate as a positive control. Abgent strives to provide antibodies covering each member of a whole protein family of your interest. We also use our best efforts to provide you antibodies recognize various epitopes of a target protein. For availability of antibody needed for your experiment, please inquire (sales@abgent.com).

Images

DYRK3



Green: DYRK3
Red: PABP1
Blue: DAPI