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Anti-Cdk7/CAK Antibody (Monoclonal, MO-1.1)

Catalog # ABO10417

Specification

Anti-Cdk7/CAK Antibody (Monoclonal, MO-1.1) - Product Information

Application	**WB, IHC-F, ICC**
Primary Accession	P51952
Host	**Mouse**
Isotype	**Mouse IgG2b**
Reactivity	**Human**
Clonality	**Monoclonal**
Format	**Lyophilized**

Description
Mouse IgG monoclonal antibody for Cdk7/CAK, cyclin-dependent kinase 7 (CDK7) detection. Tested with WB, IHC-F, ICC in Human. No cross reactivity with other proteins.

Reconstitution
Add 1ml of PBS buffer will yield a concentration of 100ug/ml.

Anti-Cdk7/CAK Antibody (Monoclonal, MO-1.1) - Additional Information

Other Names
Cyclin-dependent kinase 7, 2.7.11.22, 2.7.11.23, 39 protein kinase, P39 Mo15, CDK-activating kinase 1, Cell division protein kinase 7, TFIIH basal transcription factor complex kinase subunit, Cdk7, Cak, Cak1, Mo15

Calculated MW
37141 MW KDa

Application Details
Immunocytochemistry , 1 µg/ml, Human, -
Immunohistochemistry(Frozen Section), 0.5 µg/ml, Human, -
Western blot, 0.25 µg/ml, Human

Subcellular Localization
Nucleus . Cytoplasm . Cytoplasm, perinuclear region . Colocalizes with PRKCI in the cytoplasm and nucleus. Translocates from the nucleus to cytoplasm and perinuclear region in response to DNA-bound peptides (By similarity). .

Tissue Specificity
CDK7: Ubiquitous.

Protein Name
Cyclin-dependent kinase 7

Contents
Mouse ascites fluid, 1.2% sodium acetate, 2mg BSA, with 0.01mg NaN3 as preservative.

Immunogen
Recombinant human Cdk7 protein.

Purification
Ascites

Cross Reactivity
No cross reactivity with other proteins

Storage

At -20˚C for one year. After r˚Constitution, at 4˚C for one month. It˚Can also be aliquotted and stored frozen at -20˚C for a longer time.Avoid repeated freezing and thawing.

Sequence Similarities
Belongs to the protein kinase superfamily. CMGC Ser/Thr protein kinase family. CDC2/CDKX subfamily.

Anti-Cdk7/CAK Antibody (Monoclonal, MO-1.1) - Protein Information

Name Cdk7

Synonyms Cak, Cak1, Mo15

Function
Serine/threonine kinase involved in cell cycle control and in RNA polymerase II-mediated RNA transcription. Cyclin-dependent kinases (CDKs) are activated by the binding to a cyclin and mediate the progression through the cell cycle. Each different complex controls a specific transition between 2 subsequent phases in the cell cycle. Required for both activation and complex formation of CDK1/cyclin-B during G2-M transition, and for activation of CDK2/cyclins during G1-S transition (but not complex formation). CDK7 is the catalytic subunit of the CDK-activating kinase (CAK) complex. Phosphorylates SPT5/SUPT5H, SF1/NR5A1, POLR2A, p53/TP53, CDK1, CDK2, CDK4, CDK6 and CDK11B/CDK11. Initiates transcription by RNA polymerase II by mediating phosphorylation of POLR2A at 'Ser-5' of the repetitive C-terminal domain (CTD) when POLR2A is in complex with DNA, promoting dissociation from DNA and initiation. CAK activates the cyclin-associated kinases CDK1, CDK2, CDK4 and CDK6 by threonine phosphorylation, thus regulating cell cycle progression. CAK complexed to the core-TFIIH basal transcription factor activates RNA polymerase II by serine phosphorylation of the CTD of POLR2A, allowing its escape from the promoter and elongation of the transcripts. Its expression and activity are constant throughout the cell cycle. Upon DNA damage, triggers p53/TP53 activation by phosphorylation, but is inactivated in turn by p53/TP53; this feedback loop may lead to an arrest of the cell cycle and of the transcription, helping in cell recovery, or to apoptosis. Required for DNA-bound peptides-mediated transcription and cellular growth inhibition.

Cellular Location
Nucleus {ECO:0000250|UniProtKB:P50613}. Cytoplasm {ECO:0000250|UniProtKB:P50613}. Cytoplasm, perinuclear region {ECO:0000250|UniProtKB:P50613}. Note=Colocalizes with PRKCI in the cytoplasm and nucleus. Translocates from the nucleus to cytoplasm and perinuclear region in response to DNA-bound peptides (By similarity) {ECO:0000250|UniProtKB:P50613}

Anti-Cdk7/CAK Antibody (Monoclonal, MO-1.1) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides

- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Anti-Cdk7/CAK Antibody (Monoclonal, MO-1.1) - Images

Anti-Cdk7/CAK Antibody (Monoclonal, MO-1.1) - Background

CDK-activating kinases(CAKs) are multisubunit proteins that phosphorylate and thus activate certain cyclin-dependent protein kinases in the regulation of cell cycle progression. Cyclin dependent kinase7(CDK7) gene is mapped to chromosome 2p15-cen. CDK7 functions in both cyclin binding and T-loop phosphorylation and that these 2 steps of CDK1 activation are mutually dependent.