

AK4 Antibody (Center)

Purified Rabbit Polyclonal Antibody (Pab)

Catalog # AP20571a

Product Information

Application	WB, IHC-P, IF, E
Primary Accession	P27144
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB48826
Calculated MW	25268

Additional Information

Gene ID	205
Other Names	Adenylate kinase 4, mitochondrial {ECO:0000255 HAMAP-Rule:MF_03170}, AK 4 {ECO:0000255 HAMAP-Rule:MF_03170}, 27410 {ECO:0000255 HAMAP-Rule:MF_03170}, 2746 {ECO:0000255 HAMAP-Rule:MF_03170}, Adenylate kinase 3-like {ECO:0000255 HAMAP-Rule:MF_03170}, GTP:AMP phosphotransferase AK4 {ECO:0000255 HAMAP-Rule:MF_03170}, AK4 {ECO:0000255 HAMAP-Rule:MF_03170}
Target/Specificity	This AK4 antibody is generated from a rabbit immunized with a KLH conjugated synthetic peptide between 119-153 amino acids from the Central region of human AK4.
Dilution	WB~~1:1000 IHC-P~~1:100~500 IF~~1:25 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	AK4 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	AK4 (HGNC:363)
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Function	Broad-specificity mitochondrial nucleoside phosphate kinase involved in cellular nucleotide homeostasis by catalyzing nucleoside- phosphate interconversions (PubMed: 19073142 , PubMed: 19766732 , PubMed: 23416111 , PubMed: 24767988). Similar to other adenylate kinases, preferentially catalyzes the phosphorylation of the nucleoside monophosphate AMP with ATP as phosphate donor to produce ADP (PubMed: 19766732). Phosphorylates only AMP when using GTP as phosphate donor (PubMed: 19766732). In vitro, can also catalyze the phosphorylation of CMP, dAMP and dCMP and use GTP as an alternate phosphate donor (PubMed: 19766732 , PubMed: 23416111). Moreover, exhibits a diphosphate kinase activity, producing ATP, CTP, GTP, UTP, TTP, dATP, dCTP and dGTP from the corresponding diphosphate substrates with either ATP or GTP as phosphate donors (PubMed: 23416111). Plays a role in controlling cellular ATP levels by regulating phosphorylation and activation of the energy sensor protein kinase AMPK (PubMed: 24767988 , PubMed: 26980435). Plays a protective role in the cellular response to oxidative stress (PubMed: 19130895 , PubMed: 23474458 , PubMed: 26980435).
Cellular Location	Mitochondrion matrix {ECO:0000255 HAMAP- Rule:MF_03170, ECO:0000269 PubMed:11485571, ECO:0000269 PubMed:19766732, ECO:0000269 PubMed:26980435}
Tissue Location	Highly expressed in kidney, moderately expressed in heart and liver and weakly expressed in brain

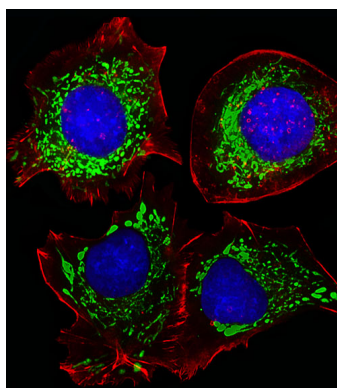
Background

Involved in maintaining the homeostasis of cellular nucleotides by catalyzing the interconversion of nucleoside phosphates. Efficiently phosphorylates AMP and dAMP using ATP as phosphate donor, but phosphorylates only AMP when using GTP as phosphate donor. Also displays broad nucleoside diphosphate kinase activity.

References

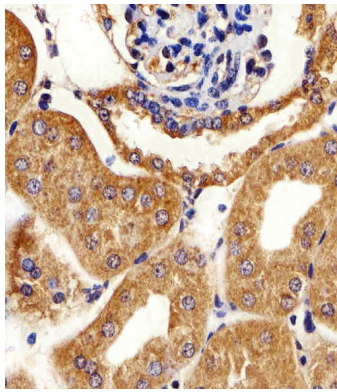
Xu G.,et al.Genomics 13:537-542(1992).
Ebert L.,et al.Submitted (JUN-2004) to the EMBL/GenBank/DDBJ databases.
Ota T.,et al.Nat. Genet. 36:40-45(2004).
Gregory S.G.,et al.Nature 441:315-321(2006).
Mural R.J.,et al.Submitted (SEP-2005) to the EMBL/GenBank/DDBJ databases.

Images

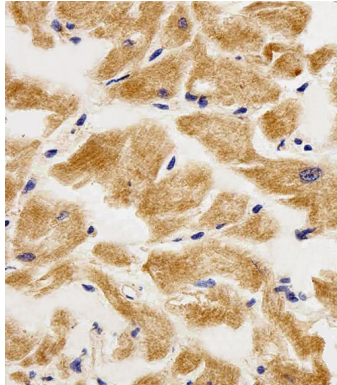


Fluorescent image of HepG2 cells stained with AK4 Antibody (Center)(Cat#AP20571a). AP20571a was diluted at 1:25 dilution. An Alexa Fluor 488-conjugated goat anti-rabbit IgG at 1:400 dilution was used as the secondary antibody (green). DAPI was used to stain the cell nuclear (blue). Cytoplasmic actin was counterstained with Alexa Fluor® 555 conjugated with Phalloidin (red).

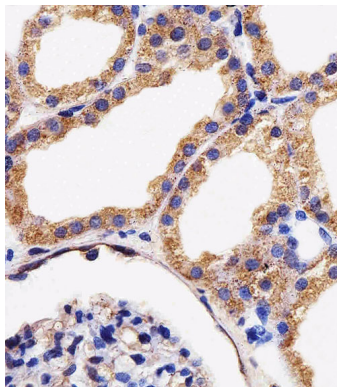
Immunohistochemical analysis of paraffin-embedded



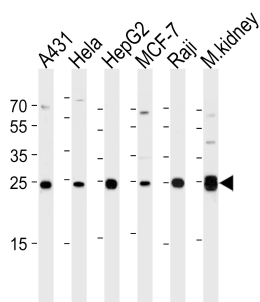
M.kidney section using AK4 Antibody (Center)(Cat#AP20571a). AP20571a was diluted at 1:25 dilution. A peroxidase-conjugated goat anti-rabbit IgG at 1:400 dilution was used as the secondary antibody, followed by DAB staining.



Immunohistochemical analysis of paraffin-embedded H.heart section using AK4 Antibody (Center)(Cat#AP20571a). AP20571a was diluted at 1:25 dilution. A peroxidase-conjugated goat anti-rabbit IgG at 1:400 dilution was used as the secondary antibody, followed by DAB staining.



Immunohistochemical analysis of paraffin-embedded H.kidney section using AK4 Antibody (Center)(Cat#AP20571a). AP20571a was diluted at 1:25 dilution. A peroxidase-conjugated goat anti-rabbit IgG at 1:400 dilution was used as the secondary antibody, followed by DAB staining.



Western blot analysis of lysates from A431, Hela, HepG2, MCF-7, Raji cell line and mouse kidney tissue lysate (from left to right), using AK4 Antibody (Center)(Cat. #AP20571a). AP20571a was diluted at 1:1000 at each lane. A goat anti-rabbit IgG H&L(HRP) at 1:5000 dilution was used as the secondary antibody. Lysates at 35ug per lane.

Citations

- [MiR-199a-3p affects the multi-chemoresistance of osteosarcoma through targeting AK4.](#)