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AK4 Antibody (Center)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AW5045

Product Information

Application	IF, IHC-P, WB
Primary Accession	P27144
Reactivity	Human
Predicted	Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Calculated MW	25268
Isotype	Rabbit IgG
Antigen Source	HUMAN

Additional Information

Gene ID	205
Antigen Region	119-153
Other Names	Adenylate kinase 4, mitochondrial, AK 4, Adenylate kinase 3-like, GTP:AMP phosphotransferase AK4, AK4, AK3, AK3L1
Dilution	IF~~1:25 IHC-P~~1:100~500 WB~~1:1000
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.
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)
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

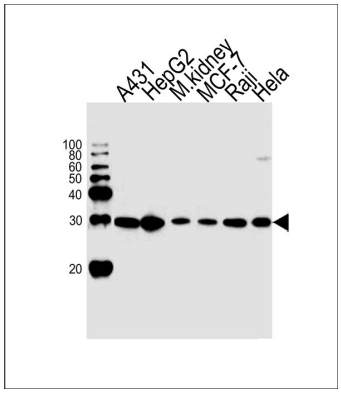
Background

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

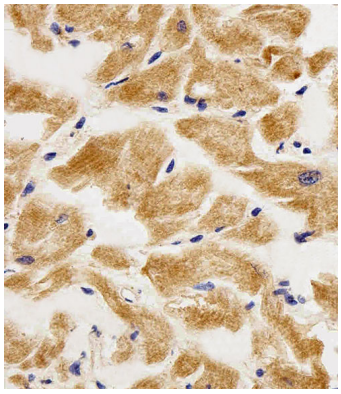
Xu G.,et al.Genomics 13:537-542(1992).
Ebert L.,et al.Submitted (JUN-2004) to the EMBL/GenBank/DDBJ databases.
Ota T.,et al.Nat. Genet. 36:40-45(2004).
Gregory S.G.,et al.Nature 441:315-321(2006).
Mural R.J.,et al.Submitted (SEP-2005) to the EMBL/GenBank/DDBJ databases.

Images

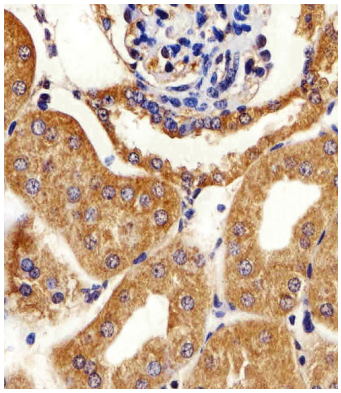


Western blot analysis of lysates from A431, HepG2 cell line, mouse kidney tissue, MCF-7, Raji, Hela cell line (from left to right), using AK4 Antibody (Center)(Cat. #AW5045). AW5045 was diluted at 1:1000 at each lane. A goat anti-rabbit IgG H&L(HRP) at 1:10000 dilution was used as the secondary antibody.

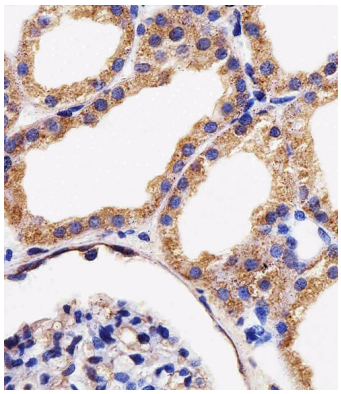
Immunohistochemical analysis of paraffin-embedded H.heart section using AK4 Antibody (Center)(Cat#AW5045). AW5045 was diluted at 1:25 dilution. A peroxidase-conjugated goat anti-rabbit IgG at



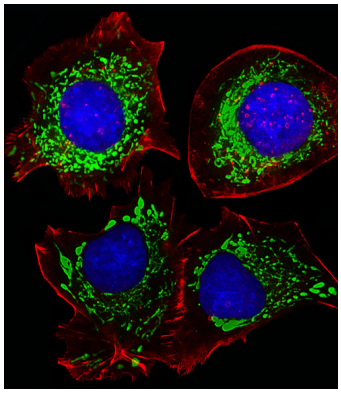
1:400 dilution was used as the secondary antibody, followed by DAB staining.



Immunohistochemical analysis of paraffin-embedded M.kidney section using AK4 Antibody (Center)(Cat#AW5045). AW5045 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#AW5045). AW5045 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.



Fluorescent image of HepG2 cells stained with AK4 Antibody (Center)(Cat#AW5045). AW5045 was diluted at 1:25 dilution. An Alexa Fluor 488-conjugated goat anti-rabbit lgG 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).

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.