10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

CRYAB Antibody (Center)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP13697c

Product Information

Application	WB, IHC-P, E
Primary Accession	P02511
Other Accession	P23928, P41316, Q7M2W6, P23927, Q60HG8, P02510, NP_001876.1
Reactivity	Human, Mouse
Predicted	Bovine, Monkey, Pig, Rabbit, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB33613
Calculated MW	20159
Antigen Region	84-112

Additional Information

Gene ID	1410
Other Names	Alpha-crystallin B chain, Alpha(B)-crystallin, Heat shock protein beta-5, HspB5, Renal carcinoma antigen NY-REN-27, Rosenthal fiber component, CRYAB, CRYA2
Target/Specificity	This CRYAB antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 84-112 amino acids from the Central region of human CRYAB.
Dilution	WB~~1:1000 IHC-P~~1:100~500 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	CRYAB Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	CRYAB (HGNC:2389)
Synonyms	CRYA2, HSPB5

Function	May contribute to the transparency and refractive index of the lens. Has chaperone-like activity, preventing aggregation of various proteins under a wide range of stress conditions. In lens epithelial cells, stabilizes the ATP6V1A protein, preventing its degradation by the proteasome (By similarity).
Cellular Location	Cytoplasm. Nucleus Secreted. Lysosome {ECO:0000250|UniProtKB:P23927}. Note=Translocates to the nucleus during heat shock and resides in sub-nuclear structures known as SC35 speckles or nuclear splicing speckles (PubMed:19464326). Localizes at the Z- bands and the intercalated disk in cardiomyocytes (PubMed:28493373) Can be secreted; the secretion is dependent on protein unfolding and facilitated by the cargo receptor TMED10; it results in protein translocation from the cytoplasm into the ERGIC (endoplasmic reticulum- Golgi intermediate compartment) followed by vesicle entry and secretion (PubMed:32272059).
Tissue Location	Lens as well as other tissues (PubMed:2387586, PubMed:838078). Expressed in myocardial tissue (PubMed:28493373)

Background

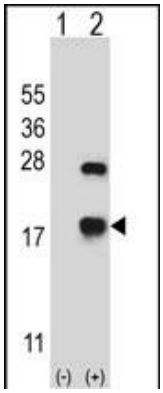
Crystallins are separated into two classes: taxon-specific, or enzyme, and ubiquitous. The latter class constitutes the major proteins of vertebrate eye lens and maintains the transparency and refractive index of the lens. Since lens central fiber cells lose their nuclei during development, these crystallins are made and then retained throughout life, making them extremely stable proteins. Mammalian lens crystallins are divided into alpha, beta, and gamma families; beta and gamma crystallins are also considered as a superfamily. Alpha and beta families are further divided into acidic and basic groups. Seven protein regions exist in crystallins: four homologous motifs, a connecting peptide, and N- and C-terminal extensions. Alpha crystallins are composed of two gene products: alpha-A and alpha-B, for acidic and basic, respectively. Alpha crystallins can be induced by heat shock and are members of the small heat shock protein (sHSP also known as the HSP20) family. They act as molecular chaperones although they do not renature proteins and release them in the fashion of a true chaperone; instead they hold them in large soluble aggregates. Post-translational modifications decrease the ability to chaperone. These heterogeneous aggregates consist of 30-40 subunits; the alpha-A and alpha-B subunits have a 3:1 ratio, respectively. Two additional functions of alpha crystallins are an autokinase activity and participation in the intracellular architecture. Alpha-A and alpha-B gene products are differentially expressed; alpha-A is preferentially restricted to the lens and alpha-B is expressed widely in many tissues and organs. Elevated expression of alpha-B crystallin occurs in many neurological diseases; a missense mutation cosegregated in a family with a desmin-related myopathy.

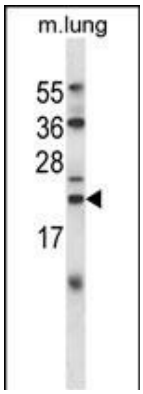
References

Martins-de-Souza, D., et al. J Psychiatr Res 44(14):989-991(2010)
Jehle, S., et al. Nat. Struct. Mol. Biol. 17(9):1037-1042(2010)
Kida, E., et al. J. Neuropathol. Exp. Neurol. 69(7):745-759(2010)
Deng, Y., et al. BMB Rep 43(6):432-437(2010)
Houck, S.A., et al. PLoS ONE 5 (7), E11795 (2010) :

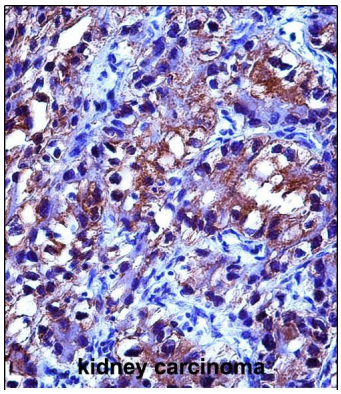
Images

Western blot analysis of CRYAB (arrow) using rabbit polyclonal CRYAB Antibody (Center) (Cat. #AP13697c). 293 cell lysates (2 ug/lane) either nontransfected (Lane 1) or transiently transfected (Lane 2) with the CRYAB gene.





CRYAB Antibody (Center) (Cat. #AP13697c) western blot analysis in mouse lung tissue lysates (35ug/lane).This demonstrates the CRYAB antibody detected the CRYAB protein (arrow).



CRYA Antibody (Center) (Cat. #AP13697c)immunohistochemistry analysis in formalin fixed and paraffin embedded human kidney carcinoma followed by peroxidase conjugation of the secondary antibody and DAB staining.This data demonstrates the use of CRYA Antibody (Center) for immunohistochemistry. Clinical relevance has not been evaluated.