

Product datasheet

Anti-alpha A Crystallin/CRYAA antibody ab5595

11 References 1 Image

Overview

<b>Product name</b>	Anti-alpha A Crystallin/CRYAA antibody
<b>Description</b>	Rabbit polyclonal to alpha A Crystallin/CRYAA
<b>Host species</b>	Rabbit
<b>Specificity</b>	This antibody is not expected to detect the non-phosphorylated form of the protein. Please contact our Scientific Support team for more information.
<b>Tested applications</b>	<b>Suitable for:</b> Sandwich ELISA, Blocking, IHC-P, WB
<b>Species reactivity</b>	<b>Reacts with:</b> Mouse, Rat, Cow <b>Predicted to work with:</b> Sheep, Rabbit, Horse, Guinea pig, Hamster, Cat, Dog, Human, Pig, Rhesus monkey, Elephant ▲
<b>Immunogen</b>	Full length native protein (purified) corresponding to Cow alpha A Crystallin/CRYAA (phospho ). Purified alpha-A Crystallin from bovine lens.
<b>General notes</b>	This product was previously labelled as alpha A Crystallin

Properties

<b>Form</b>	Liquid
<b>Storage instructions</b>	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C or -80°C. Avoid freeze / thaw cycle.
<b>Storage buffer</b>	Preservative: 0.05% Sodium azide Constituents: 99% PBS, 3% BSA
<b>Purity</b>	Immunogen affinity purified
<b>Primary antibody notes</b>	Lens proteins consist almost entirely of crystallins (about 95%). Crystallins are also found vertebrate skeletal muscle tissue. In the lens, their structural function is to assist in maintaining the proper refractive index of the lens. The mammalian lens contains 3 major classes of crystallins: alpha, beta, and gamma. Alpha-crystallin is the largest of the crystallins and is composed of 2 primary gene products--alpha-A and alpha-B. There are at least 5 different proteins comprising the beta-crystallins. The gamma-crystallins are monomeric, but there are at least 5 gamma crystallins identified in bovine and rat lens. Alpha-Crystallin comprises 40% of total lens protein composition. In addition to maintaining proper refractive index, it also functions in a chaperone like manner by preventing the formation of aggregates possibly leading to cataract formation. It is

believed that the phosphorylated states of the alpha-crystallin occur in response to cellular stress and may serve a structural control function and play a role in protein maintenance. Alpha-B crystallin has been linked to Alexander's disease where it accumulates in brain cells of those afflicted.

**Clonality** Polyclonal  
**Isotype** IgG

## Applications

Our [Abpromise guarantee](#) covers the use of **ab5595** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
Sandwich ELISA		Use at an assay dependent concentration. PubMed: 22359280
Blocking		Use at an assay dependent concentration. PubMed: 22359280
IHC-P		Use a concentration of 10 µg/ml.
WB		Use a concentration of 0.1 µg/ml. Detects a band of approximately 20 kDa.

## Target

**Function** May contribute to the transparency and refractive index of the lens.

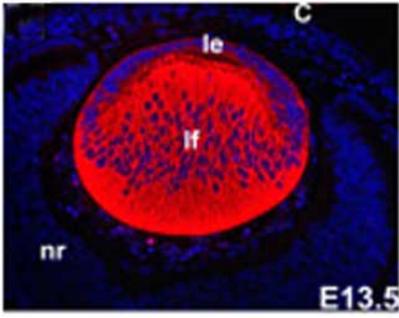
**Involvement in disease** Defects in CRYAA are a cause of cataract autosomal dominant (ADC) [MIM:604219]. Cataract is an opacification of the crystalline lens of the eye that frequently results in visual impairment or blindness. Opacities vary in morphology, are often confined to a portion of the lens, and may be static or progressive. In general, the more posteriorly located and dense an opacity, the greater the impact on visual function. Cataract is the most common treatable cause of visual disability in childhood.

**Sequence similarities** Belongs to the small heat shock protein (HSP20) family.

**Post-translational modifications** O-glycosylated; contains N-acetylglucosamine side chains. Deamidation of Asn-101 in lens occurs mostly during the first 30 years of age, followed by a small additional amount of deamidation (approximately 5%) during the next approximately 38 years, resulting in a maximum of approximately 50% deamidation during the lifetime of the individual. Phosphorylation on Ser-122 seems to be developmentally regulated. Absent in the first months of life, it appears during the first 12 years of human lifetime. The relative amount of phosphorylated form versus unphosphorylated form does not change over the lifetime of the individual.

**Cellular localization** Cytoplasm. Nucleus. Translocates to the nucleus during heat shock and resides in sub-nuclear structures known as SC35 speckles or nuclear splicing speckles.

## Images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-alpha A

Crystallin/CRYAA antibody (ab5595)

Image from Dr D Burgess et al, BMC Dev Biol. 2010 Jan 27;10:13, Fig 5.

ab5595 staining alpha A Crystallin/CRYAA in non-transgenic 13.5 mouse embryos by Immunohistochemistry (PFA fixed, paraffin embedded sections). Heads of mice were removed, fixed in 10% formalin, dehydrated, embedded in paraffin, sectioned (5-7  $\mu$ m). Slides containing ocular sections from non-transgenic embryos were first deparaffinized and rehydrated. Antigens were retrieved by microwave treatment in 10 mM Sodium Citrate buffer (pH 6.0). Following antigen retrieval, the tissue sections were blocked with 10% normal horse serum for 30 minutes, at room temperature. The slides were then incubated with ab5595 at a 1/10,000 dilution overnight at 4°C. Following brief washes in PBS, the slides were incubated with the appropriate biotinylated-secondary antibodies for 30 minutes at 37°C. Antigen-antibody complexes were then detected using streptavidin-linked Alexa 594 (red) at 1/1000 dilution. Sections were mounted using anti-fade media containing DAPI (blue). Images were captured using

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