

Product datasheet for **RC216946**

alpha A Crystallin (CRYAA) (NM_000394) Human Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	alpha A Crystallin (CRYAA) (NM_000394) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	alpha A Crystallin
Synonyms:	CRYA1; CTRCT9; HSPB4
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
ORF Nucleotide Sequence:	>RC216946 ORF sequence Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCC**CGATCGCC**

ATGGATGTGACCATCCAGCACCCCTGGTTCAAGCGCACCCCTGGGGCCCTTCTACCCAGCCGGCTGTTCTG
ACCAAGTTTTCGGCGAGGGCCTTTTGGATGATGACCTGCTGCCCTTCTGTCGTCCACCATCAGCCCTA
CTACCGCCAGTCCCTCTCCGACCGTGTGGACTCCGGCATCTCTGAGGTTCTGATCCGACCGGACAAG
TTCGTCATCTTCTCGATGTGAAGCACTTCTCCCGGAGGACCTACCGTGAAGGTGCAGGACGACTTTG
TGGAGATCCACGAAAGCACAACGAGCGCCAGGACGACCGGCTACATTCCCGTGAGTTCACCGCCG
CTACCGCCTGCCGTCCAACGTGGACGAGTCCGCCCTCTCTTGCTCCCTGTCTGCCGATGGCATGCTGACC
TTCTGTGGCCCCAAGATCCAGACTGGCCTGGATGCCACCCACGCCGAGCGAGCCATCCCCGTGTCGCGGG
AGGAGAAGCCACCTCGGCTCCCTCGTCC

ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence:	>RC216946 protein sequence Red=Cloning site Green=Tags(s)
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MDVTIQHPWFKRTLGPFPYPSRLFDQFFGEGLFEYDLLPFLSSTISPYRQSLFRTVLDSGISEVRSRDK
FVIFLDVKHFSPEDLTVKVQDDFVEIHGKHNERQDDHGYISREFHRRYRLPSNVDQSALSCSLADGMLT
FCGPKIQTGLDATHAERAIPVSREEKPTSAPSS

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

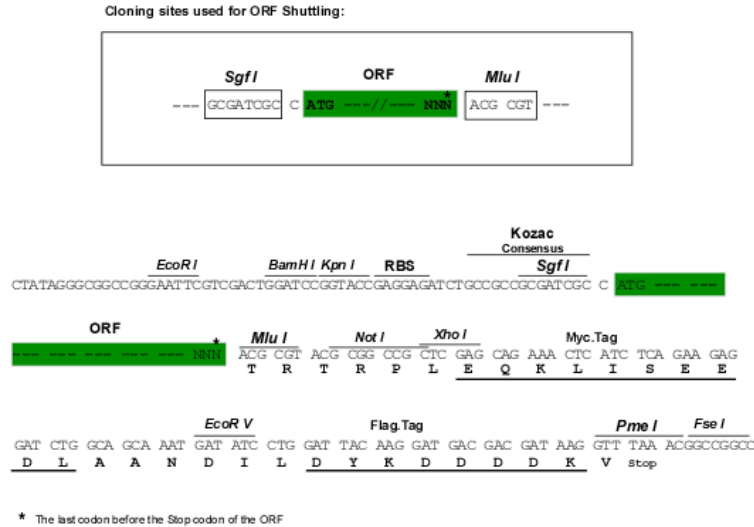
Chromatograms:	https://cdn.origene.com/chromatograms/mk6462_b09.zip
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Restriction Sites: SgfI-MluI

Cloning Scheme:



ACCN: NM_000394

ORF Size: 519 bp

OTI Disclaimer: The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in agreement with the reference, but a complete review of all prevailing variants is recommended prior to use. [More info](#)

OTI Annotation: This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.

Components: The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).

Reconstitution Method:

1. Centrifuge at 5,000xg for 5min.
2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.
3. Close the tube and incubate for 10 minutes at room temperature.
4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.
5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.

Note: Plasmids are not sterile. For experiments where strict sterility is required, filtration with 0.22um filter is required.

RefSeq: [NM_000394.4](#)

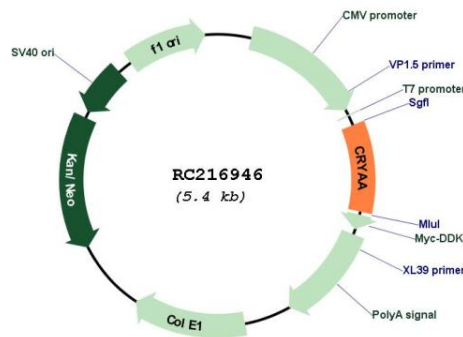
RefSeq Size: 1162 bp

RefSeq ORF: 522 bp

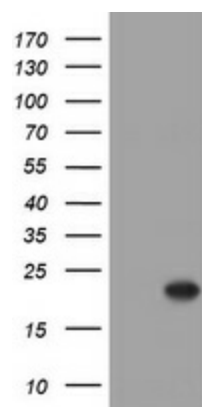
Locus ID: 1409
UniProt ID: [P02489](#)
Cytogenetics: 21q22.3
MW: 19.9 kDa

Gene Summary: Mammalian lens crystallins are divided into alpha, beta, and gamma families. 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 (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. The encoded protein has been identified as a moonlighting protein based on its ability to perform mechanistically distinct functions. 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. Defects in this gene cause autosomal dominant congenital cataract (ADCC). [provided by RefSeq, Jan 2014]

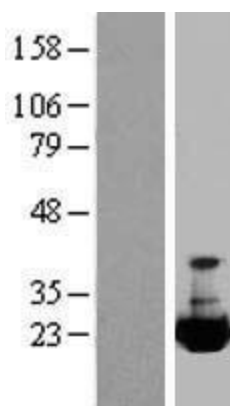
Product images:



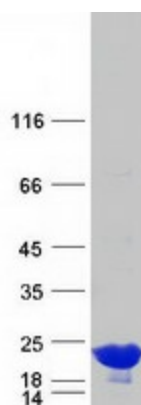
Circular map for RC216946



HEK293T cells were transfected with the pCMV6-ENTRY control (Cat# [PS100001], Left lane) or pCMV6-ENTRY CRYAA (Cat# RC216946, Right lane) cDNA for 48 hrs and lysed. Equivalent amounts of cell lysates (5 ug per lane) were separated by SDS-PAGE and immunoblotted with anti-CRYAA (Cat# [TA505453]). Positive lysates [LY424743] (100ug) and [LC424743] (20ug) can be purchased separately from OriGene.



Western blot validation of overexpression lysate (Cat# [LY424743]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from untransfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC216946 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).



Coomassie blue staining of purified CRYAA protein (Cat# [TP316946]). The protein was produced from HEK293T cells transfected with CRYAA cDNA clone (Cat# RC216946) using MegaTran 2.0 (Cat# [TT210002]).