abcam

Product datasheet

Anti-Aprataxin antibody ab154413

4 Images

Overview

Product name	Anti-Aprataxin antibody
Description	Rabbit polyclonal to Aprataxin
Host species	Rabbit
Tested applications	**Suitable for:** WB, IHC-P, ICC/IF
Species reactivity	**Reacts with:** Human **Predicted to work with:** Cow
Immunogen	Recombinant fragment, corresponding to a region within amino acids 1-356 of Human Aprataxin (Uniprot ID: Q7Z2E3)
Positive control	293T, A431, H1299, HepG2, MOLT4 and Raji cell lysates; HeLa cells; Human A549 xenograft tissue.
General notes	The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Upon delivery aliquot and store at -20°C or -80°C. Avoid repeated freeze / thaw cycles.
Storage buffer	pH: 7.00 Preservative: 0.01% Thimerosal (merthiolate) Constituents: 1.21% Tris, 0.75% Glycine, 10% Glycerol (glycerin, glycerine)
Purity	Immunogen affinity purified
Clonality	Polyclonal
Isotype	IgG

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab154413 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
WB		1/500 - 1/3000. Predicted molecular weight: 41 kDa.
IHC-P		1/100 - 1/1000. Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol. Antigen retrieval also possible using Tris-EDTA buffer (pH8.0).
ICC/IF		1/100 - 1/1000.

Target

Function DNA-binding protein involved in single-strand DNA break repair, double-strand DNA break repair and base excision repair. Resolves abortive DNA ligation intermediates formed either at base excision sites, or when DNA ligases attempt to repair non-ligatable breaks induced by reactive oxygen species. Catalyzes the release of adenylate groups covalently linked to 5'-phosphate termini, resulting in the production of 5'-phosphate termini that can be efficiently rejoined. Also able to hydrolyze adenosine 5'-monophosphoramidate (AMP-NH(2)) and diadenosine tetraphosphate (AppppA), but with lower catalytic activity.

Tissue specificity Widely expressed. In brain, it is expressed in the posterior cortex, cerebellum, hippocampus and olfactory bulb. Isoform 1 is highly expressed in the cerebral cortex and cerebellum, compared to isoform 2.

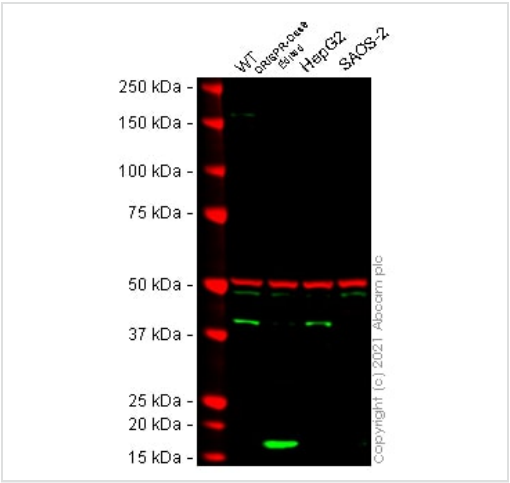
Involvement in disease Defects in APTX are the cause of ataxia-oculomotor apraxia syndrome (AOA) [MIM:208920]. AOA is an autosomal recessive syndrome characterized by early-onset cerebellar ataxia, oculomotor apraxia, early areflexia and late peripheral neuropathy.
Defects in APTX are a cause of coenzyme Q10 deficiency (COQ10D) [MIM:607426]. Coenzyme Q10 deficiency is an autosomal recessive disorder with variable manifestations. It can be associated with three main clinical phenotypes: a predominantly myopathic form with central nervous system involvement, an infantile encephalomyopathy with renal dysfunction and an ataxic form with cerebellar atrophy.

Sequence similarities Contains 1 C2H2-type zinc finger.
Contains 1 FHA-like domain.
Contains 1 HIT domain.

Domain The histidine triad, also called HIT motif, forms part of the binding loop for the alpha-phosphate of purine mononucleotide.
The FHA-like domain mediates interaction with NCL; XRCC1 and XRCC4.
The HIT domain is required for enzymatic activity.
The C2H2-type zinc finger mediates DNA-binding.

Cellular localization Nucleus > nucleoplasm. Nucleus > nucleolus. Upon genotoxic stress, colocalizes with XRCC1 at sites of DNA damage. Colocalizes with MDC1 at sites of DNA double-strand breaks. Interaction with NCL is required for nucleolar localization.

Images



Western blot - Anti-Aprataxin antibody (ab154413)

Lanes 1-2 & 4 : Anti-Aprataxin antibody (ab154413) at 1/500 dilution
Lane 3 : Anti-Aprataxin antibody (ab154413) at 1/1000 dilution

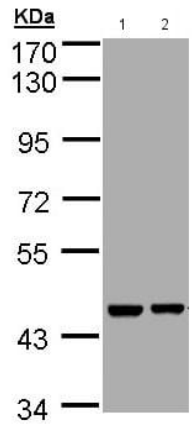
Lane 1 : Wild-type HeLa cell lysate
Lane 2 : APTX CRISPR-Cas9 edited HeLa cell lysate
Lane 3 : HepG2 cell lysate
Lane 4 : Saos-2 cell lysate

Lysates/proteins at 20 µg per lane.

Performed under reducing conditions.

Predicted band size: 41 kDa
Observed band size: 41 kDa

False colour image of Western blot: Anti-Aprataxin antibody staining at 1/500 dilution, shown in green; Mouse anti-Alpha Tubulin [DM1A] (**ab7291**) loading control staining at 1/20000 dilution, shown in red. In Western blot, ab154413 was shown to bind specifically to Aprataxin. A band was observed at 41 kDa in wild-type HeLa cell lysates with no signal observed at this size in APTX CRISPR-Cas9 edited cell line **ab265118** (CRISPR-Cas9 edited cell lysate **ab257837**). The band observed in the CRISPR-Cas9 edited lysate lane below 41 kDa is likely to represent a truncated form of Aprataxin. This has not been investigated further and the functional properties of the gene product have not been determined. To generate this image, wild-type and APTX CRISPR-Cas9 edited HeLa cell lysates were analysed. First, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 5 % milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed (**ab216773**) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed (**ab216776**) at 1/20000 dilution.



Western blot - Anti-Aprataxin antibody (ab154413)

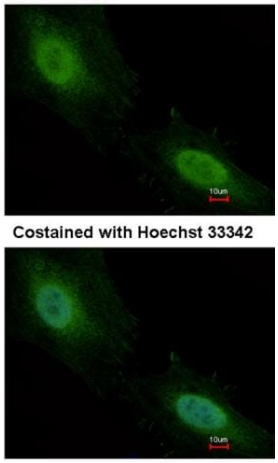
All lanes : Anti-Aprataxin antibody (ab154413) at 1/1000 dilution

Lane 1 : HeLa whole cell lysate
Lane 2 : HepG2 whole cell lysate

Lysates/proteins at 30 µg per lane.

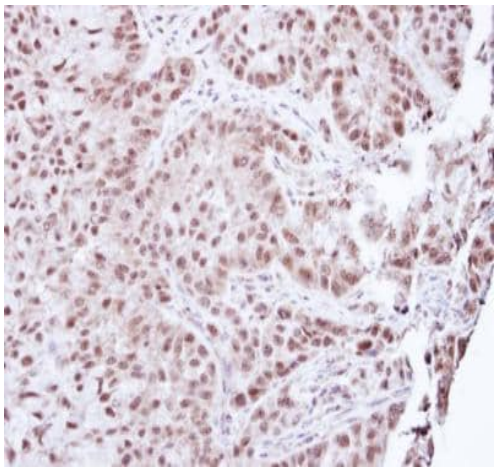
Predicted band size: 41 kDa

10% SDS PAGE



Immunocytochemistry/ Immunofluorescence - Anti-Aprataxin antibody (ab154413)

Immunofluorescence analysis of paraformaldehyde-fixed HeLa cells, labeling Aprataxin using ab154413 at a 1/500 dilution.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Aprataxin antibody (ab154413)

Immunohistochemical analysis of formalin-fixed, paraffin-embedded Human A549 xenograft tissue, labeling Aprataxin using ab154413 at a 1/100 dilution.

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