

Product datasheet

Anti-AIRE antibody ab65040

1 References 2 Images

Overview

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|----------------------------|--|
| Product name | Anti-AIRE antibody |
| Description | Rabbit polyclonal to AIRE |
| Host species | Rabbit |
| Specificity | ab65040 detects endogenous levels of total AIRE protein. |
| Tested applications | Suitable for: ELISA, ICC/IF, WB |
| Species reactivity | Reacts with: Human Predicted to work with: Mouse  |
| Immunogen | Synthetic peptide: KGRKPPAVPK ALVPPPRLPT KRKASEEARA AAPAALTPRG , corresponding to internal sequence amino acids 111-150 of Human AIRE Run BLAST with ExPASy Run BLAST with NCBI |
| Positive control | WB: 293 cell extracts. IF: HeLa cells. |

Properties

| | |
|-----------------------------|---|
| Form | Liquid |
| Storage instructions | Shipped at 4°C. Store at -20°C. Stable for 12 months at -20°C. |
| Storage buffer | pH: 7.40 Preservative: 0.02% Sodium azide Constituents: PBS, 50% Glycerol, 0.87% Sodium chloride Without Mg ²⁺ and Ca ²⁺ |
| Purity | Immunogen affinity purified |
| Purification notes | ab65040 was affinity purified from rabbit antiserum by affinity chromatography using epitope specific immunogen. |
| Clonality | Polyclonal |
| Isotype | IgG |

Applications

Our [Abpromise guarantee](#) covers the use of **ab65040** 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 |
|-------------|-----------|--|
| ELISA | | 1/20000. |
| ICC/IF | | 1/500 - 1/1000. |
| WB | | 1/500 - 1/1000. Detects a band of approximately 65 kDa (predicted molecular weight: 58 kDa). |

Target

Function

Transcriptional regulator that binds to DNA as a dimer or as a tetramer, but not as a monomer. Binds to G-doubelets in an A/T-rich environment; the preferred motif is a tandem repeat of 5'-ATTGGTTA-3' combined with a 5'-TTATTA-3' box. Binds to nucleosomes (By similarity). Binds to chromatin and interacts selectively with histone H3 that is not methylated at 'Lys-4', not phosphorylated at 'Thr-3' and not methylated at 'Arg-2'. Functions as a sensor of histone H3 modifications that are important for the epigenetic regulation of gene expression. Functions as a transcriptional activator and promotes the expression of otherwise tissue-specific self-antigens in the thymus, which is important for self tolerance and the avoidance of autoimmune reactions.

Tissue specificity

Widely expressed. Expressed at higher level in thymus (medullary epithelial cells and monocyte-dendritic cells), pancreas, adrenal cortex and testis. Expressed at lower level in the spleen, fetal liver and lymph nodes. Isoform 2 and isoform 3 seem to be less frequently expressed than isoform 1, if at all.

Involvement in disease

Defects in AIRE are a cause of autoimmune poly-endocrinopathy candidiasis ectodermal dystrophy (APECED) [MIM:240300]; also known as autoimmune polyglandular syndrome type 1 (APS-1). APECED is an autosomal recessive disease characterized by: (1) autoimmune polyendocrinopathies: hypoparathyroidism, adrenocortical failure, IDDM, gonadal failure, hypothyroidism, pernicious anemia, and hepatitis; (2) chronic mucocutaneous candidiasis; (3) ectodermal dystrophies: vitiligo, alopecia, keratopathy, dystrophy of dental enamel, nails and tympanic membranes. In addition, a high proportion of patients develop squamous cell carcinoma of the oral mucosa. The disease is reported worldwide but is exceptionally prevalent among the Finnish population (incidence 1:25000) and the Iranian jews (incidence 1:9000).

Note=Most of the mutations alter the nucleus-cytoplasm distribution of AIRE and disturb its association with nuclear dots and cytoplasmic filaments. Most of the mutations also decrease transactivation of the protein. The HSR domain is responsible for the homomultimerization activity of AIRE. All the missense mutations of the HSR and the SAND domains decrease this activity, but those in other domains do not. The AIRE protein is present in soluble high-molecular-weight complexes. Mutations in the HSR domain and deletion of PHD zinc fingers disturb the formation of these complexes.

Sequence similarities

Contains 1 HSR domain.
Contains 2 PHD-type zinc fingers.
Contains 1 SAND domain.

Domain

The L-X-X-L-L repeats may be implicated in binding to nuclear receptors.
The HSR domain is required for localization on tubular structures (N-terminal part) and for homodimerization.
Interacts via the first PHD domain with the N-terminus of histone H3 that is not methylated at 'Lys-4'. Disruption of the first PHD domain has been shown to lead to reduced transcriptional activity and to localization of the protein mainly in the cytoplasm in small granules. While the PHD zinc

fingers are necessary for the transactivation capacity of the protein, other regions also modulate this function.

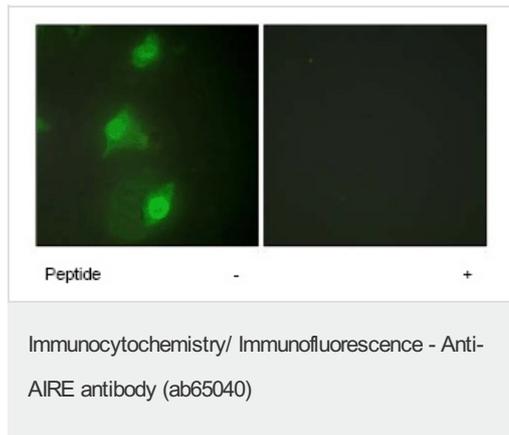
Post-translational modifications

Phosphorylated. Phosphorylation could trigger oligomerization.

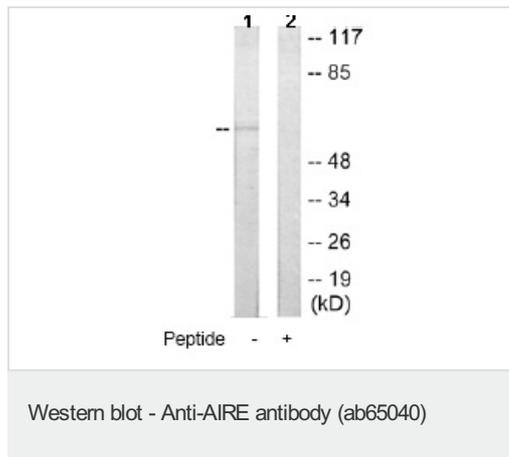
Cellular localization

Nucleus. Cytoplasm. Associated with tubular structures and in discrete nuclear dots resembling ND10 nuclear bodies. May shuttle between nucleus and cytoplasm.

Images



ab65040, at a 1/500 dilution, staining AIRE in HeLa cells by Immunofluorescence, in the absence or presence of the immunising peptide.



All lanes : Anti-AIRE antibody (ab65040) at 1/500 dilution

Lane 1 : 293 cell extract

Lane 2 : 293 cell extract with immunising peptide at 10 µg

Lysates/proteins at 5 µg per lane.

Predicted band size: 58 kDa

Observed band size: 65 kDa

[why is the actual band size different from the predicted?](#)

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