

# Anti-AIRE Picoband Antibody

Catalog # ABO12665

## Product Information

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| <b>Application</b>       | WB                                                                                                       |
| <b>Primary Accession</b> | <a href="#">O43918</a>                                                                                   |
| <b>Host</b>              | Rabbit                                                                                                   |
| <b>Reactivity</b>        | Human, Rat                                                                                               |
| <b>Clonality</b>         | Polyclonal                                                                                               |
| <b>Format</b>            | Lyophilized                                                                                              |
| <b>Description</b>       | Rabbit IgG polyclonal antibody for Autoimmune regulator(AIRE) detection.<br>Tested with WB in Human;Rat. |

**Reconstitution** Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

## Additional Information

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| <b>Gene ID</b>                  | 326                                                                                                                                                                                                                                                                                                                |
| <b>Other Names</b>              | Autoimmune regulator, Autoimmune polyendocrinopathy candidiasis ectodermal dystrophy protein, APECED protein, AIRE, APECED                                                                                                                                                                                         |
| <b>Calculated MW</b>            | 57727                                                                                                                                                                                                                                                                                                              |
| <b>Application Details</b>      | Western blot, 0.1-0.5 µg/ml, Human, Rat                                                                                                                                                                                                                                                                            |
| <b>Subcellular Localization</b> | Nucleus. Cytoplasm. Associated with tubular structures and in discrete nuclear dots resembling ND10 nuclear bodies. May shuttle between nucleus and cytoplasm.                                                                                                                                                     |
| <b>Tissue Specificity</b>       | 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. |
| <b>Source</b>                   | Eukaryota                                                                                                                                                                                                                                                                                                          |
| <b>Protein Name</b>             | Autoimmune regulator                                                                                                                                                                                                                                                                                               |
| <b>Contents</b>                 | Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na <sub>2</sub> HPO <sub>4</sub> , 0.05mg NaN <sub>3</sub> .                                                                                                                                                                                                         |
| <b>Immunogen</b>                | E.coli-derived human AIRE recombinant protein (Position: M1-K120). Human AIRE shares 87.2% amino acid (aa) sequence identity with mouse AIRE.                                                                                                                                                                      |
| <b>Purification</b>             | Immunogen affinity purified.                                                                                                                                                                                                                                                                                       |
| <b>Cross Reactivity</b>         | No cross reactivity with other proteins.                                                                                                                                                                                                                                                                           |

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| <b>Storage</b> | At -20° C for one year. After r° Constitution, at 4° C for one month. It° Can also be aliquotted and stored frozen at -20° C for a longer time.Avoid repeated freezing and thawing. |
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## Protein Information

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| <b>Name</b>              | AIRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Synonyms</b>          | APECED                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Function</b>          | <p>Transcription factor playing an essential role to promote self-tolerance in the thymus by regulating the expression of a wide array of self-antigens that have the commonality of being tissue- restricted in their expression pattern in the periphery, called tissue restricted antigens (TRA) (PubMed:<a href="#">26084028</a>). Binds to G-doublets 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. Mainly expressed by medullary thymic epithelial cells (mTECs), induces the expression of thousands of tissue-restricted proteins, which are presented on major histocompatibility complex class I (MHC-I) and MHC-II molecules to developing T-cells percolating through the thymic medulla (PubMed:<a href="#">26084028</a>). Also induces self- tolerance through other mechanisms such as the regulation of the mTEC differentiation program. Controls the medullary accumulation of thymic dendritic cells and the development of regulatory T-cell through the regulation of XCL1 expression. Regulates the production of CCR4 and CCR7 ligands in medullary thymic epithelial cells and alters the coordinated maturation and migration of thymocytes. In thimic B-cells, allows the presentation of licensing-dependent endogenous self-anitgen for negative selection. In secondary lymphoid organs, induces functional inactivation of CD4(+) T-cells. Expressed by a distinct bone marrow-derived population, induces self-tolerance through a mechanism that does not require regulatory T-cells and is resitant to innate inflammatory stimuli (By similarity).</p> |
| <b>Cellular Location</b> | <p>Nucleus. Cytoplasm. Note=Predominantly nuclear but also cytoplasmic (PubMed:11274163, PubMed:14974083). Found in nuclear body- like structures (dots) and in a filamentous vimentin-like pattern (PubMed:11274163, PubMed:14974083, PubMed:26084028). Associated with tubular structures (PubMed:11274163, PubMed:14974083)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Tissue Location</b>   | <p>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. In secondary lymphoid organs, expressed in a discrete population of bone marrow-derived toleregenic antigen presenting cells (APCs) called extrathymic AIRE expressing cells (eTAC)(at protein level) (PubMed:23993652). Isoform 2 and isoform 3 seem to be less frequently expressed than isoform 1, if at all</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

## Background

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The autoimmune regulator (AIRE) is a protein that in humans is encoded by the AIRE gene. This gene encodes a transcriptional regulator that forms nuclear bodies and interacts with the transcriptional coactivator CREB binding protein. The encoded protein plays an important role in immunity by regulating the expression of autoantigens and negative selection of autoreactive T-cells in the thymus. Mutations in this gene cause the rare autosomal-recessive systemic autoimmune disease termed autoimmune

polyendocrinopathy with candidiasis and ectodermal dystrophy (APECED).

## Images

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Western blot analysis of AIRE expression in rat testis extract (lane 1) and HELA whole cell lysates (lane 2). AIRE at 58KD was detected using rabbit anti- AIRE Antigen Affinity purified polyclonal antibody (Catalog # ABO12665) at 0.5 µg/mL. The blot was developed using chemiluminescence (ECL) method .

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