SANTA CRUZ BIOTECHNOLOGY, INC.

AIRE-1 (M-300): sc-33189

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The autoimmune regulator gene, which is defective in the hereditary autoimmune disease APECED, encodes the transcriptional activator AIRE-1. AIRE-1 is expressed in the medullary epithelial cells and monocyte-dendritic cells of the thymus, with lower expression in the spleen, fetal liver and lymph nodes. In adult tissue, AIRE-1 expression in the thymus is confined to the medulla and the cortico-medullary junction, where it is modulated by thymocytes undergoing negative selection. At the cellular level, AIRE-1 is located in microtubular structures of the cytoskeleton and in discrete nuclear dots resembling ND10 nuclear bodies. AIRE-1 is induced by developing early thymocytes and is associated with the correct establishment of a regular thymic environment. AIRE-1 regulates thymic architecture via transcriptional control of downstream target genes. AIRE-1 mutations in APECED patients may affect thymic T cell selection and the formation of self-tolerance.

CHROMOSOMAL LOCATION

Genetic locus: AIRE (human) mapping to 21q22.3; Aire (mouse) mapping to 10 C1.

SOURCE

AIRE-1 (M-300) is a rabbit polyclonal antibody raised against amino acids 253-552 mapping at the C-terminus of AIRE-1 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

AIRE-1 (H-300) is recommended for detection of all AIRE-1 isoforms of mouse, rat and, to a lesser extent, human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for AIRE-1 siRNA (h): sc-37669, AIRE-1 siRNA (m): sc-37670, AIRE-1 shRNA Plasmid (h): sc-37669-SH, AIRE-1 shRNA Plasmid (m): sc-37670-SH, AIRE-1 shRNA (h) Lentiviral Particles: sc-37669-V and AIRE-1 shRNA (m) Lentiviral Particles: sc-37670-V.

Molecular Weight (predicted) of AIRE-1: 55 kDa.

Molecular Weight (observed) of AIRE-1: 55/61 kDa.

Positive Controls: mouse thymus extract: sc-2406 or rat thymus extract: sc-2401.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

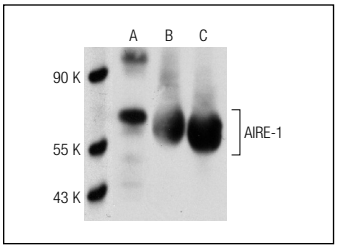
PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

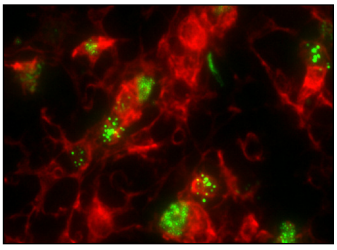
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



AIRE-1 (M-300): sc-33189. Western blot analysis of AIRE-1 expression in MIA PaCa-2 whole cell lysate (**A**) and mouse thymus (**B**) and rat thymus (**C**) tissue extracts.



AIRE-1 (M-300): sc-33189. Mouse thymus; Aire Green, Keratin 8 Red. Frozen section fixed with paraformaldehyde and subjected to tris antigen retrieval. Also works with acetone fixation or formalin fixed, paraffin sections subjected to antigen retrieval. No staining of aldehyde-fixed tissue without retrieval. Kindly provided by A.G. Farr, University of Washington, and M.C. Zúñiga University of California Santa Cruz.

SELECT PRODUCT CITATIONS

1. Dooley, J., et al. 2008. Alterations of the medullary epithelial compartment in the AIRE-deficient thymus: implications for programs of thymic epithelial differentiation. J. Immunol. 181: 5225-5232.
2. Sultana, D.A., et al. 2009. Gene expression profile of the third pharyngeal pouch reveals role of mesenchymal MafB in embryonic thymus development. Blood 113: 2976-2987.
3. Dooley, J., et al. 2009. Lessons from thymic epithelial heterogeneity: FoxN1 and tissue-restricted gene expression by extrathymic, endodermally derived epithelium. J. Immunol. 183: 5042-5049.
4. Bonfanti, P., et al. 2010. Microenvironmental reprogramming of thymic epithelial cells to skin multipotent stem cells. Nature 466: 978-982.
5. Guo, J., et al. 2011. Morphogenesis and maintenance of the 3D thymic medulla and prevention of nude skin phenotype require FoxN1 in pre- and post-natal K14 epithelium. J. Mol. Med. 89: 263-277.