

AIRE-1 (C-2): sc-373703

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 cyto-skeleton 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 (C-2) is a mouse monoclonal antibody raised against amino acids 246-545 mapping at the C-terminus of Aire-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

AIRE-1 (C-2) is available conjugated to agarose (sc-373703 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-373703 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-373703 PE), fluorescein (sc-373703 FITC), Alexa Fluor[®] 488 (sc-373703 AF488), Alexa Fluor[®] 546 (sc-373703 AF546), Alexa Fluor[®] 594 (sc-373703 AF594) or Alexa Fluor[®] 647 (sc-373703 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-373703 AF680) or Alexa Fluor[®] 790 (sc-373703 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

AIRE-1 (C-2) is recommended for detection of Aire-1 isoforms 1, 2 and 3 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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), immunohistochemistry (including paraffin-embedded sections) (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.

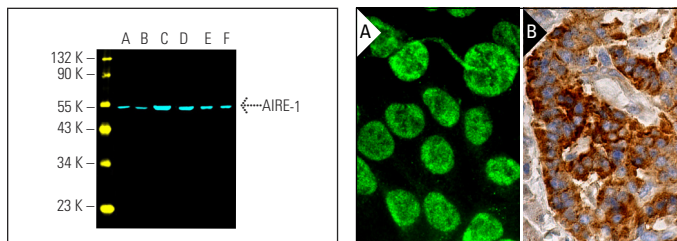
Molecular Weight (observed) of Aire-1: 55/61 kDa.

Positive Controls: U-251-MG whole cell lysate: sc-364176.

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 (C-2) Alexa Fluor[®] 647: sc-373703 AF647. Direct fluorescent western blot analysis of Aire-1 expression in MIA PaCa-2 (A), U-251-MG (B), SW-13 (C) and F9 (D) whole cell lysates and A-431 (E) and Jurkat (F) nuclear extracts. Blocked with UltraCruz[®] Blocking Reagent: sc-516214. Cruz Marker[™] Molecular Weight Standards detected with Cruz Marker[™] MW Tag-Alexa Fluor[®] 488: sc-516790.

AIRE-1 (C-2): sc-373703. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of Islets of Langerhans and glandular cells (B).

SELECT PRODUCT CITATIONS

- Bianchi, F., et al. 2016. Expression and prognostic significance of the autoimmune regulator gene in breast cancer cells. *Cell Cycle* 15: 3220-3229.
- de Albuquerque, J.A.T., et al. 2018. The role of Aire in the immunity against *Candida albicans* in a model of human macrophages. *Front. Immunol.* 9: 567.
- Speck-Hernandez, C.A., et al. 2018. Aire disruption influences the medullary thymic epithelial cell transcriptome and interaction with thymocytes. *Front. Immunol.* 9: 964.
- Melo-Lima, B.L., et al. 2019. The autoimmune regulator (Aire) transactivates HLA-G gene expression in thymic epithelial cells. *Immunology* 158: 121-135.
- Nguyen, C.T.K., et al. 2020. Aire is induced in oral squamous cell carcinoma and promotes cancer gene expression. *PLoS ONE* 15: e0222689.
- Kim, J.Y., et al. 2020. Promoter methylation changes in ALOX12 and Aire1: novel epigenetic markers for atherosclerosis. *Clin. Epigenetics* 12: 66.
- Li, J.H., et al. 2021. Curcumin protects thymus against D-galactose-induced senescence in mice. *Naunyn-Schmiedeberg's Arch. Pharmacol.* 394: 411-420.
- Padmanabhan, R.A., et al. 2023. Autoimmune regulator (Aire): takes a hypoxia-inducing factor 1A (HIF1A) route to regulate FOXP3 expression in PCOS. *Am. J. Reprod. Immunol.* 89: e13637.

RESEARCH USE

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

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