SANTA CRUZ BIOTECHNOLOGY, INC.

DUOX2 (E-8): sc-398681

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Dual oxidase 1 (DUOX1), a homolog of glycoprotein p91phox, is expressed in airway epithelium and generates reactive oxygen species (ROS). Dual oxidase 2 (DUOX2), also designated NADPH thyroid oxidase 2, p138 thyroid oxidase or large NOX2, localizes to the apical membrane of epithelial cells. DUOX1, also designated NADPH thyroid oxidase or large NOX1, and DUOX2 are multi-pass membrane proteins predominantly expressed in thyrocytes, tracheal surface epithelial cells as well as thyroid, colon, duodenum, trachea and bronchium. DUOX1 and DUOX2 generate hydrogen peroxide, which is crucial for thyroid peroxidase and lactoperoxidase. In mucosa, DUOX proteins are involved in thyroid hormone biosynthesis and lactoperoxidase-mediated antimicrobial defense. Defects in the gene encoding for DUOX2 cause congenital hypothyroidism (CH), a disorder characterized by a defect in hydrogen peroxide production in the thyroid gland.

CHROMOSOMAL LOCATION

Genetic locus: DUOX2 (human) mapping to 15q21.1; Duox2 (mouse) mapping to 2 E5.

SOURCE

DUOX2 (E-8) is a mouse monoclonal antibody raised against amino acids 626-680 mapping within a cytoplasmic domain of DUOX2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

DUOX2 (E-8) is available conjugated to agarose (sc-398681 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-398681 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398681 PE), fluorescein (sc-398681 FITC), Alexa Fluor® 488 (sc-398681 AF488), Alexa Fluor® 546 (sc-398681 AF546), Alexa Fluor® 594 (sc-398681 AF594) or Alexa Fluor® 647 (sc-398681 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398681 AF680) or Alexa Fluor® 790 (sc-398681 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

DUOX2 (E-8) is recommended for detection of DUOX2 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for DUOX2 siRNA (h): sc-60552, DUOX2 siRNA (m): sc-60553, DUOX2 shRNA Plasmid (h): sc-60552-SH, DUOX2 shRNA Plasmid (m): sc-60553-SH, DUOX2 shRNA (h) Lentiviral Particles: sc-60552-V and DUOX2 shRNA (m) Lentiviral Particles: sc-60553-V.

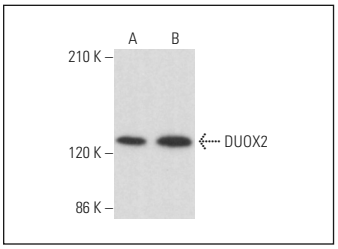
Molecular Weight of DUOX2: 175 kDa.

Positive Controls: A549 cell lysate: sc-2413 or CCRF-CEM cell lysate: sc-2225.

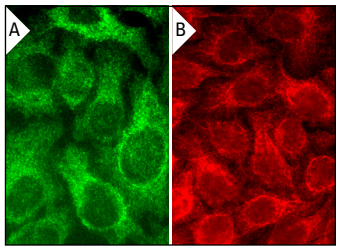
STORAGE

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

DATA



DUOX2 (E-8): sc-398681. Western blot analysis of DUOX2 expression in A549 (**A**) and CCRF-CEM (**B**) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.



DUOX2 (E-8): sc-398681. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization. Detection reagent used: m-IgGκ BP-CFL 555: sc-516177 (**B**).

SELECT PRODUCT CITATIONS

1. Krick, S., et al. 2016. Dual oxidase 2 (DUOX2) regulates pannexin 1-mediated ATP release in primary human airway epithelial cells via changes in intracellular pH and not H_2O_2 production. J. Biol. Chem. 291: 6423-6432.
2. de Bari, L., et al. 2018. Aberrant GSH reductase and NOX activities concur with defective CFTR to pro-oxidative imbalance in cystic fibrosis airways. J. Bioenerg. Biomembr. 50: 117-129.
3. Diebold, B.A., et al. 2019. Guidelines for the detection of NADPH oxidases by immunoblot and RT-qPCR. Methods Mol. Biol. 1982: 191-229.
4. Gibson, A.R., et al. 2020. Dual oxidase-induced sustained generation of hydrogen peroxide contributes to pharmacological ascorbate-induced cytotoxicity. Cancer Res. 80: 1401-1413.
5. Yang, M., et al. 2021. A truncated protein product of the germline variant of the DUOX2 gene leads to adenomatous polyposis. Cancer Biol. Med. 18: 215-226.
6. Cao, M., et al. 2021. DUOX2 as a potential prognostic marker which promotes cell motility and proliferation in pancreatic cancer. Biomed Res. Int. 2021: 6530298.
7. Lai, K.K.Y., et al. 2021. p300 serine 89: a critical signaling integrator and its effects on intestinal homeostasis and repair. Cancers 13: 1288.
8. Wang, B., et al. 2021. TLR4-dependent DUOX2 activation triggered oxidative stress and promoted HMGB1 release in dry eye. Front. Med. 8: 781616.

RESEARCH USE

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