

DUOX1 (C-15): sc-48856

BACKGROUND

Dual oxidase 1 (DUOX1), a homolog of glycoprotein p91Phox, is expressed in airway epithelium and generates reactive oxygen species (ROS). DUOX1, also designated NADPH thyroid oxidase or large NOX1, is a multi-pass membrane protein predominantly expressed in thyrocytes and tracheal surface epithelial cells, as well as thyroid, trachea and bronchium. DUOX1 generates hydrogen peroxide, which is crucial for thyroid peroxidase and lactoperoxidase. It is also involved in thyroid hormone synthesis and lactoperoxidase-mediated antimicrobial defense in mucosa. DUOX1, which also plays a role in mucin expression, is widely expressed in fetal tissues.

REFERENCES

1. De Deken, X., Wang, D., Dumont, J.E. and Miot, F. 2002. Characterization of ThOX proteins as components of the thyroid H₂O₂-generating system. *Exp. Cell Res.* 273: 187-196.
2. Geiszt, M., Witta, J., Baffi, J., Lekstrom, K. and Leto, T.L. 2003. Dual oxidases represent novel hydrogen peroxide sources supporting mucosal surface host defense. *FASEB J.* 17: 1502-1504.
3. Wong, J.L., Creton, R. and Wessel, G.M. 2004. The oxidative burst at fertilization is dependent upon activation of the dual oxidase UDX1. *Dev. Cell* 7: 801-814.
4. Harper, R.W., Xu, C., Eiserich, J.P., Chen, Y., Kao, C.Y., Thai, P., Setiadi, H. and Wu, R. 2005. Differential regulation of dual NADPH oxidases/peroxidases, DUOX1 and DUOX2, by Th1 and Th2 cytokines in respiratory tract epithelium. *FEBS Lett.* 579: 4911-4917.
5. Wang, D., De Deken, X., Milenkovic, M., Song, Y., Pirson, I., Dumont, J.E. and Miot, F. 2005. Identification of a novel partner of DUOX: EFP1, a thioredoxin-related protein. *J. Biol. Chem.* 280: 3096-3103.
6. Ameziane-El-Hassani, R., Morand, S., Boucher, J.L., Frapart, Y.M., Apostolou, D., Agnandji, D., Gnidehou, S., Ohayon, R., Noël-Hudson, M.S., Francon, J., Lalaoui, K., Virion, A. and Dupuy, C. 2005. Dual oxidase 2 has an intrinsic Ca²⁺-dependent H₂O₂-generating activity. *J. Biol. Chem.* 280: 30046-30054.
7. Forteza, R., Salathe, M., Miot, F., Forteza, R. and Conner, G.E. 2005. Regulated hydrogen peroxide production by DUOX in human airway epithelial cells. *Am. J. Respir. Cell Mol. Biol.* 32: 462-469.
8. He, H., Olesnanik, K., Nagy, R., Liyanarachchi, S., Prasad, M.L., Stratakis, C.A., Kloos, R.T. and de la Chapelle, A. 2005. Allelic variation in gene expression in thyroid tissue. *Thyroid* 15: 660-667.
9. Shao, M.X. and Nadel, J.A. 2005. Dual oxidase 1-dependent MUC5AC mucin expression in cultured human airway epithelial cells. *Proc. Natl. Acad. Sci. USA* 102: 767-772.

CHROMOSOMAL LOCATION

Genetic locus: DUOX1 (human) mapping to 15q21.1; Duox1 (mouse) mapping to 2 E5.

RESEARCH USE

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

SOURCE

DUOX1 (C-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of DUOX1 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-48856 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

DUOX1 (C-15) is recommended for detection of DUOX1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500); may cross-react with DUOX2.

DUOX1 (C-15) is also recommended for detection of DUOX1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for DUOX1 siRNA (h): sc-60650, DUOX1 siRNA (m): sc-60651, DUOX1 shRNA Plasmid (h): sc-60650-SH, DUOX1 shRNA Plasmid (m): sc-60651-SH, DUOX1 shRNA (h) Lentiviral Particles: sc-60650-V and DUOX1 shRNA (m) Lentiviral Particles: sc-60651-V.

Molecular Weight of non-glycosylated DUOX1: 150 kDa.

Molecular Weight of glycosylated DUOX1: 165 kDa.

Positive Controls: Mv 1 Lu cell lysate: sc-3810 or A549 cell lysate: sc-2413.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

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



Try **DUOX1 (H-9): sc-393096**, our highly recommended monoclonal alternative to DUOX1 (C-15).