

# DUOX2 (H-55): sc-134441

## 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.

## REFERENCES

1. Geiszt, M., et al. 2003. Dual oxidases represent novel hydrogen peroxide sources supporting mucosal surface host defense. *FASEB J.* 17: 1502-1504.
2. Vigone, M.C., et al. 2005. Persistent mild hypothyroidism associated with novel sequence variants of the DUOX2 gene in two siblings. *Hum. Mutat.* 26: 395.
3. Harper, R.W., et al. 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.
4. Wang, D., et al. 2005. Identification of a novel partner of DUOX: EFP1, a thioredoxin-related protein. *J. Biol. Chem.* 280: 3096-3103.
5. Ameziane-El-Hassani, R., et al. 2005. Dual oxidase 2 has an intrinsic Ca<sup>2+</sup>-dependent H<sub>2</sub>O<sub>2</sub>-generating activity. *J. Biol. Chem.* 280: 30046-30054.
6. El Hassani, R.A., et al. 2005. Dual oxidase 2 is expressed all along the digestive tract. *Am. J. Physiol. Gastrointest. Liver Physiol.* 288: G933-G942.

## CHROMOSOMAL LOCATION

Genetic locus: DUOX2 (human) mapping to 15q21.1.

## SOURCE

DUOX2 (H-55) is a rabbit polyclonal antibody raised against amino acids 626-680 mapping within a cytoplasmic domain of DUOX2 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.

## STORAGE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

## APPLICATIONS

DUOX2 (H-55) is recommended for detection of DUOX2 (Dual oxidase 2) of 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).

Molecular Weight of DUOX2: 175 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## RESEARCH USE

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



Try **DUOX2 (E-8): sc-398681**, our highly recommended monoclonal alternative to DUOX2 (H-55).