

DUOXA2 (N-18): sc-82868

BACKGROUND

DUOXA2 (dual oxidase maturation factor 2) is a 320 amino acid multi-pass membrane protein that localizes to the endoplasmic reticulum (ER) and belongs to the DUOXA family. Expressed specifically in thyroid and salivary glands, DUOXA2 is essential for the maturation and transport of DUOX2 from the ER to the plasma membrane and is also thought to play a role in the synthesis of thyroid hormone (TH). Defects in the DUOXA2 gene are associated with the pathogenesis of congenital hypothyroidism, a disorder that affects infants and is characterized by a significant decrease or a complete deficiency of TH from birth. The gene encoding DUOXA2 maps to human chromosome 15, which houses over 700 genes and comprises nearly 3% of the human genome. Angelman syndrome, Prader-Willi syndrome, Tay-Sachs disease and Marfan syndrome are all associated with defects in chromosome 15-localized genes.

REFERENCES

- Grasberger, H. and Refetoff, S. 2006. Identification of the maturation factor for dual oxidase. Evolution of an eukaryotic operon equivalent. *J. Biol. Chem.* 281: 18269-18272.
- Moreno, J.C. and Visser, T.J. 2007. New phenotypes in thyroid dysmorphogenesis: hypothyroidism due to DUOX2 mutations. *Endocr. Dev.* 10: 99-117.
- Grasberger, H., De Deken, X., Miot, F., Pohlenz, J. and Refetoff, S. 2007. Missense mutations of dual oxidase 2 (DUOX2) implicated in congenital hypothyroidism have impaired trafficking in cells reconstituted with DUOX2 maturation factor. *Mol. Endocrinol.* 21: 1408-1421.
- Luxen, S., Belinsky, S.A. and Knaus, U.G. 2008. Silencing of DUOX NADPH oxidases by promoter hypermethylation in lung cancer. *Cancer Res.* 68: 1037-1045.
- Zamproni, I., Grasberger, H., Cortinovis, F., Vigone, M.C., Chiumello, G., Mora, S., Onigata, K., Fugazzola, L., Refetoff, S., Persani, L. and Weber, G. 2008. Biallelic inactivation of the dual oxidase maturation factor 2 (DUOXA2) gene as a novel cause of congenital hypothyroidism. *J. Clin. Endocrinol. Metab.* 93: 605-610.
- Morand, S., Ueyama, T., Tsujibe, S., Saito, N., Korzeniowska, A. and Leto, T.L. 2008. DUOX maturation factors form cell surface complexes with DUOX affecting the specificity of reactive oxygen species generation. *FASEB J.* 23: 1205-1218.
- Rigutto, S., Hoste, C., Grasberger, H., Milenkovic, M., Communi, D., Dumont, J.E., Corvilain, B., Miot, F. and De Deken, X. 2009. Activation of dual oxidases (DUOX1 and DUOX2): Differential regulation mediated by PKA and PKC-dependent phosphorylation. *J. Biol. Chem.* 284: 6725-6734.

CHROMOSOMAL LOCATION

Genetic locus: DUOXA2 (human) mapping to 15q21.1; Duoxa2 (mouse) mapping to 2 E5.

SOURCE

DUOXA2 (N-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an N-terminal extracellular domain of DUOXA2 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-82868 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

DUOXA2 (N-18) is recommended for detection of DUOXA2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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); non cross-reactive with family member DUOXA1.

DUOXA2 (N-18) is also recommended for detection of DUOXA2 in additional species, including equine and bovine.

Suitable for use as control antibody for DUOXA2 siRNA (h): sc-77194, DUOXA2 siRNA (m): sc-77195, DUOXA2 shRNA Plasmid (h): sc-77194-SH, DUOXA2 shRNA Plasmid (m): sc-77195-SH, DUOXA2 shRNA (h) Lentiviral Particles: sc-77194-V and DUOXA2 shRNA (m) Lentiviral Particles: sc-77195-V.

Molecular Weight of DUOXA2: 35 kDa.

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.

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.