

DIO1 (E-16): sc-69382

BACKGROUND

DIO1 (deiodinase, iodothyronine, type I), also known as TXDI1, ITDI1 or 5DI, is a 249 amino acid single-pass membrane protein that localizes to the endoplasmic reticulum and belongs to the iodothyronine deiodinase family. Expressed as nine alternatively spliced isoforms, DIO1 functions as a thiol-dependent propylthiouracil-sensitive oxidoreductase that converts the prohormone thyroxine (T4) to bioactive 3,3',5-triiodothyronine (T3), thereby playing a role in thyroid hormone (TH) activation. Human DIO1 shares 88% sequence similarity with its rat counterpart, suggesting a conserved role between species. The gene encoding DIO1 maps to human chromosome 1, which spans 260 million base pairs, contains over 3,000 genes and comprises nearly 8% of the human genome.

REFERENCES

- Mandel, S.J., et al. 1992. Cloning and *in vitro* expression of the human selenoprotein, type I iodothyronine deiodinase. *J. Clin. Endocrinol. Metab.* 75: 1133-1139.
- Moreno, M., et al. 1994. Activation and inactivation of thyroid hormone by type I iodothyronine deiodinase. *FEBS Lett.* 344: 143-146.
- Toyoda, N., et al. 1995. Topological analysis of the integral membrane protein, type 1 iodothyronine deiodinase (D1). *J. Biol. Chem.* 270: 12310-12318.
- Curcio-Morelli, C., et al. 2003. *In vivo* dimerization of types 1, 2, and 3 iodothyronine selenodeiodinases. *Endocrinology* 144: 937-946.
- Arnaldi, L.A., et al. 2005. Gene expression profiles reveal that DCN, DIO1, and DIO2 are underexpressed in benign and malignant thyroid tumors. *Thyroid* 15: 210-221.

CHROMOSOMAL LOCATION

Genetic locus: Dio1 (mouse) mapping to 4 C7.

SOURCE

DIO1 (E-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of DIO1 of mouse 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-69382 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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 or our catalog for detailed protocols and support products.

APPLICATIONS

DIO1 (E-16) is recommended for detection of DIO1 of mouse and rat 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).

Suitable for use as control antibody for DIO1 siRNA (m): sc-77147, DIO1 shRNA Plasmid (m): sc-77147-SH and DIO1 shRNA (m) Lentiviral Particles: sc-77147-V.

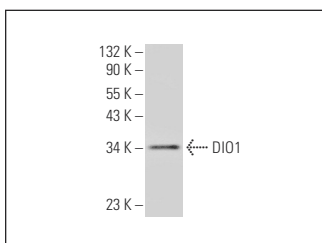
Molecular Weight of DIO1: 28 kDa.

Positive Controls: c4 whole cell lysate: sc-364186.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



DIO1 (E-16): sc-69382. Western blot analysis of DIO1 expression in c4 whole cell lysate.

RESEARCH USE

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