

# DIO3 (A-19): sc-69388

## BACKGROUND

DIO3 (deiodinase, iodothyronine, type III), also known as D3, 5DIII, TXDI3 or DIOIII, is a single-pass type II membrane protein that belongs to the iodothyronine deiodinase family of proteins. Members of the iodothyronine deiodinase family play an important role in thyroid hormone metabolism. Expressed in placenta and various fetal tissues, DIO3 localizes to the cell membrane and plays an important role regulating the activity of thyroid hormones during morphogenesis. More specifically, DIO3 functions as the major physiologic inactivator of thyroid hormones, catalyzing the inner-ring deiodination (the removal of iodine groups) of 3,5,3',5'-tetraiodothyronine (T4) and 3,5,3'-triiodothyronine (T3) to their inactive metabolites 3,3',5'-triiodothyronine (RT3 or reverse T3) and 3,3'-diiodothyronine (T2), respectively. Through its ability to inactivate thyroid hormones, DIO3 effects thermoregulation, gene expression and energy metabolism, as well as a number of other important reactions in cell maintenance and differentiation.

## REFERENCES

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- Hernandez, A., et al. 2007. Gene expression from the imprinted DIO3 locus is associated with cell proliferation of cultured brown adipocytes. *Endocrinology* 148: 3968-3976.
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## CHROMOSOMAL LOCATION

Genetic locus: DIO3 (human) mapping to 14q32.31; Dio3 (mouse) mapping to 12 F1.

## RESEARCH USE

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

## SOURCE

DIO3 (A-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an extracellular domain of DIO3 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-69388 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

DIO3 (A-19) is recommended for detection of DIO3 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).

DIO3 (A-19) is also recommended for detection of DIO3 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for DIO3 siRNA (h): sc-77150, DIO3 siRNA (m): sc-77151, DIO3 shRNA Plasmid (h): sc-77150-SH, DIO3 shRNA Plasmid (m): sc-77151-SH, DIO3 shRNA (h) Lentiviral Particles: sc-77150-V and DIO3 shRNA (m) Lentiviral Particles: sc-77151-V.

Molecular Weight of DIO3: 32 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.

## PROTOCOLS

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