

DES2 (G-15): sc-240312

BACKGROUND

DES2 (sphingolipid $\delta(4)$ -desaturase/C4-hydroxylase DES2), also known as DEGS2, C14orf66 or degenerative spermatocyte homolog 2, is a 323 amino acid protein belonging to the fatty acid desaturase family and the DEGS sub-family. DES2, a bifunctional enzyme which acts as both a sphingolipid $\delta(4)$ -desaturase and a sphingolipid C4-hydroxylase, is involved in membrane lipid metabolism and sphingolipid biosynthesis. DES2 is up-regulated during keratinocyte differentiation. Not expressed at day 0 or day 3 after differentiation, DES2 is detectable by day 6 and has increased expression by day 9. Localized to the endoplasmic reticulum membrane, DES2 is highly expressed in skin, intestine and kidney.

REFERENCES

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2. Sperling, P., Ternes, P., Moll, H., Franke, S., Zähringer, U. and Heinz, E. 2001. Functional characterization of sphingolipid C4-hydroxylase genes from *Arabidopsis thaliana*. *FEBS Lett.* 494: 90-94.
3. Ternes, P., Franke, S., Zähringer, U., Sperling, P. and Heinz, E. 2002. Identification and characterization of a sphingolipid δ 4-desaturase family. *J. Biol. Chem.* 277: 25512-25518.
4. Omae, F., Miyazaki, M., Enomoto, A., Suzuki, M., Suzuki, Y. and Suzuki, A. 2004. DES2 protein is responsible for phytoceramide biosynthesis in the mouse small intestine. *Biochem. J.* 379: 687-695.
5. Mizutani, Y., Kihara, A. and Igarashi, Y. 2004. Identification of the human sphingolipid C4-hydroxylase, hDES2, and its up-regulation during keratinocyte differentiation. *FEBS Lett.* 563: 93-97.
6. Omae, F., Miyazaki, M., Enomoto, A. and Suzuki, A. 2004. Identification of an essential sequence for dihydroceramide C-4 hydroxylase activity of mouse DES2. *FEBS Lett.* 576: 63-67.
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CHROMOSOMAL LOCATION

Genetic locus: DEGS2 (human) mapping to 14q32.2.

SOURCE

DES2 (G-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of DES2 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-240312 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

DES2 (G-15) is recommended for detection of DES2 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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); non cross-reactive with FADS7.

DES2 (G-15) is also recommended for detection of DES2 in additional species, including equine and canine.

Suitable for use as control antibody for DES2 siRNA (h): sc-92300, DES2 shRNA Plasmid (h): sc-92300-SH and DES2 shRNA (h) Lentiviral Particles: sc-92300-V.

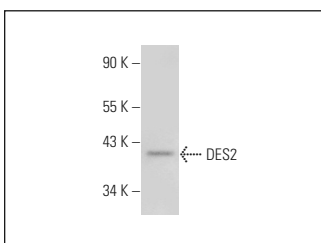
Molecular Weight of DES2: 37 kDa.

Positive Controls: human kidney extract: sc-363764.

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



DES2 (G-15): sc-240312. Western blot analysis of DES2 expression in human kidney tissue extract.

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.