

# ELOVL3 (G-15): sc-54876

## BACKGROUND

Elongation of very long chain fatty acid-like (ELOVL) proteins 1-6 are members of the ELO family of proteins, which play an important role in tissue-specific biosynthesis of very long chain fatty acids and sphingolipids. The ELOVL proteins act as catalysts in fatty acid elongation reduction and localize to the endoplasmic reticulum (ER). Elongation of very long chain fatty acids protein 3 (ELOVL3), also known as Cig30 (cold-inducible glycoprotein of 30 kDa), is expressed in brown adipose tissue, liver, sebaceous glands of skin and epithelial cells of the hair follicles. It participates in the elongation of saturated and monounsaturated fatty acids of up to 24 carbons. ELOVL3 plays a role in the formation of neutral lipids that are required for proper function of the skin. In response to cold exposure, ELOVL3 is significantly upregulated and is important for lipid accumulation during the recruitment process of brown adipose tissue.

## REFERENCES

1. Tvrdik, P., et al. 1999. Cig30 and Pitx3 genes are arranged in a partially overlapping tail-to-tail array resulting in complementary transcripts. *J. Biol. Chem.* 274: 26387-26392.
2. Tvrdik, P., et al. 2000. Role of a new mammalian gene family in the biosynthesis of very long chain fatty acids and sphingolipids. *J. Cell Biol.* 149: 707-718.
3. Westerberg, R., et al. 2004. Role for ELOVL3 and fatty acid chain length in development of hair and skin function. *J. Biol. Chem.* 279: 5621-5629.
4. Jakobsson, A., et al. 2005. Differential regulation of fatty acid elongation enzymes in brown adipocytes implies a unique role for ELOVL3 during increased fatty acid oxidation. *Am. J. Physiol. Endocrinol. Metab.* 289: E517-E526.
5. Anzulovich, A., et al. 2006. Elov3: a model gene to dissect homeostatic links between the circadian clock and nutritional status. *J. Lipid Res.* 47: 2690-2700.
6. Westerberg, R., et al. 2006. ELOVL3 is an important component for early onset of lipid recruitment in brown adipose tissue. *J. Biol. Chem.* 281: 4958-4968.
7. Jakobsson, A., et al. 2006. Fatty acid elongases in mammals: their regulation and roles in metabolism. *Prog. Lipid Res.* 45: 237-249.
8. Li, W., et al. 2007. Depletion of ceramides with very long chain fatty acids causes defective skin permeability barrier function, and neonatal lethality in ELOVL4 deficient mice. *Int. J. Biol. Sci.* 3: 120-128.

## CHROMOSOMAL LOCATION

Genetic locus: ELOVL3 (human) mapping to 10q24.32.

## SOURCE

ELOVL3 (G-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of ELOVL3 of human origin.

## RESEARCH USE

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

## 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-54876 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

ELOVL3 (G-15) is recommended for detection of ELOVL3 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).

ELOVL3 (G-15) is also recommended for detection of ELOVL3 in additional species, including bovine and porcine.

Suitable for use as control antibody for ELOVL3 siRNA (h): sc-62267, ELOVL3 shRNA Plasmid (h): sc-62267-SH and ELOVL3 shRNA (h) Lentiviral Particles: sc-62267-V

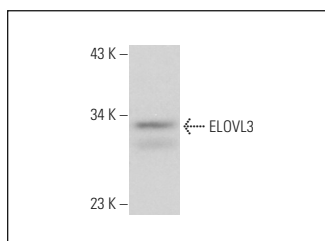
Molecular Weight of ELOVL3: 30 kDa.

Positive Controls: human skeletal muscle extract: sc-363776.

## 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



ELOVL3 (G-15): sc-54876. Western blot analysis of ELOVL3 expression in human skeletal muscle tissue extract.

## STORAGE

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