

# ALOXE3 (T-14): sc-133275

## BACKGROUND

ALOXE3 (arachidonate lipoxygenase 3), also known as E-LOX or eLOX3, is a 711 amino acid protein that is involved in lipid metabolism and contains one lipoxygenase domain and one PLAT domain. Expressed predominately in skin, ALOXE3 uses iron as a cofactor to introduce oxygen into polyunsaturated fatty acids and is thought to play an important role in the catabolism of leukotrienes (arachidonic acid-derived compounds which participate in inflammation and hypersensitivity). Defects in the gene encoding ALOXE3 are the cause of non-bullous congenital ichthyosiform erythroderma (NCIE), a skin disorder characterized by an abnormal cornification of the epidermis, with symptoms including scaling and red skin, as well as painful fissures resulting from palmoplantar keratoderma.

## REFERENCES

- Krieg, P., Marks, F. and Fürstenberger, G. 2001. A gene cluster encoding human epidermis-type lipoxygenases at chromosome 17p13.1: cloning, physical mapping, and expression. *Genomics* 73: 323-330.
- Jobard, F., Lefèvre, C., Karaduman, A., Blanchet-Bardon, C., Emre, S., Weissenbach, J., Ozgüc, M., Lathrop, M., Prud'homme, J.F. and Fischer, J. 2002. Lipoxygenase-3 (ALOXE3) and 12(R)-lipoxygenase (ALOX12B) are mutated in non-bullous congenital ichthyosiform erythroderma (NCIE) linked to chromosome 17p13.1. *Hum. Mol. Genet.* 11: 107-113.
- Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607206. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Yu, Z., Schneider, C., Boeglin, W.E. and Brash, A.R. 2005. Mutations associated with a congenital form of ichthyosis (NCIE) inactivate the epidermal lipoxygenases 12R-LOX and eLOX3. *Biochim. Biophys. Acta* 16863: 238-247.
- Eckl, K.M., Krieg, P., Küster, W., Traupe, H., Andre, F., Wittstruck, N., Fürstenberger, G. and Hennies, H.C. 2005. Mutation spectrum and functional analysis of epidermis-type lipoxygenases in patients with autosomal recessive congenital ichthyosis. *Hum. Mutat.* 26: 351-361.
- Yu, Z., Schneider, C., Boeglin, W.E. and Brash, A.R. 2006. Human and mouse eLOX3 have distinct substrate specificities: implications for their linkage with lipoxygenases in skin. *Arch. Biochem. Biophys.* 455: 188-196.
- Yu, Z., Schneider, C., Boeglin, W.E. and Brash, A.R. 2007. Epidermal lipoxygenase products of the hepoxilin pathway selectively activate the nuclear receptor PPAR $\alpha$ . *Lipids* 42: 491-497.
- Fürstenberger, G., Epp, N., Eckl, K.M., Hennies, H.C., Jorgensen, C., Hallenborg, P., Kristiansen, K. and Krieg, P. 2007. Role of epidermis-type lipoxygenases for skin barrier function and adipocyte differentiation. *Prostaglandins Other Lipid Mediat.* 82: 128-134.

## CHROMOSOMAL LOCATION

Genetic locus: ALOXE3 (human) mapping to 17p13.1.

## STORAGE

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

## SOURCE

ALOXE3 (T-14) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping near the N-terminus of ALOXE3 of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-133275 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

ALOXE3 (T-14) is recommended for detection of ALOXE3 of 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).

Suitable for use as control antibody for ALOXE3 siRNA (h): sc-93941, ALOXE3 shRNA Plasmid (h): sc-93941-SH and ALOXE3 shRNA (h) Lentiviral Particles: sc-93941-V.

Molecular Weight of ALOXE3: 81 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## RESEARCH USE

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

## PROTOCOLS

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