

# EDAR (F-5): sc-398337

## BACKGROUND

The tumor necrosis factor receptor (TNFR) superfamily represents a growing family of type I transmembrane glycoproteins that are involved in various cellular functions, including proliferation, differentiation and programmed cell death. These proteins share homology for cysteine-rich repeats in the extracellular ligand binding domain and the intracellular death domain. Members of the TNFR superfamily transmit signals through protein-protein interactions, and these signals can lead to the activation of either the caspase and Jun kinase pathways, which promote cell death, or the NF $\kappa$ B pathway, which results in cell survival. The ectodermal dysplasia receptor (EDAR) promotes all three of these pathways and mediates ectodermal differentiation. EDAR is encoded by the downless gene and is mutated in ectodermal dysplasia syndromes, which are characterized by impaired hair, teeth and sweat gland development. Ectodysplasin A (EDA) is a type II membrane protein that is encoded by the Tabby gene and produces many splice variants, the longest of which, EDA-A1, serves as the ligand for EDAR. EDA-A2, which differs from EDA-A1 by the deletion of two amino acids, binds only the X-linked ectodysplasin-A2 receptor (XEDAR). Both EDAR and XEDAR exhibit homology with TROY.

## REFERENCES

1. Gruss, H.J. 1996. Molecular, structural, and biological characteristics of the tumor necrosis factor ligand superfamily. *Int. J. Clin. Lab. Res.* 26: 143-159.
2. Gruss, H.J., et al. 1996. Structural and biological features of the TNF receptor and TNF ligand superfamilies: interactive signals in the pathobiology of Hodgkin's disease. *Ann. Oncol.* 7: 19-26.
3. Baker, S.J., et al. 1998. Modulation of life and death by the TNF receptor superfamily. *Oncogene* 17: 3261-3270.
4. Tucker, A.S., et al. 2000. EDAR/Eda interactions regulate enamel knot formation in tooth morphogenesis. *Development* 127: 4691-4700.
5. Yan, M., et al. 2000. Two-amino acid molecular switch in an epithelial morphogen that regulates binding to two distinct receptors. *Science* 290: 523-527.
6. Kojima, T., et al. 2000. TROY, a newly identified member of the tumor necrosis factor receptor superfamily, exhibits a homology with EDAR and is expressed in embryonic skin and hair follicles. *J. Biol. Chem.* 275: 20742-20747.
7. Kumar, A., et al. 2001. The ectodermal dysplasia receptor activates the nuclear factor- $\kappa$ B, JNK, and cell death pathways and binds to ectodysplasin A. *J. Biol. Chem.* 276: 2668-2677.

## CHROMOSOMAL LOCATION

Genetic locus: EDAR (human) mapping to 2q12.3.

## SOURCE

EDAR (F-5) is a mouse monoclonal antibody raised against amino acids 61-360 mapping within an internal region of EDAR of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG $_1$  kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

EDAR (F-5) is recommended for detection of EDAR of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ 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).

Suitable for use as control antibody for EDAR siRNA (h): sc-40239, EDAR shRNA Plasmid (h): sc-40239-SH and EDAR shRNA (h) Lentiviral Particles: sc-40239-V.

Molecular Weight of EDAR: 49 kDa.

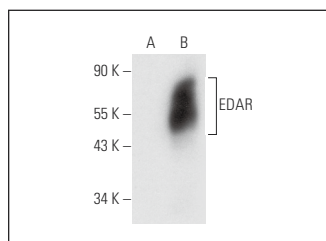
Positive Controls: EDAR (h): 293T Lysate: sc-177166.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:

- 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



EDAR (F-5): sc-398337. Western blot analysis of EDAR expression in non-transfected: sc-117752 (A) and human EDAR transfected: sc-177166 (B) 293T whole cell lysates.

## STORAGE

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

## RESEARCH USE

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