SANTA CRUZ BIOTECHNOLOGY, INC.

ERAP1 (731): sc-100727

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The endoplasmic reticulum (ER) aminopeptidase 1 (ERAP1) is localized to the lumen of the ER, which removes NH_2-terminal residues from many antigenic precursors for MHC class I peptide presentation. ERAP1 is also designated adipocyte-derived leucine aminopeptidase (A-LAP), puromycin-insensitive leucine-specific aminopeptidase (PILS-AP) and aminopeptidase regulator of TNFR1 shedding (ARTS-1). Peptides presented by MHC class I on the surface of a cell must be 8 to 11 residues long, and ERAP1 specifically trims peptides of nine amino acids or more. ERAP1 is induced by interferon-γ and encoded for by the ARTS-1 gene, which maps to human chromosome 5q15. ERAP1 is thought to inactivate several bioactive peptides, including Angioten-sin II, and, subsequently, may be involved in the regulation of blood pressure. It may have a role in angiogenesis by regulating the proliferation and migration of endothelial cells, and is characterized as a TNFR1 binding protein that promotes TNFR1 shedding.

REFERENCES

1. Hattori, A., et al. 2000. Characterization of recombinant human adipocyte-derived leucine aminopeptidase expressed in Chinese hamster ovary cells. J. Biochem. 128: 755-762.
2. Hattori, A., et al. 2001. Genomic organization of the human adipocyte-derived leucine aminopeptidase gene and its relationship to the placental leucine aminopeptidase/oxytocinase gene. J. Biochem. 130: 235-241.
3. Saric, T., et al. 2002. An IFN-γ-induced aminopeptidase in the ER, ERAP1, trims precursors to MHC class I-presented peptides. Nat. Immunol. 3: 1169-1176.
4. York, I.A., et al. 2002. The ER aminopeptidase ERAP1 enhances or limits antigen presentation by trimming epitopes to 8-9 residues. Nat. Immunol. 3: 1177-1184.
5. Cui, X., et al. 2002. Identification of ARTS-1 as a novel TNFR1-binding protein that promotes TNFR1 ectodomain shedding. J. Clin. Invest. 110: 515-526.
6. Yamamoto, N., et al. 2002. Identification of 33 polymorphisms in the adipocyte-derived leucine aminopeptidase (ALAP) gene and possible association with hypertension. Hum. Mutat. 19: 251-257.
7. Akada, T., et al. 2002. Puromycin insensitive leucyl-specific aminopeptidase (PILSAP) is involved in the activation of endothelial integrins. J. Cell. Physiol. 193: 253-262.

CHROMOSOMAL LOCATION

Genetic locus: ARTS-1 (human) mapping to 5q15.

SOURCE

ERAP1 (731) is a mouse monoclonal antibody raised against recombinant ERAP1 of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

ERAP1 (731) is recommended for detection of ERAP1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for ERAP1 siRNA (h): sc-43577, ERAP1 shRNA Plasmid (h): sc-43577-SH and ERAP1 shRNA (h) Lentiviral Particles: sc-43577-V.

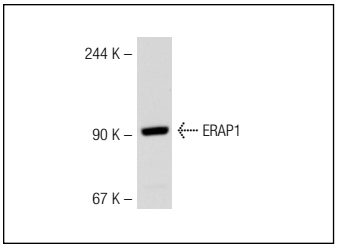
Molecular Weight of ERAP1: 106 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203 or A-431 whole cell lysate: sc-2201.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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).

DATA



ERAP1 (731): sc-100727. Western blot analysis of ERAP1 expression in K-562 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Dautzenberg, I.J.C., et al. 2017. Baculovirus-assisted reovirus infection in monolayer and spheroid cultures of glioma cells. Sci. Rep. 7: 17654.

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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.