

## ERAP1 (S-19): sc-26885

### BACKGROUND

The endoplasmic reticulum (ER) aminopeptidase 1 (ERAP1) is localized to the lumen of the ER, which removes NH<sub>2</sub>-terminal residues from many antigenic precursors for MHC class I peptide presentation. Peptides that are presented by MHC class I on the surface of a cell must be 8-11 residues long, and ERAP1 specifically trims peptides of 9 amino acids or more. ERAP1 is also induced by interferon- $\gamma$ . The gene encoding human ERAP1 maps to chromosome 5q15. ERAP1 has previously been characterized as adipocyte-derived leucine aminopeptidase (A-LAP), puromycin-insensitive leucine-specific aminopeptidase (PILS-AP) and aminopeptidase regulator of TNFR1 shedding (ARTS-1). A-LAP is thought to inactivate several bioactive peptides, including angiotensin II, and, subsequently, may be involved in the regulation of blood pressure. PILS-AP is described as playing a role in angiogenesis by regulating the proliferation and migration of endothelial cells, and ARTS-1 is characterized as a TNFR1 binding protein that promotes TNFR1 shedding.

### REFERENCES

- Hattori, A., et al. 2000. Characterization of recombinant human adipocyte-derived leucine aminopeptidase expressed in Chinese hamster ovary cells. *J. Biochem.* 128: 755-762.
- 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.
- Saric, T., et al. and Goldberg, A.L. 2002. An IFN- $\gamma$ -induced aminopeptidase in the ER, ERAP1, trims precursors to MHC class I-presented peptides. *Nat. Immunol.* 3: 1169-1176.
- 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.
- 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.

### CHROMOSOMAL LOCATION

Genetic locus: ARTS1 (human) mapping to 5q15; Arts1 (mouse) mapping to 13 C1.

### SOURCE

ERAP1 (S-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of ERAP1 of human origin.

### PRODUCT

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

Blocking peptide available for competition studies, sc-26885 P, (100  $\mu$ 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

ERAP1 (S-19) is recommended for detection of ERAP1 of mouse, rat and 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 ERAP1 siRNA (h): sc-43577, ERAP1 siRNA (m): sc-44435, ERAP1 shRNA Plasmid (h): sc-43577-SH, ERAP1 shRNA Plasmid (m): sc-44435-SH, ERAP1 shRNA (h) Lentiviral Particles: sc-43577-V and ERAP1 shRNA (m) Lentiviral Particles: sc-44435-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 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) 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.

### SELECT PRODUCT CITATIONS

- Escobar, H., et al. 2008. Large scale mass spectrometric profiling of peptides eluted from HLA molecules reveals N-terminal-extended peptide motifs. *J. Immunol.* 181: 4874-4882.

### 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](http://www.scbt.com) or our catalog for detailed protocols and support products.



Try **ERAP1 (B-10): sc-271823** or **ERAP1 (731): sc-100727**, our highly recommended monoclonal alternatives to ERAP1 (S-19).