

# ERAP1 (B-10): sc-271823

## 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. 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 9 amino acids or more. ERAP1 is induced by interferon- $\gamma$  and encoded for by the ARTS1 gene, which maps to human chromosome 5q15. ERAP1 is thought to inactivate several bioactive peptides, including Angiotensin 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.

## CHROMOSOMAL LOCATION

Genetic locus: ERAP1 (human) mapping to 5q15; Erap1 (mouse) mapping to 13 C1.

## SOURCE

ERAP1 (B-10) is a mouse monoclonal antibody raised against amino acids 721-840 mapping near the C-terminus of ERAP1 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ERAP1 (B-10) is available conjugated to agarose (sc-271823 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271823 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271823 PE), fluorescein (sc-271823 FITC), Alexa Fluor® 488 (sc-271823 AF488), Alexa Fluor® 546 (sc-271823 AF546), Alexa Fluor® 594 (sc-271823 AF594) or Alexa Fluor® 647 (sc-271823 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271823 AF680) or Alexa Fluor® 790 (sc-271823 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

ERAP1 (B-10) is recommended for detection of ERAP1 of mouse, rat and 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), immunohistochemistry (including paraffin-embedded sections) (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.

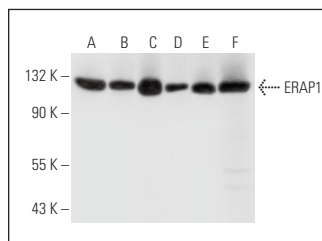
Molecular Weight of ERAP1: 106 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227 or THP-1 cell lysate: sc-2238.

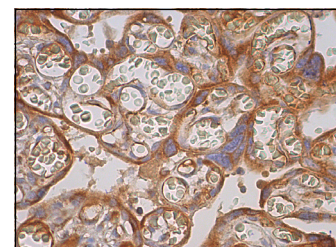
## RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgG $\kappa$  BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



ERAP1 (B-10): sc-271823. Western blot analysis of ERAP1 expression in Jurkat (A), Hep G2 (B), Ramos (C), HUV-EC-C (D) and THP-1 (E) whole cell lysates and human liver tissue extract (F).



ERAP1 (B-10): sc-271823. Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic staining of trophoblastic cells.

## SELECT PRODUCT CITATIONS

- Paladini, F., et al. 2018. An allelic variant in the intergenic region between ERAP1 and ERAP2 correlates with an inverse expression of the two genes. *Sci. Rep.* 8: 10398.
- Thomaidou, S., et al. 2020.  $\beta$ -cell stress shapes CTL immune recognition of preproinsulin signal peptide by post-transcriptional regulation of endoplasmic reticulum aminopeptidase 1. *Diabetes* 69: 670-680.
- Mattorre, B., et al. 2022. A short ERAP2 that binds IRAP is expressed in macrophages independently of gene variation. *Int. J. Mol. Sci.* 23: 4961.
- Schott, B.H., et al. 2022. Single-cell genome-wide association reveals that a nonsynonymous variant in ERAP1 confers increased susceptibility to influenza virus. *Cell Genom.* 2: 100207.
- Niu, Y., et al. 2022. Hepatokine ERAP1 disturbs skeletal muscle insulin sensitivity via inhibiting USP33-mediated ADRB2 deubiquitination. *Diabetes* 71: 921-933.

## 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.

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