

# Ramp4/4-2 (A-18): sc-85114

## BACKGROUND

Newly synthesized proteins emerging through the endoplasmic reticulum (ER) membrane enter a unique environment for folding and assembly by associated proteins. RAMP4 (ribosome-attached membrane protein 4), also designated SERP1 (stress-associated endoplasmic reticulum protein family member 1) and RAMP4-2 (ribosome-associated membrane protein 4-2), also known as SERP2 (stress-associated endoplasmic reticulum protein family member 2), are single-pass type IV membrane proteins that localize to the ER and belong to the RAMP4 family. RAMP4 and RAMP4-2 may interact with target proteins during translocation into the lumen of the ER and protect unfolded target proteins against degradation during ER stress. After termination of ER stress, RAMP4 and RAMP4-2 are involved in facilitating glycosylation of target proteins. RAMP4 consists of 66 amino acids and is encoded by a gene located on human chromosome 3, whereas RAMP4-2 is encoded by a gene located on human chromosome 13 and is composed of 61 amino acids.

## REFERENCES

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2. Trombetta, E.S. and Helenius, A. 1998. Lectins as chaperones in glycoprotein folding. *Curr. Opin. Struct. Biol.* 8: 587-592.
3. Schröder, K., et al. 1999. Control of glycosylation of MHC class II-associated invariant chain by translocon-associated RAMP4. *EMBO J.* 18: 4804-4815.
4. Yamaguchi, A., et al. 1999. Stress-associated endoplasmic reticulum protein 1 (SERP1)/ribosome-associated membrane protein 4 (RAMP4) stabilizes membrane proteins during stress and facilitates subsequent glycosylation. *J. Cell Biol.* 147: 1195-1204.
5. Parodi, A.J. 2000. Protein glucosylation and its role in protein folding. *Annu. Rev. Biochem.* 69: 69-93.
6. High, S., et al. 2000. Glycoprotein folding in the endoplasmic reticulum: a tale of three chaperones? *FEBS Lett.* 476: 38-41.
7. Hori, O., et al. 2006. Deletion of SERP1/RAMP4, a component of the endoplasmic reticulum (ER) translocation sites, leads to ER stress. *Mol. Cell. Biol.* 26: 4257-4267.
8. Shen, Y., et al. 2007. A novel methodology to probe endothelial differential gene expression profile reveals novel genes. *Endothelium* 14: 303-314.
9. Favaloro, V., et al. 2008. Distinct targeting pathways for the membrane insertion of tail-anchored (TA) proteins. *J. Cell Sci.* 121: 1832-1840.

## CHROMOSOMAL LOCATION

Genetic locus: SERP1 (human) mapping to 3q25.1, SERP2 (human) mapping to 13q14.11; Serp1 (mouse) mapping to 3 D, Serp2 (mouse) mapping to 14 D3.

## SOURCE

Ramp4/4-2 (A-18) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping near the N-terminus of Ramp4-2 of human origin.

## PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-85114 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Ramp4/4-2 (A-18) is recommended for detection of Ramp4-2 and Ramp4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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); non cross-reactive with other Ramp family members.

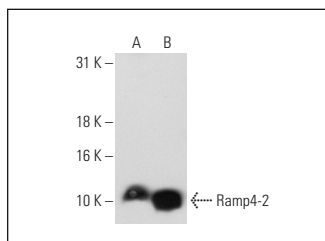
Ramp4/4-2 (A-18) is also recommended for detection of Ramp4-2 and Ramp4 in additional species, including canine, bovine and porcine.

Molecular Weight of Ramp4: 7 kDa.

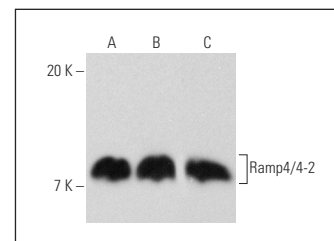
Molecular Weight of Ramp4-2: 7 kDa.

Positive Controls: Ramp4-2 (h): 293T Lysate: sc-114379, NIH/3T3 whole cell lysate: sc-2210 or LNCaP cell lysate: sc-2231.

## DATA



Ramp4/4-2 (A-18): sc-85114. Western blot analysis of Ramp4-2 expression in non-transfected: sc-117752 (A) and human Ramp4-2 transfected: sc-114379 (B) 293T whole cell lysates.



Ramp4/4-2 (A-18): sc-85114. Western blot analysis of Ramp4/4-2 expression in mouse embryo tissue extract (A) and NIH/3T3 (B) and LNCaP (C) 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.

## PROTOCOLS

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