SANTA CRUZ BIOTECHNOLOGY, INC.

Sec61a (G-2): sc-393182



BACKGROUND

In mammalian cells, protein translocation across the endoplasmic reticulum (ER) membrane is almost exclusively co-translational. This transport depends on the Sec61 complex, which is homologous to the yeast Sec61p complex and has been identified in mammals as a ribosome-bound pore-forming membrane protein complex. The Sec61 complex associates with two ubiquitous ER membrane proteins Sec62 (also designated human translocation protein 1 or HTP1) and Sec63. The Sec61 complex forms the hydrophilic pore in the membrane through which the nascent polypeptide is translocated. Sec61p seems to be the evolutionary conserved component since homologues of Sec61p have been found both in bacteria and mammals. Sec62 is expressed in various human tissues such as the heart, brain, placenta, liver and pancreas.

REFERENCES

- 1. Simon, S.M. and Blobel, G. 1991. A protein-conducting channel in the endoplasmic reticulum. Cell 65: 371-380.
- 2. Görlich, D. and Rapoport, T.A. 1993. Protein translocation into proteoliposomes reconstituted from purified components of the endoplasmic reticulum membrane. Cell 75: 615-630.

CHROMOSOMAL LOCATION

Genetic locus: SEC61A1 (human) mapping to 3g21.3, SEC61A2 (human) mapping to 10p14; Sec61a1 (mouse) mapping to 6 D1, Sec61a2 (mouse) mapping to 2 A1.

SOURCE

Sec61 α (G-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 392-423 near the C-terminus of Sec61a1 of human origin.

PRODUCT

Each vial contains 200 μ g lgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Sec61 α (G-2) is available conjugated to agarose (sc-393182 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-393182 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393182 PE), fluorescein (sc-393182 FITC), Alexa Fluor® 488 (sc-393182 AF488), Alexa Fluor® 546 (sc-393182 AF546), Alexa Fluor® 594 (sc-393182 AF594) or Alexa Fluor® 647 (sc-393182 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393182 AF680) or Alexa Fluor® 790 (sc-393182 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-393182 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

STORAGE

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

APPLICATIONS

Sec61 α (G-2) is recommended for detection of Sec61 α 1 and Sec61 α 2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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), immunohistochemistry (including paraffinembedded 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).

Sec61 α (G-2) is also recommended for detection of Sec61 α 1 and Sec61 α 2 in additional species, including equine, canine, bovine, porcine and avian.

Molecular Weight of Sec61a1 isoforms: 39/52 kDa.

Molecular Weight of Sec61a2 isoforms: 49/52 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, RAW 264.7 whole cell lysate: sc-2211 or RBL-1 whole cell lysate: sc-364790.

DATA





Sec61a (G-2): sc-393182. Western blot analysis of Sec61α expression in K-562 (**A**), Daudi (**B**), BC₃H1 (**C**), RAW 264.7 (D), C6 (E) and RBL-1 (F) whole cell lysates.

Sec61 α (G-2): sc-393182. Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing cytoplasmic staining of Leydig cells.

SELECT PRODUCT CITATIONS

- 1. Gamerdinger, M., et al. 2015. The principle of antagonism ensures protein targeting specificity at the endoplasmic reticulum. Science 348: 201-207.
- 2. Gamerdinger, M., et al. 2019. Early scanning of nascent polypeptides inside the ribosomal tunnel by NAC. Mol. Cell 75: 996-1006.e8.
- 3. Gérard, S.F., et al. 2020. Structure of the inhibited state of the Sec translocon. Mol. Cell 79: 406-415.e7.
- 4. Noor, S.I., et al. 2021. Glycosyltransferase POMGNT1 deficiency strengthens N-cadherin-mediated cell-cell adhesion. J. Biol. Chem. 296: 100433.
- 5. Mandelboum, S., et al. 2023. Effective extraction of polyribosomes exposes gene expression strategies in primary astrocytes. Nucleic Acids Res. 51: 3375-3390.
- 6. Ahlstedt, B.A., et al. 2024. UBXN1 maintains ER proteostasis and represses UPR activation by modulating translation. EMBO Rep. 25: 672-703.

RESEARCH USE

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