

# MRP-L45 (E-12): sc-515563

## BACKGROUND

Mitochondrial ribosomes consist of a large 39S subunit and a small 28S subunit, both of which are comprised of multiple mitochondrial ribosomal proteins (MRPs) that are encoded by nuclear genes and are essential for protein synthesis within mitochondria. MRP-L45 (mitochondrial ribosomal protein L45) is a 306 amino acid protein that localizes to the mitochondrion, where it exists as a component of the 39S ribosomal subunit and works in conjunction with MRPs to mediate protein synthesis. The gene encoding MRP-L45 maps to human chromosome 17, which comprises over 2.5% of the human genome and encodes over 1,200 genes. Two key tumor suppressor genes are associated with chromosome 17, namely, p53 and BRCA1. Tumor suppressor p53 is necessary for maintenance of cellular genetic integrity by moderating cell fate through DNA repair versus cell death. Malfunction or loss of p53 expression is associated with malignant cell growth and Li-Fraumeni syndrome. Like p53, BRCA1 is directly involved in DNA repair, though specifically it is recognized as a genetic determinant of early onset breast cancer and predisposition to cancers of the ovary, colon, prostate gland and fallopian tubes.

## REFERENCES

1. Kenmochi, N., et al. 2001. The human mitochondrial ribosomal protein genes: mapping of 54 genes to the chromosomes and implications for human disorders. *Genomics* 77: 65-70.
2. Koc, E.C., et al. 2001. The large subunit of the mammalian mitochondrial ribosome. Analysis of the complement of ribosomal proteins present. *J. Biol. Chem.* 276: 43958-43969.
3. Zhang, Z. and Gerstein, M. 2003. Identification and characterization of over 100 mitochondrial ribosomal protein pseudogenes in the human genome. *Genomics* 81: 468-480.

## CHROMOSOMAL LOCATION

Genetic locus: MRPL45 (human) mapping to 17q12; Mrpl45 (mouse) mapping to 11 D.

## SOURCE

MRP-L45 (E-12) is a mouse monoclonal antibody raised against amino acids 217-289 mapping near the C-terminus of MRP-L45 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MRP-L45 (E-12) is available conjugated to agarose (sc-515563 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515563 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515563 PE), fluorescein (sc-515563 FITC), Alexa Fluor® 488 (sc-515563 AF488), Alexa Fluor® 546 (sc-515563 AF546), Alexa Fluor® 594 (sc-515563 AF594) or Alexa Fluor® 647 (sc-515563 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515563 AF680) or Alexa Fluor® 790 (sc-515563 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

MRP-L45 (E-12) is recommended for detection of MRP-L45 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for MRP-L45 siRNA (h): sc-93965, MRP-L45 siRNA (m): sc-149606, MRP-L45 shRNA Plasmid (h): sc-93965-SH, MRP-L45 shRNA Plasmid (m): sc-149606-SH, MRP-L45 shRNA (h) Lentiviral Particles: sc-93965-V and MRP-L45 shRNA (m) Lentiviral Particles: sc-149606-V.

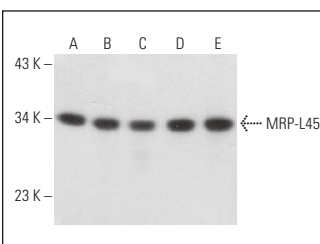
Molecular Weight of MRP-L45: 35 kDa.

Positive Controls: T24 cell lysate: sc-2292, SK-BR-3 cell lysate: sc-2218 or IMR-32 cell lysate: sc-2409.

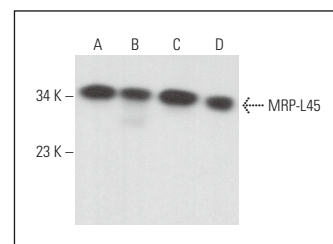
## RECOMMENDED SUPPORT REAGENTS

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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



MRP-L45 (E-12): sc-515563. Western blot analysis of MRP-L45 expression in NBT-II (A), BC<sub>3</sub>H1 (B), C6 (C), KNRK (D) and L929 (E) whole cell lysates.



MRP-L45 (E-12): sc-515563. Western blot analysis of MRP-L45 expression in SK-BR-3 (A), T24 (B), IMR-32 (C) and Neuro-2A (D) 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) for detailed protocols and support products.