SANTA CRUZ BIOTECHNOLOGY, INC.

# GRP 94 (H-10): sc-393402

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

Heat shock protein (HSP) molecular chaperones are environmental stress-inducible gene products. The human HSP 90 family includes 17 genes that fall into 4 classes: HSP90AA, HSP90AB, HSP90B and TRAP. HSP 90 family members guide the normal folding, intracellular disposition and proteolytic turnover of many key regulators of cell growth, differentiation and survival. HSP 90α, also designated HSP90A, HSP 86 and LPS-associated protein 2 (LAP2), is a cytosolic enhancer of inducible nitric-oxide synthase (iNOS), with chaperone activity that is important for the transcriptional activity of p53. HSP 90β, also designated HSP90B, HSP 84 and HSPC2, is a cytosolic protein that participates in signaling pathways with PKC ε to protect cells from external damage, particularly in heat shock-mediated events. GRP 94, also known as tumor rejection antigen 1 (TRA1), ECGP and GP96, localizes to the ER, is highly expressed in BGC-823 human gastric carcinoma cells and is upregulated in human endothelial cells in response to hypoxia by HIF-1. TRAP1 (TNF receptor-associated protein 1), also designated HSP 75 is a mitochondrial matrix component that plays a role in the induction of apoptosis in response to reactive oxygen species.

## REFERENCES


1. Wu, J.M., et al. 2003. PKC ε is a unique regulator for HSP90 β gene in heat shock response. J. Biol. Chem. 278: 51143-51149.
2. Whitesell, L. and Lindquist, S.L. 2005. HSP 90 and the chaperoning of cancer. Nat. Rev. Cancer 5: 761-772.


## CHROMOSOMAL LOCATION

Genetic locus: HSP90B1 (human) mapping to 12q23.3; Hsp90b1 (mouse) mapping to 10 C1.

## SOURCE

GRP 94 (H-10) is a mouse monoclonal antibody raised against amino acids 200-411 of GRP 94 of human origin.

## PRODUCT

Each vial contains 200 µg $IgG_{2b}$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

GRP 94 (H-10) is available conjugated to agarose (sc-393402 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-393402 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393402 PE), fluorescein (sc-393402 FITC), Alexa Fluor® 488 (sc-393402 AF488), Alexa Fluor® 546 (sc-393402 AF546), Alexa Fluor® 594 (sc-393402 AF594) or Alexa Fluor® 647 (sc-393402 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393402 AF680) or Alexa Fluor® 790 (sc-393402 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.



## STORAGE

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

## APPLICATIONS

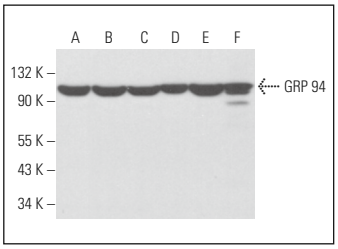
GRP 94 (H-10) is recommended for detection of GRP 94 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including 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 GRP 94 siRNA (h): sc-35523, GRP 94 siRNA (m): sc-35524, GRP 94 shRNA Plasmid (h): sc-35523-SH, GRP 94 shRNA Plasmid (m): sc-35524-SH, GRP 94 shRNA (h) Lentiviral Particles: sc-35523-V and GRP 94 shRNA (m) Lentiviral Particles: sc-35524-V.

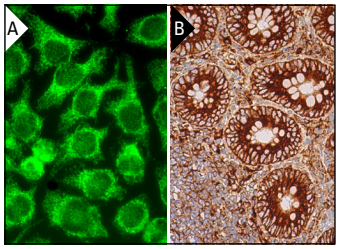
Molecular Weight of GRP 94: 94 kDa.

Positive Controls: Neuro-2A whole cell lysate: sc-364185, c4 whole cell lysate: sc-364186 or NIH/3T3 whole cell lysate: sc-2210.

## DATA




GRP 94 (H-10): sc-393402. Western blot analysis of GRP 94 expression in NIH/3T3 (**A**), Neuro-2A (**B**), c4 (**C**), HEL 92.1.7 (**D**) and Hep G2 (**E**) whole cell lysates and rat liver tissue extract (**F**).




GRP 94 (H-10): sc-393402. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human appendix tissue showing cytoplasmic staining of glandular cells and lymphoid cells (**B**).

## SELECT PRODUCT CITATIONS


1. Su, L., et al. 2013. Galangin inhibits proliferation of hepatocellular carcinoma cells by inducing endoplasmic reticulum stress. Food Chem. Toxicol. 62: 810-816.
2. Jeon, Y.J., et al. 2018. miRNA-mediated TUSC3 deficiency enhances UPR and ERAD to promote metastatic potential of NSCLC. Nat. Commun. 9: 5110.
3. Gemel, J., et al. 2019. Connecting exosomes and connexins. Cancers 11: 476.
4. Borkham-Kamphorst, E., et al. 2020. Chronic carbon tetrachloride applications induced hepatocyte apoptosis in lipocalin 2 null mice through endoplasmic reticulum stress and unfolded protein response. Int. J. Mol. Sci. 21: 5230.
5. Wu, K., et al. 2021. Exosomal miR-19a and IBSP cooperate to induce osteolytic bone metastasis of estrogen receptor-positive breast cancer. Nat. Commun. 12: 5196.


## RESEARCH USE

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