SANTA CRUZ BIOTECHNOLOGY, INC.

rRNA (Y10b): sc-33678

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Ribosomal RNA (rRNA) is a component of the ribosomes where amino acids are assembled into polypeptides to be made into proteins. RRNA molecules are very abundant and make up approximately 80% of the RNA molecules found in a typical eukaryotic cell. Eukaryotic ribosomes consist of four different rRNA molecules: 5S, 5.8S, 18S and 28S rRNA. 5.8S, 18S and 28S rRNA are synthesized in the nucleolus, while 5S rRNA is synthesized in the nucleus. All four combine with the ribosomal proteins in the nucleolus to form pre40S and pre60S ribosomal subunits. RRNA molecules play a major role in protein synthesis. Ribosomal RNA molecules are crucial in correctly positioning the mRNA and the peptidyl tRNA, they are involved in peptidyl transferase activity and they play a structural role by forming the scaffolding where ribosomal proteins assemble.

SOURCE

rRNA (Y10b) is a mouse monoclonal antibody derived from unimmunized autoimmune NZB/NZW mice.

PRODUCT

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

rRNA (Y10b) is available conjugated to agarose (sc-33678 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-33678 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-33678 PE), fluorescein (sc-33678 FITC), Alexa Fluor® 488 (sc-33678 AF488), Alexa Fluor® 546 (sc-33678 AF546), Alexa Fluor® 594 (sc-33678 AF594) or Alexa Fluor® 647 (sc-33678 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-33678 AF680) or Alexa Fluor® 790 (sc-33678 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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

APPLICATIONS

rRNA (Y10b) is recommended for detection of rRNA of mouse, rat and human origin by 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Positive Controls: HeLa whole cell lysate: sc-2200.

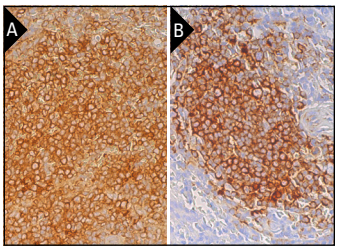
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 2) 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. 3) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

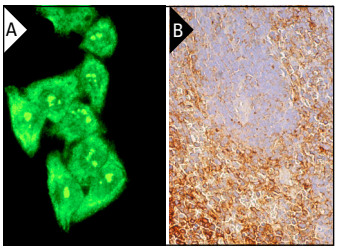
STORAGE

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

DATA



rRNA (Y10b): sc-33678. Immunoperoxidase staining of formalin fixed, paraffin-embedded rat spleen tissue showing cytoplasmic and membrane staining of cells in white pulp and cytoplasmic staining cells in red pulp (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human spleen tissue showing cytoplasmic and membrane staining of cells in white pulp (**B**). Blocked with 0.25X UltraCruz® Blocking Reagent: sc-516214. Detection reagents used: m-IgGκ BP-B: sc-516142 and ImmunoCruz® ABC Kit: sc-516216.



rRNA (Y10b): sc-33678. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse spleen tissue showing cytoplasmic staining of cells in a subset of cells in white pulp and cells in red pulp. Blocked with 0.25X UltraCruz® Blocking Reagent: sc-516214. Detection reagents used: m-IgGκ BP-B: sc-516142 and ImmunoCruz® ABC Kit: sc-516216 (**B**).

SELECT PRODUCT CITATIONS

1. Guenther, U.P., et al. 2009. IGHMBP2 is a ribosome-associated helicase inactive in the neuromuscular disorder distal SMA type 1 (DSMA1). Hum. Mol. Genet. 18: 1288-1300.
2. Cui, C., et al. 2012. Expression of parafibromin in major renal cell tumors. Eur. J. Histochem. 56: e39.
3. Francis, S.P., et al. 2013. A novel role of cytosolic protein synthesis inhibition in aminoglycoside ototoxicity. J. Neurosci. 33: 3079-3093.
4. Liu, Y., et al. 2019. Pleiotropic effects of PPARD accelerate colorectal tumorigenesis, progression, and invasion. Cancer Res. 79: 954-969.
5. Yasuda, S., et al. 2020. Stress- and ubiquitylation-dependent phase separation of the proteasome. Nature 578: 296-300.
6. Hosseini-Farahabadi, S., et al. 2021. Small molecule Y-320 stimulates ribosome biogenesis, protein synthesis, and aminoglycoside-induced premature termination codon readthrough. PLoS Biol. 19: e3001221.
7. Pietraforte, I., et al. 2022. CXCL4-RNA complexes circulate in systemic sclerosis and amplify inflammatory/pro-fibrotic responses by myeloid dendritic cells. Int. J. Mol. Sci. 24: 653.
8. Fan, Y., et al. 2023. GGC repeat expansion in NOTCH2NLC induces dysfunction in ribosome biogenesis and translation. Brain 146: 3373-3391.
9. Fernández-Parejo, N., et al. 2024. VAV2 orchestrates the interplay between regenerative proliferation and ribogenesis in both keratinocytes and oral squamous cell carcinoma. Sci. Rep. 14: 4060.

RESEARCH USE

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