SANTA CRUZ BIOTECHNOLOGY, INC.

# Y14 (4C4): sc-32312

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

The exon junction complex (EJC) is a multiprotein complex that assembles approximately 20-24 nucleotides upstream of exon-exon junctions in pre-mRNAs. It is involved in mRNA export, cytoplasmic localization, and nonsense-mediated mRNA decay. Members of the EJC include Y14, Aly/REF, Magoh, RNPS1, SRm160, and DEK. Aly/REF, Magoh, and Y14, identified as RBM8 in mouse and rat, make up the core of the EJC, and these proteins remain stably bound to spliced mRNAs in the cytoplasm until they are translated. Therefore, Y14, Aly/REF, and Magoh have the ability to communicate to the cytoplasm the processing history of the mRNA, including the position of the removed introns. The gene encoding human Y14 encodes three transcripts. Y14 is a ubiquitously expressed protein. Although Y14 shuttles to the cytoplasm, it is predominantly detected in the nucleus and is co-localized with oskar mRNA at the posterior pole of the cell.

## CHROMOSOMAL LOCATION

Genetic locus: RBM8A (human) mapping to 1q21.1; Rbm8a (mouse) mapping to 3 F2.1.

## SOURCE

Y14 (4C4) is a mouse monoclonal antibody raised against native full length human Y14.

## 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.

Y14 (4C4) is available conjugated to agarose (sc-32312 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-32312 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-32312 PE), fluorescein (sc-32312 FITC), Alexa Fluor® 488 (sc-32312 AF488), Alexa Fluor® 546 (sc-32312 AF546), Alexa Fluor® 594 (sc-32312 AF594) or Alexa Fluor® 647 (sc-32312 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-32312 AF680) or Alexa Fluor® 790 (sc-32312 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

Y14 (4C4) is recommended for detection of Y14 of human and *Xenopus laevis* origin, and RBM8 of mouse and rat 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), 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 Y14 siRNA (h): sc-38345, RBM8 siRNA (m): sc-38346, Y14 shRNA Plasmid (h): sc-38345-SH, RBM8 shRNA Plasmid (m): sc-38346-SH, Y14 shRNA (h) Lentiviral Particles: sc-38345-V and RBM8 shRNA (m) Lentiviral Particles: sc-38346-V.

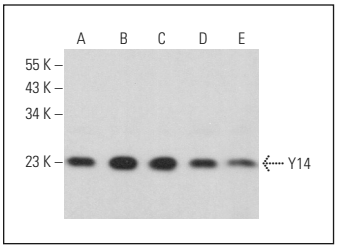
Molecular Weight of Y14: 24 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, NIH/3T3 nuclear extract: sc-2138 or Jurkat nuclear extract: sc-2132.

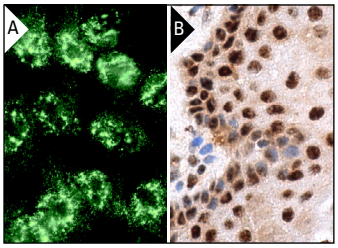
## STORAGE

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

## DATA




Y14 (4C4): sc-32312. Western blot analysis of Y14 expression in NIH/3T3 (**A**), HeLa (**B**) and Jurkat (**C**) nuclear extracts and A549 (**D**) and MCF7 (**E**) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.




Y14 (4C4): sc-32312. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human cervix tissue showing nuclear staining of squamous epithelial cells (**B**).

## SELECT PRODUCT CITATIONS


1. Bogolyubova, I.O., 2012. Localization of mRNA export factors in early mouse embryos. HOAJ Biol. 1: 11.
2. Bogolyubova, I., et al. 2013. FRET analysis of interactions between actin and exon-exon-junction complex proteins in early mouse embryos. Cell Tissue Res. 352: 277-285.
3. Fehler, O., et al. 2014. An evolutionarily conserved interaction of tumor suppressor protein Pdcd4 with the poly(A)-binding protein contributes to translation suppression by Pdcd4. Nucleic Acids Res. 42: 11107-11118.
4. Liang, R., et al. 2017. High expression of RBM8A predicts poor patient prognosis and promotes tumor progression in hepatocellular carcinoma. Oncol. Rep. 37: 2167-2176.
5. Ni, X., et al. 2018. FSTL1 suppresses tumor cell proliferation, invasion and survival in non-small cell lung cancer. Oncol. Rep. 39: 13-20.
6. Trzaska, C., et al. 2020. 2,6-diaminopurine as a highly potent corrector of UGA nonsense mutations. Nat. Commun. 11: 1509.
7. Liang, R., et al. 2021. Mechanism and molecular network of RBM8A-mediated regulation of oxaliplatin resistance in hepatocellular carcinoma. Front. Oncol. 10: 585452.
8. Duan, L., et al. 2022. Nuclear RNA binding regulates TDP-43 nuclear localization and passive nuclear export. Cell Rep. 40: 111106.
9. Uzonyi, A., et al. 2023. Exclusion of $m^6A$ from splice-site proximal regions by the exon junction complex dictates $m^6A$ topologies and mRNA stability. Mol. Cell 83: 237-251.e7.


## RESEARCH USE

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