SANTA CRUZ BIOTECHNOLOGY, INC.

hnRNP C1/C2 (4F4): sc-32308

BACKGROUND

Heterogeneous nuclear ribonucleoproteins (hnRNPs) constitute a set of polypeptides that contribute to pre-mRNA processing and transport, and also bind heterogeneous nuclear RNA (hnRNA), which are the transcripts produced by RNA polymerase II. hnRNP complexes are the major constituents of the spliceosome and in particular, the hnRNP A1 protein is one of the major pre-mRNA/mRNA binding proteins and also one of the most abundant proteins in the nucleus. hnRNP A1 and A2/B1 regulate the processing of pre-mRNA by directly antagonizing the association of various splicing factors and by influencing the splice site selection on pre-mRNA. The majority of hnRNP proteins components are localized to the nucleus; however some shuttle between the nucleus and the cytoplasm. Most hnRNP proteins, including hnRNP C1 and C2, contain one or more RNA binding domains and are implicated in the processing of pre-mRNA. hnRNPs F and H are largely related factors that preferentially associate with poly(rG) regions on RNA. Isoforms of these proteins are often generated by alternative processing of the pre-mRNA and by posttranslational modifications such as phosphorylation on serines and threonines and methylation of arginines.

REFERENCES

1. Swanson, M.S., et al. 1987. Primary structure of human nuclear ribonucleoprotein particle C proteins. Mol. Cell. Biol. 7: 1731-1739.
2. Gorlach, M., et al. 1994. The determinants of RNA-binding specificity of the heterogeneous nuclear ribonucleoprotein C proteins. J. Biol. Chem. 269: 23074-23078.

CHROMOSOMAL LOCATION

Genetic locus: HNRNPC (human) mapping to 14q11.2; Hnrnpc (mouse) mapping to 14 C2.

SOURCE

hnRNP C1/C2 (4F4) is a mouse monoclonal antibody raised against RNPs eluted from oligo (dT) cellulose column.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

hnRNP C1/C2 (4F4) is available conjugated to agarose (sc-32308 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-32308 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-32308 PE), fluorescein (sc-32308 FITC), Alexa Fluor® 488 (sc-32308 AF488), Alexa Fluor® 546 (sc-32308 AF546), Alexa Fluor® 594 (sc-32308 AF594) or Alexa Fluor® 647 (sc-32308 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-32308 AF680) or Alexa Fluor® 790 (sc-32308 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

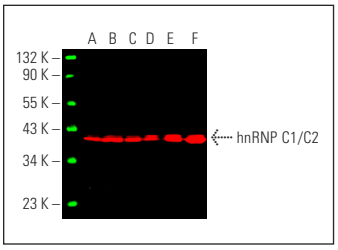
hnRNP C1/C2 (4F4) is recommended for detection of hnRNP C1 and hnRNP C2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for hnRNP C1/C2 siRNA (h): sc-35577, hnRNP C1/C2 siRNA (m): sc-35578, hnRNP C1/C2 shRNA Plasmid (h): sc-35577-SH, hnRNP C1/C2 shRNA Plasmid (m): sc-35578-SH, hnRNP C1/C2 shRNA (h) Lentiviral Particles: sc-35577-V and hnRNP C1/C2 shRNA (m) Lentiviral Particles: sc-35578-V.

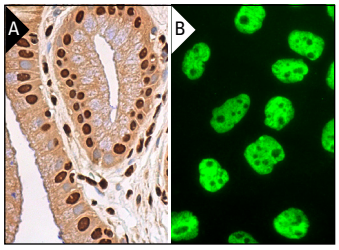
Molecular Weight of hnRNP C1/C2: 40 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or A-431 whole cell lysate: sc-2201.

DATA



hnRNP C1/C2 (4F4) Alexa Fluor® 790: sc-32308 AF790. Direct near-infrared western blot analysis of hnRNP C1/C2 expression in HeLa (**A**), Jurkat (**B**), THP-1 (**C**), A-431 (**D**) and K-562 (**E**) whole cell lysates and K-562 nuclear extract (**F**). Blocked with UltraCruz® Blocking Reagent: sc-516214. Cruz Marker™ Molecular Weight Standards detected with Cruz Marker MW Tag-Alexa Fluor® 680: sc-516730.



hnRNP C1/C2 (4F4): sc-32308. Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue showing nuclear staining of glandular cells (**A**). Immunofluorescence staining of formalin-fixed A-431 cells showing nuclear localization (**B**).

SELECT PRODUCT CITATIONS

1. Zhang, S., et al. 2004. DNA-dependent protein kinase (DNA-PK) phosphorylates nuclear DNA helicase II/RNA helicase A and hnRNP proteins in an RNA-dependent manner. Nucleic Acids Res. 32: 1-10.
2. Liu, N., et al. 2015. N^6-methyladenosine-dependent RNA structural switches regulate RNA-protein interactions. Nature 518: 560-564.
3. García-Heredia, J.M., et al. 2016. Numb-like (NumbL) downregulation increases tumorigenicity, cancer stem cell-like properties and resistance to chemotherapy. Oncotarget 7: 63611-63628.
4. Zhou, R., et al. 2017. Concerted effects of heterogeneous nuclear ribonucleoprotein C1/C2 to control vitamin D-directed gene transcription and RNA splicing in human bone cells. Nucleic Acids Res. 45: 606-618.
5. Liu, X.M., et al. 2019. Programmable RNA N^6-methyladenosine editing by CRISPR-Cas9 conjugates. Nat. Chem. Biol. 15: 865-871.

RESEARCH USE

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