

PRPF31 (A-6): sc-166792

BACKGROUND

PRPF31 (PRP31 pre-mRNA processing factor 31 homolog), also known as RP11, PRP31 or NY-BR-99, is a ubiquitously expressed protein that localizes to the nucleus and is found in Cajal bodies and speckles. PRPF31 is involved in pre-mRNA splicing and functions as a component of the U4/U6.U5 tri-snRNP (small nuclear ribonucleoprotein) complex. More specifically, PRPF31 is believed to mediate the tethering of the tri-snRNP to the spliceosome (a large ribonucleoprotein responsible for catalyzing the splicing of pre-mRNA), thereby assisting in the assembly of the mature spliceosome. Mutations in the gene encoding PRPF31 result in autosomal dominant retinitis pigmentosa type 11 (RP11), which leads to photoreceptor cell degeneration. RP11 patients initially exhibit a loss of their midperipheral visual field as well as night vision blindness. The disease eventually progresses to the loss of far peripheral visual field and finally the loss of central vision. This suggests that PRPF31 is a key player in the pre-mRNA splicing of photoreceptor-specific genes.

REFERENCES

1. Deery, E.C., et al. 2002. Disease mechanism for retinitis pigmentosa (RP11) caused by mutations in the splicing factor gene PRPF31. *Hum. Mol. Genet.* 11: 3209-3219.
2. Schaffert, N., et al. 2004. RNAi knockdown of hPrp 31 leads to an accumulation of U4/U6 di-snRNPs in Cajal bodies. *EMBO J.* 23: 3000-3009.
3. Yuan, L., et al. 2005. Mutations in PRPF31 inhibit pre-mRNA splicing of rhodopsin gene and cause apoptosis of retinal cells. *J. Neurosci.* 25: 748-757.

CHROMOSOMAL LOCATION

Genetic locus: PRPF31 (human) mapping to 19q13.42; Prpf31 (mouse) mapping to 7 A1.

SOURCE

PRPF31 (A-6) is a mouse monoclonal antibody raised against amino acids 81-330 mapping within an internal region of PRPF31 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-166792 X, 200 µg/0.1 ml.

PRPF31 (A-6) is available conjugated to agarose (sc-166792 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166792 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166792 PE), fluorescein (sc-166792 FITC), Alexa Fluor[®] 488 (sc-166792 AF488), Alexa Fluor[®] 546 (sc-166792 AF546), Alexa Fluor[®] 594 (sc-166792 AF594) or Alexa Fluor[®] 647 (sc-166792 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-166792 AF680) or Alexa Fluor[®] 790 (sc-166792 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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RESEARCH USE

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

APPLICATIONS

PRPF31 (A-6) is recommended for detection of PRPF31 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).

PRPF31 (A-6) is also recommended for detection of PRPF31 in additional species, including equine, canine and bovine.

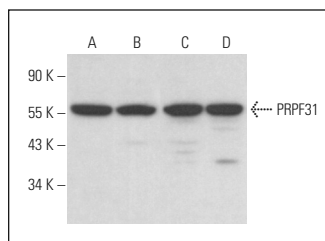
Suitable for use as control antibody for PRPF31 siRNA (h): sc-62892, PRPF31 siRNA (m): sc-62893, PRPF31 shRNA Plasmid (h): sc-62892-SH, PRPF31 shRNA Plasmid (m): sc-62893-SH, PRPF31 shRNA (h) Lentiviral Particles: sc-62892-V and PRPF31 shRNA (m) Lentiviral Particles: sc-62893-V.

PRPF31 (A-6) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

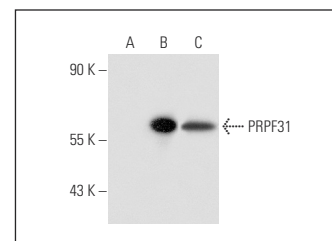
Molecular Weight of PRPF31: 61 kDa.

Positive Controls: PRPF31 (m): 293T Lysate: sc-127395, HUV-EC-C whole cell lysate: sc-364180 or JAR cell lysate: sc-2276.

DATA



PRPF31 (A-6): sc-166792. Western blot analysis of PRPF31 expression in JAR (A), HUV-EC-C (B), NIH/3T3 (C) and M1 (D) whole cell lysates.



PRPF31 (A-6): sc-166792. Western blot analysis of PRPF31 expression in non-transfected 293T: sc-117752 (A), mouse PRPF31 transfected 293T: sc-127395 (B) and JAR (C) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Xu, G., et al. 2018. Autosomal dominant retinitis pigmentosa-associated gene PRPF8 is essential for hypoxia-induced mitophagy through regulating ULK1 mRNA splicing. *Autophagy* 14: 1818-1830.
2. Shakhmantsir, I., et al. 2019. RNA splicing factor mutations that cause retinitis pigmentosa result in circadian dysregulation. *J. Biol. Rhythms* 35: 72-83.
3. Li, J., et al. 2021. PRPF31 is essential for the survival and differentiation of retinal progenitor cells by modulating alternative splicing. *Nucleic Acids Res.* E-published.

STORAGE

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