2,2,7-trimethylguanosine monoclonal antibody

Cat. No. C15200239

Type: Monoclonal	Specificity: Human, mouse, other (wide range): positive.
Size: 100 µg	Isotype: IgG2ak
Concentration: 1 µg/µl	Source: Mouse
Lot No.: 001	Purity: Protein G purified monoclonal antibody.
Storage buffer: PBS containing 50% glycerol, does not contain a preservative.	Storage conditions: Store at -20°C.
Precautions: This product is for research use only. Not for use in diagnostic or therapeutic procedures.	

Last Data Sheet Update: February 15, 2018

Description

Other names: N2,N2,7-Trimethylguanosine, m2,2,7G, m3G, TMG

Monoclonal antibody raised in mouse against 2,2,7-trimethylguanosine (m3G) conjugated to KLH.

Applications

Applications	Suggested dilution	References
IP	10 µg per IP	Fig 1
IF	1:1,000	Fig 2

Target Description

2,2,7-trimethylguanosine (m3G) is a modified nucleoside that is present at the 5'-cap site of U small nuclear RNAs (snRNAs) except for U6 snRNA. snRNAs are known to be involved in pre-mRNA splicing. Shortly after transcription, 7-methylguanosine (m7G, also called the cap structure) is added to 5'-end of U snRNA after which it is exported to the cytoplasm. The m7G-cap is subsequently converted to an m3G-cap by the cytoplasmic protein TSG1 and the m3G-capped U snRNA forms and snRNP with Sm proteins in the cytoplasm. The m3G-capped snRNP returns to the nucleus where it plays a role in the regulation of pre-mRNA splicing as a part of the spliceosome. The m3G-cap structure has also been reported in U3 and U8 snoRNA in the Cajal body during RNP biogenesis.

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Validation data

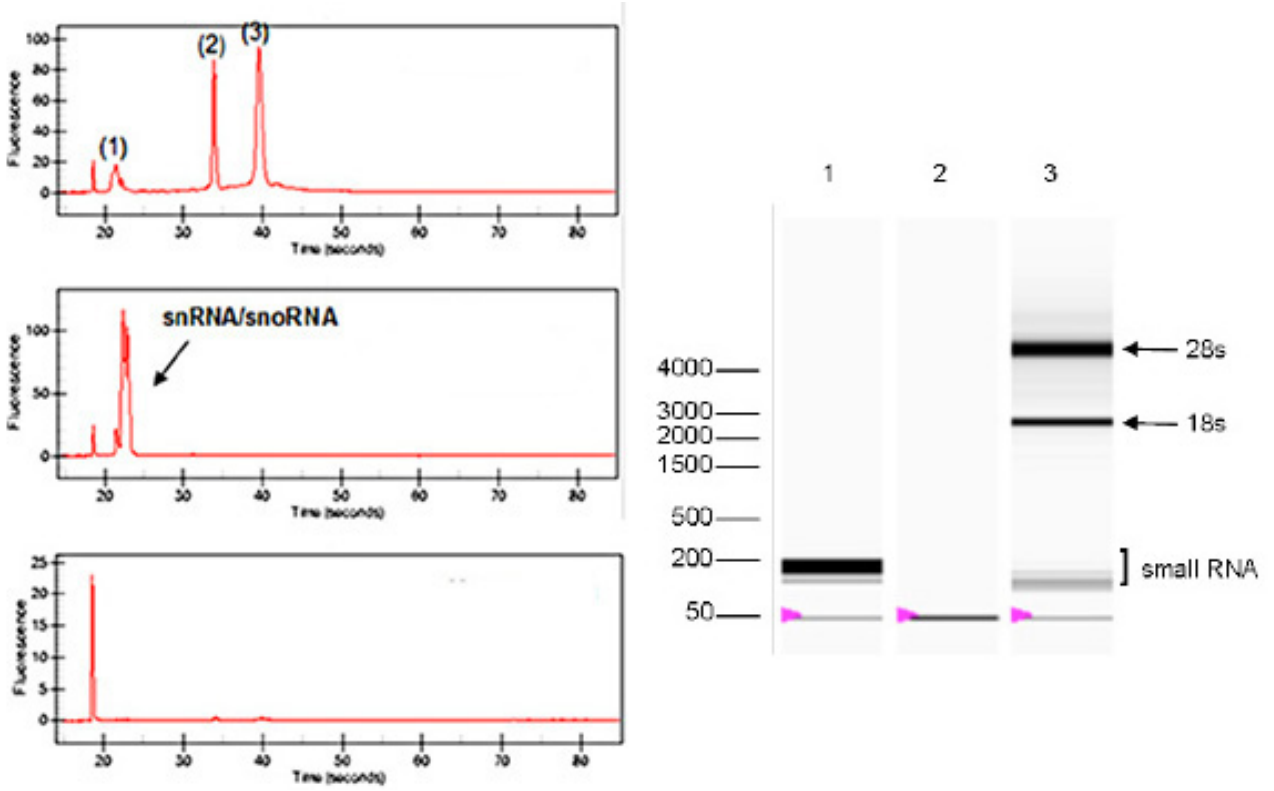

Figure 1. Immunoprecipitation using the Diagenode monoclonal antibody directed against m3G
Immunoprecipitation was performed on 40 µg total RNA isolated from HEK293 cells using 10 µg of the Diagenode monoclonal antibody against m3G (cat. No. C15200239) or with an equal amount of mouse IgG2a, used as a negative control. The immunoprecipitated RNA was subsequently analysed on a Bioanalyzer. Figure 1 (left) shows the Bioanalyzer profile obtained with the input RNA (top), the m3G antibody (middle) and the negative control (bottom). The position of the small, 18s and 28s RNA in the input is indicated (1, 2 and 3, respectively). The right figure shows the gel image for the m3G antibody, the negative control and the input (lane 1, 2 and 3 respectively). The marker (in bp) is shown on the left, the position of the 28s and 18s ribosomal RNA is indicated on the right.

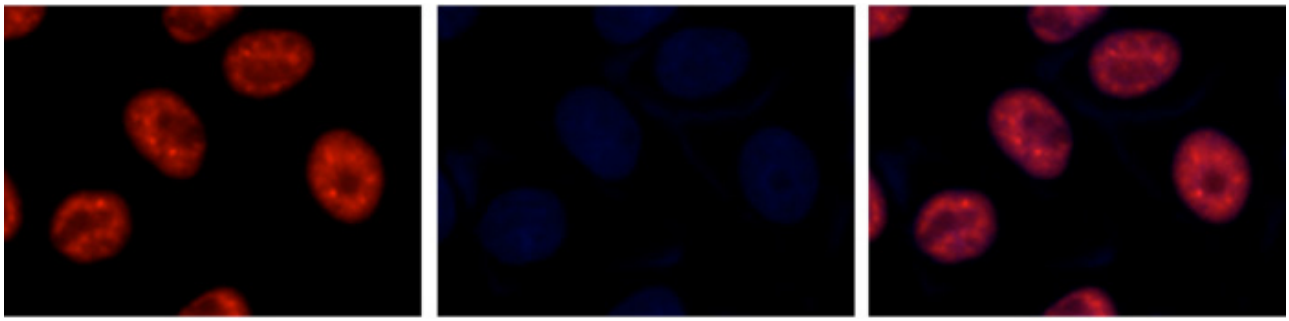

Figure 2. Immunofluorescence using the Diagenode monoclonal antibody directed against m3G

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HeLa cells were stained with the Diagenode monoclonal antibody against m3G (cat. No. C15200239). Cells were fixed with 4% formaldehyde for 10 min at RT, permeabilized with 0.5% Triton X-100 for 10 min at RT and blocked with PBS containing 1% BSA and 0.05% Tween20. The cells were immunofluorescently labeled with the m3G antibody (left) diluted 1:1,000 in blocking solution followed by a goat anti-mouse antibody conjugated to Alexa594. The middle panel shows staining of the nuclei with DAPI. A merge of the two stainings is shown on the right.

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