SYSY Antibodies

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METTL3

Cat.No. 417 003; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin was added for stabilization. For **reconstitution** add 50 µl H_2O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C to -80°C until use. Antibodies should be stored at +4°C when still lyophilized. Do not freeze! For detailed information, see back of the data sheet.
Applications	**WB**: 1 : 1000 (AP staining) **IP**: not tested yet **ICC**: 1 : 500 **IHC**: not tested yet **IHC-P (FFPE)**: not tested yet
Immunogen	Recombinant protein corresponding to AA 2 to 118 from mouse METTL3 (UniProt Id: Q8C3P7)
Reactivity	Reacts with: mouse (Q8C3P7), human (Q86U44), rat (F7FFC6). Other species not tested yet.
Specificity	Specific for isoform 1 K.D. validated PubMed: 34108665

TO BE USED IN VITRO / FOR RESEARCH ONLY
NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

Background

The **METTL3**-METTL14 heterodimer forms a N6-methyltransferase complex that methylates adenosine residues of RNAs at the 5'-[AG]GAC-3' consensus sites. N6-methyladenosine (m6A) has been shown to function as an important regualtory element in many processes like the circadian clock, differentiation of embryonic stem cells, primary miRNA processing, mRNA splicing, translation efficiency, mRNA editing and stability.

Selected References for 417 003

RNA m6A modification orchestrates a LINE-1-host interaction that facilitates retrotransposition and contributes to long gene vulnerability.
Xiong F, Wang R, Lee JH, Li S, Chen SF, Liao Z, Hasani LA, Nguyen PT, Zhu X, Krakowiak J, Lee DF, et al.
Cell research (2021) : . . **WB; KD verified; tested species: human**

m6A-driven SF3B1 translation control steers splicing to direct genome integrity and leukemogenesis.
Cieśla M, Ngoc PCT, Muthukumar S, Todisco G, Madej M, Fritz H, Dimitriou M, Incarnato D, Hellström-Lindberg E, Bellodi C
Molecular cell (2023) 837: 1165-1179.e11. . **WB; KD verified; tested species: human**

Enhancer RNA m6A methylation facilitates transcriptional condensate formation and gene activation.
Lee JH, Wang R, Xiong F, Krakowiak J, Liao Z, Nguyen PT, Moroz-Omori EV, Shao J, Zhu X, Bolt MJ, Wu H, et al.
Molecular cell (2021) 8116: 3368-3385.e9. . **WB; tested species: human**

Selected General References

m(6)A RNA modification controls cell fate transition in mammalian embryonic stem cells.
Batista PJ et al. Cell Stem Cell (2014) PubMed:25456834

The m(6)A Methyltransferase METTL3 Promotes Translation in Human Cancer Cells.
Lin S et al. Mol. Cell (2016) PubMed:27117702

Structural basis of N(6)-adenosine methylation by the METTL3-METTL14 complex.
Wang X et al. Nature (2016) PubMed:27281194

N6-methyladenosine modification destabilizes developmental regulators in embryonic stem cells.
Wang Y et al. Nat. Cell Biol. (2014) PubMed:24394384

A METTL3-METTL14 complex mediates mammalian nuclear RNA N6-adenosine methylation.
Liu J et al. Nat. Chem. Biol. (2014) PubMed:24316715

RNA-methylation-dependent RNA processing controls the speed of the circadian clock.
Fustin JM et al. Cell (2013) PubMed:24209618

Access the online factsheet including applicable protocols at https://sysy.com/product/417003 or scan the QR-code.

FAQ - How should I store my antibody?

Shipping Conditions

- All SYSY antibodies and control proteins/peptides are shipped lyophilized (vacuum freeze-dried). In this form, they remain stable without loss of quality at ambient temperatures for several weeks.

Storage of Sealed Vials after Delivery

- **Unlabeled** and **biotin-labeled antibodies** and **control proteins** should be stored at **4°C** before reconstitution. **Do not freeze lyophilized antibodies**. Temperatures below 0°C may impair performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long-term storage of lyophilized fluorophore-conjugates may cause aggregation.
- **Control peptides** should be stored at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- **Do not use frost-free ("no-frost") freezers.** These units periodically warm to remove ice buildup, causing freeze–thaw cycles that can damage antibodies.
- Store vials in areas with minimal temperature fluctuation - preferably toward the back of the freezer, not on the door.
- Aliquot reconstituted antibodies and store at –20°C to –80°C.
- Avoid very small aliquots (<20 µL), as evaporation and adsorption to tube surfaces can reduce antibody concentration and activity.
- Use the smallest practical storage vial to minimize surface area.
- Adding glycerol to a final concentration of 50% prevents freezing at -20°C, allowing storage in liquid form and effectively avoiding freeze–thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C

Monoclonal Antibodies

- **Ascites and hybridoma supernatant:** Store at -20°C to -80°C
  Prolonged storage at 4°C is not recommended, as proteases present in ascites may degrade antibodies.
- **Purified IgG:** Store at -20°C to -80°C
  Adding a carrier protein (e.g., BSA) enhances long-term stability.
  Many SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Polyclonal Antibodies

- **Crude antisera:** Can be stored at 4°C with antimicrobials added, but -20°C to -80°C is preferred
- **Affinity-purified antibodies:** Less stable than antisera; store at -20°C to -80°C
  Adding a carrier protein such as BSA improves long-term stability.
  Most SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Fluorescence-labeled Antibodies

- Store as a liquid with 1:1 (v/v) glycerol at -20°C, and protect from light exposure

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All purified SYSY antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the volume of deionized water specified in the corresponding datasheet. If a larger final volume is desired, first add the recommended amount of water, then adjust with PBS and, if needed, add a stabilizing carrier protein (e.g., BSA) to a final concentration of 2%. Some SYSY antibodies already contain albumin; please take this into account before adding additional carrier protein.

For complete reconstitution, carefully remove the vial cap. After adding water, briefly vortex the solution. To collect the liquid at the bottom of the vial, place the vial inside a 50 ml centrifuge tube padded with paper and centrifuge briefly.

- If desired, small amounts of azide or thimerosal may be added to prevent microbial growth. This is particularly recommended when storing an aliquot at 4°C.
- After reconstitution of fluorescence-labeled antibodies, add glycerol 1:1 (v/v) to achieve a final concentration of 50%. This prevents freezing at –20°C and keeps the antibody in liquid form, effectively avoiding freeze–thaw cycles.
- Glycerol may also be added to unlabeled primary antibodies as a general measure to prevent freeze–thaw damage.
- For further guidance, please refer to our **storage tips** and recommendations for reconstituted antibodies, control peptides, and control proteins.