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Nucleocapsid CoV-2

Cat.No. HS-452 011; Monoclonal mouse antibody, 200 µl purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	200 µl purified IgG, lyophilized. Albumin and azide were added for stabilization. For **reconstitution** add 200 µl H_2O. 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.
Concentration	0.5 mg/ml
Applications	**WB**: 1 : 1000 (AP staining) **IP**: not tested yet **ICC**: 1 : 1000 **IHC**: 1 : 1000 **IHC-P (FFPE)**: 1 : 1000 **ELISA**: yes (see remarks)
Clone	4A8
Subtype	IgG2b (κ light chain)
Immunogen	Recombinant protein corresponding to AA 1 to 419 from SARS-Cov-2 Nucleocapsid protein (UniProt Id: P0DTC9)
Epitop	AA 16 to 25 from SARS-Cov-2 Nucleocapsid protein (UniProt Id: P0DTC9)
Specificity	Specific for nucleocapsid from SARS-CoV2
Remarks	**ELISA**: Suitable as capture antibody for sandwich-ELISA. Please refer to the protocol for suitable detector antibodies. Biotinylated mouse anti-Nucleocapsid antibody (cat. no. HS-452 111BT) can be used as detector antibody.

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

Background

The **s**evere **a**cute **r**espiratory **s**yndrome **co**rona**v**irus type **2** (SARS-CoV2) is an enveloped positive-sense single stranded RNA virus that has been identified in the beginning of 2020 (1). It infects human host cells by docking via its spike protein (S) to the ACE2 surface receptor (2) and can cause mild to very severe and even deadly Covid-19 courses (3).
The very abundant Nucleocapsid or N-protein packages the viral RNA (4) and shares only little homology to other abundant members of the coronavirus family like NL63, 229E, HKU1 or OC43. This characteristic makes it a suitable target to discriminate between Covid-19 and other coronavirus infections.

Selected References for HS-452 011

Assessing and improving the validity of COVID-19 autopsy studies - A multicentre approach to establish essential standards for immunohistochemical and ultrastructural analyses.
Krasemann S, Dittmayer C, von Stillfried S, Meinhardt J, Heinrich F, Hartmann K, Pfefferle S, Thies E, von Manitius R, Aschman TAD, Radke J, et al.
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Proteomic and transcriptomic profiling of brainstem, cerebellum and olfactory tissues in early- and late-phase COVID-19.
Radke J, Meinhardt J, Aschman T, Chua RL, Farztdinov V, Lukassen S, Ten FW, Friebel E, Ishaque N, Franz J, Huhle VH, et al.
Nature neuroscience (2024) 273: 409-420. . **IHC; tested species: human**

Post-mortem histopathology of pituitary and adrenals of COVID-19 patients.
Fitzek A, Gerling M, Püschel K, Saeger W
Legal medicine (Tokyo, Japan) (2022) 57: 102045. . **IHC-P; tested species: human**

ApoE4 Homozygosity Is Associated With Increased Microglia Activation in Fatal COVID-19.
Hamdan A, El-Amri Y, Heinrich F, Mohamed OAA, Sepulveda-Falla D, Glatzel M, Matschke J, Krasemann S
Neuropathology : official journal of the Japanese Society of Neuropathology (2025) 456: e70033. . **IHC-P; tested species: human**

Distinct tissue niches direct lung immunopathology via CCL18 and CCL21 in severe COVID-19.
Mothes R, Pascual-Reguant A, Koehler R, Liebeskind J, Liebheit A, Bauherr S, Philipsen L, Dittmayer C, Laue M, von Manitius R, Elezkurtaj S, et al.
Nature communications (2023) 141: 791. . **IHC-P; tested species: human**

CYP19A1 mediates severe SARS-CoV-2 disease outcome in males.
Stanelle-Bertram S, Beck S, Mounogou NK, Schaumburg B, Stoll F, Al Jawazneh A, Schmal Z, Bai T, Zickler M, Beythien G, Becker K, et al.
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Young COVID-19 Patients Show a Higher Degree of Microglial Activation When Compared to Controls.
Matschke J, Lahann H, Krasemann S, Altmeppen H, Pfefferle S, Galliciotti G, Fitzek A, Sperhake JP, Ondruschka B, Busch M, Rotermund N, et al.
Frontiers in neurology (2022) 13: 908081. . **IHC-P; tested species: human**

Selected General References

The species Severe acute respiratory syndrome-related coronavirus: classifying 2019-nCoV and naming it SARS-CoV-2.
et al. Nat Microbiol (2020) PubMed:32123347

SARS-CoV-2 Cell Entry Depends on ACE2 and TMPRSS2 and Is Blocked by a Clinically Proven Protease Inhibitor.
Hoffmann M et al. Cell (2020) PubMed:32142651

Epidemiological and clinical characteristics of 99 cases of 2019 novel coronavirus pneumonia in Wuhan, China: a descriptive study.
Chen N et al. Lancet (2020) PubMed:32007143

Access the online factsheet including applicable protocols at https://sysy-histosure.com/product/HS-452011 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.