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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**: 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.
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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 our antibodies and control proteins / peptides are shipped lyophilized (vacuum freeze-dried) and are stable in this form 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. **They must not be stored in the freezer when still lyophilized!** Temperatures below zero may cause loss of performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long term storage (several months) may lead to aggregation.
- **Control peptides** should be kept at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- The storage freezer must not be of the frost-free variety ("no-frost freezer"). This cycle between freezing and thawing (to reduce frost-build-up), which is exactly what should be avoided. For the same reason, antibody vials should be placed in an area of the freezer that has minimal temperature fluctuations, for instance towards the back rather than on a door shelf.
- Aliquot the antibody and store frozen (-20°C to -80°C). Avoid very small aliquots (below 20 µl) and use the smallest storage vial or tube possible. The smaller the aliquot, the more the stock concentration is affected by evaporation and adsorption of the antibody to the surface of the storage vial or tube. Adsorption of the antibody to the surface leads to a substantial loss of activity.
- The addition of glycerol to a final concentration of 50% lowers the freezing point of your stock and keeps your antibody at -20°C in liquid state. This efficiently avoids freeze and thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C.

Monoclonal Antibodies

- **Ascites** and **hybridoma supernatant** should be stored at -20°C up to -80°C. **Prolonged storage at 4°C is not recommended!** Unlike serum, ascites may contain proteases that will degrade the antibodies.
- **Purified IgG** should be stored at -20°C up to -80°C. Adding a carrier protein like BSA will increase long term stability. Many of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Polyclonal Antibodies

- **Crude antisera**: With anti-microbials added, they may be stored at 4°C. However, frozen storage (-20°C up to -80°C) is preferable.
- **Affinity purified antibodies**: Less robust than antisera. Storage at -20°C up to -80°C is recommended. Adding a carrier protein like BSA will increase long term stability. Most of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Fluorescence-labeled Antibodies

- Store as a liquid with 1 : 1 (v/v) glycerol at -20°C. Protect these antibodies from light exposure.

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All our purified antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the amount of deionized water given in the respective datasheet. If higher volumes are preferred, add water as mentioned above and then the desired amount of PBS and a stabilizing carrier protein (e.g. BSA) to a final concentration of 2%. Some of our antibodies already contain albumin. Take this into account when adding more carrier protein.
  For complete reconstitution, carefully remove the lid. After adding water, briefly vortex the solution. You can spin down the liquid by placing the vial into a 50 ml centrifugation tube filled with paper.
- If desired, add small amounts of azide or thimerosal to prevent microbial growth. This is especially recommended if you want to keep an aliquot a 4°C.
- After reconstitution of fluorescence-labeled antibodies, add 1 : 1 (v/v) glycerol to a final concentration of 50%. This lowers the freezing point of your stock and keeps your antibody in liquid state at -20°C.
- Glycerol may also be added to unlabeled primary antibodies. It is a suitable way to avoid freeze-thaw cycles.
- Please refer to our **tips and hints for subsequent storage** of reconstituted antibodies and control peptides and proteins.