SYSY Antibodies

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CD31 (PECAM-1) human specific

Cat.No. 351 004; Polyclonal Guinea pig antibody, 100 µl antiserum (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µl antiserum, lyophilized. For **reconstitution** add 100 µl H_2O, then aliquot and store at -20°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**: 1 : 500 (see remarks) **IHC-P (FFPE)**: 1 : 200 up to 1 : 500 **iDISCO**: external data (see remarks)
Immunogen	Recombinant protein corresponding to AA 26 to 601 from human CD31 (UniProt Id: P16284)
Reactivity	Reacts with: human (P16284), pig. No signal: mouse (Q08481). Other species not tested yet.
Remarks	**IHC**: Antigen retrieval with citrate buffer pH 6 is required. **iDISCO**: This antibody has been successfully applied and published for this method by customers (see application-specific references).

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

Background

CD31 or platelet/endothelial cell adhesion molecule-1 (PECAM-1) is a cell adhesion molecule that contains a single trans-membrane domain and 6 Ig-like C2-type (immunoglobulin-like) domains (1). It is expressed on the surface of leukocytes and platelets and is primarily concentrated at endothelial cell-cell junctions (2). CD31 plays a role in several important biological processes, such as vascular development, maintenance of vascular endothelial barrier function and leukocyte emigration at inflammatory sites. In addition, CD31 promotes cancer metastasis by inducing epithelial-mesenchymal transition (3).

Selected References for 351 004

Fibrinogen Induces Microglia-Mediated Spine Elimination and Cognitive Impairment in an Alzheimer's Disease Model.
Merlini M, Rafalski VA, Rios Coronado PE, Gill TM, Ellisman M, Muthukumar G, Subramanian KS, Ryu JK, Syme CA, Davalos D, Seeley WW, et al.
Neuron (2019) : . . **IHC, IDISCO; tested species: human**

Vascular Development of Fetal and Postnatal Neocortex of the Pig, the European Wild Boar Sus scrofa.
Sobierajski E, Czubay K, Beemelmans C, Beemelmans C, Meschkat M, Uhlenkamp D, Meyer G, Wahle P
The Journal of comparative neurology (2024) 53212: e70011. . **WB, IHC; tested species: pig**

CD8+ T cells target cerebrovasculature in children with cerebral malaria.
Riggle BA, Manglani M, Maric D, Johnson KR, Lee MH, Lopes Abath Neto O, Taylor TE, Seydel KB, Nath A, Miller LH, McGavern DB, et al.
The Journal of clinical investigation (2019) : . . **IHC-P; tested species: human**

KRAS-dependent glycolytic reprogramming of endothelial cells in sporadic arteriovenous malformations.
Wu R, Khosraviani N, Mansur A, Boudreau E, Largoza GE, Park S, Gustafson D, Raju S, Ching C, Klip A, Wälchli T, et al.
EMBO molecular medicine (2026) : . . **IHC; tested species: human**

Decoding the spatiotemporal development of the blood-brain barrier in human cortex.
Li Z, Li Y, He Z, Wang C, Zhang Y, Li R, Jin L, Jiao J, Ji F, Zhu B, Zhang J, et al.
Cell stem cell (2026) 335: 853-871.e10. . **IHC; tested species: human**

ERG preserves endothelial identity to limit atherosclerosis.
Botts SR, Scipione CA, Schulz K, Breda LCD, Ellis K, Ho C, Raju S, Prajapati K, Yu K, Khan AB, Polenz CK, et al.
Nature communications (2026) : . . **IHC-P; tested species: human**

Decoding the spatiotemporal development of human meninges.
Li Y, Li Z, She Y, He Z, Wang C, Zhang Y, Li R, Jin L, Ji F, Du P, Dong J, et al.
Cell (2026) 18915: 4756-4774.e21. . **IHC; tested species: human**

Synovial fibroblast gene expression is associated with sensory nerve growth and pain in rheumatoid arthritis.
Bai Z, Bartelo N, Aslam M, Murphy EA, Hale CR, Blachere NE, Parveen S, Spolaore E, DiCarlo E, Gravallese EM, Smith MH, et al.
Science translational medicine (2024) 16742: eadk3506. . **IDISCO; tested species: human**

Role of A Novel Angiogenesis FKBPL-CD44 Pathway in Preeclampsia Risk Stratification and Mesenchymal Stem Cell Treatment.
Todd N, McNally R, Alqudah A, Jerotic D, Suvakov S, Obradovic D, Hoch D, Hombrebueno JR, Campos GL, Watson CJ, Gojnic-Dugalic M, et al.
The Journal of clinical endocrinology and metabolism (2021) 1061: 26-41. . **IHC-P; tested species: human**

Selected General References

PECAM-1: regulator of endothelial junctional integrity.
Privratsky JR et al. Cell Tissue Res. (2014) PubMed:24435645

CD31 and D2-40 Contribute to Peritoneal Metastasis of Colorectal Cancer by Promoting Epithelial-Mesenchymal Transition.
Zhu X et al. Gut Liver (2021) PubMed:32390409

Access the online factsheet including applicable protocols at https://sysy.com/product/351004 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.