

Collagen type IV

Cat.No. 462 004; Polyclonal Guinea pig antibody, 100 µl antiserum (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µl antiserum, lyophilized. For reconstitution add 100 µl H ₂ O, 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: not tested yet IHC: 1 : 250 up to 1 : 1000 (see remarks) IHC_P: 1 : 500 up to 1 : 100 (see remarks) IHC_FR: 1 : 500 up to 1 : 1000 (see remarks) IHC_G: 1 : 500 up to 1 : 1000 (see remarks)
Immunogen	human heterotrimeric Collagen type IV containing two α 1-like (UniProt Id: P02462) and one α 2-like (UniProt Id: P08572) chains.
Reactivity	Reacts with: mouse (P02463), rat (F1MA59), human (P02462), human (P08572), mouse (P08122), rat (F1M6Q3). Other species not tested yet.
Remarks	IHC: antigen retrieval (0.2 mg/ml pepsin in 0.2 M HCl for 20 min at 37 °C) is recommended. IHC_P: strong antigen retrieval is necessary - e.g.: antigen retrieval with Tris- EDTA buffer pH 9.0 in a food steamer followed with pepsin antigen retrieval or an antigen retrieval in a pressure cooker IHC_FR: PFA fixation is recommended. IHC_G: Fixation with 3% glyoxal, 1% acetic acid, 20% ethanol in ddH ₂ O according to Richter et al. 2017, or 9% glyoxal, 8% acetic acid in ddH ₂ O according to Konno et al. 2023 are recommended.

Background

Type IV collagen is a unique member of the large collagen superfamily which in vertebrates comprises 28 different types. Unlike most collagens, type IV collagen occurs only in the basement membranes (BMs) and comprises up to six genetically distinct α-chains designated α1(IV) to α6(IV). Out of many potential combinations, the chains interact and assemble with a remarkable specificity to form only three distinct heterotrimers of α1α1α2, α3α4α5, and α5α5α6 (1). It has been shown that ablation of COL4 α 1/2 results in abnormal BM structure and embryonic lethality at E10.5–E11.5, although BM formation during early development is unaffected (2).

Selected General References

Mammalian collagen IV.
Khoshnoodi J, Pedchenko V, Hudson BG
Microscopy research and technique (2008) 715: 357-70. .

Collagen IV is essential for basement membrane stability but dispensable for initiation of its assembly during early development.

Pöschl E, Schlötzer-Schrehardt U, Brachvogel B, Saito K, Ninomiya Y, Mayer U
Development (Cambridge, England) (2004) 1317: 1619-28. .

Access the online factsheet including applicable protocols at <https://sysis.com/product/462004> or scan the QR-code.



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

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.