SYSY | HistoSure

Rudolf-Wissell-Str. 28a
37079 Göttingen, Germany
Phone: +49 551-50556-0
Fax: +49 551-50556-384
E-mail: sales@sysy.com
Web: sysy-histosure.com

Calreticulin mutation CAL2

Cat.No. HS-315 111-L; Monoclonal mouse antibody, 250 µl purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	250 µl purified IgG, lyophilized. Albumin and azide were added for stabilization. For **reconstitution** add 250 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.
Applications	**WB**: not tested yet **Dot blot**: not tested yet **ICC**: not tested yet **IHC**: not tested yet **IHC-P**: 1 : 20 up to 1 : 40
Clone	CAL2
Subtype	IgG2a (λ light chain)
Immunogen	Recombinant protein corresponding to the neoepitope in human mutated calreticulin. (UniProt Id: P27797)
Reactivity	Reacts with: human (P27797). Other species not tested yet.
Specificity	Specific for the neoepitope in mutated Calreticulin.

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

Background

Calreticulin (CALR) mutations have been identified as a major driver in **m**yelo**p**roliferative **n**eoplasms (MPNs). In contrast to JAK2 mutations that are mainly associated with **p**olycythaemia **v**era (PV), CALR mutations are specifically associated with **p**rimary **m**yelo**f**ibrosis (PMF) and **e**ssential **t**hrombocythaemia (ET).
All known types of CALR mutations result in a novel C-terminus of the protein. This harbors a common epitope expressed in all kinds of CALR mutations. The **CAL2** antibody is directed against this neoepitope. Therefore, it can be concluded that the CAL2 antibody is able to detect all CALR mutations.
It labels the megakaryocytes in myeloproliferative neoplasms (essential thrombocythaemia (ET) and primary myelofibrosis (PMF)) with CALR mutation and enables to distinguish them from polycythemia vera (PV), from CALR mutation negative ET and PMF and from reactive bone marrow.

Selected References for HS-315 111-L

Calreticulin mutation specific CAL2 immunohistochemistry accurately identifies rare calreticulin mutations in myeloproliferative neoplasms.
Mózes R, Gángó A, Sulák A, Vida L, Reiniger L, Timár B, Krenács T, Alizadeh H, Masszi T, Gaál-Weisinger J, Demeter J, et al.
Pathology (2018) : . . **IHC-P; tested species: human**

A new monoclonal antibody (CAL2) detects CALRETICULIN mutations in formalin-fixed and paraffin-embedded bone marrow biopsies.
Stein H, Bob R, Dürkop H, Erck C, Kämpfe D, Kvasnicka HM, Martens H, Roth A, Streubel A
Leukemia (2016) 301: 131-5. . **IHC-P; tested species: human**

Mutation specific immunohistochemistry is highly specific for the presence of calreticulin mutations in myeloproliferative neoplasms.
Andrici J, Farzin M, Clarkson A, Sioson L, Sheen A, Watson N, Toon CW, Koleth M, Stevenson W, Gill AJ
Pathology (2016) 484: 319-24. . **IHC-P; tested species: human**

CAL2 Immunohistochemical Staining Accurately Identifies CALR Mutations in Myeloproliferative Neoplasms.
Nomani L, Bodo J, Zhao X, Durkin L, Loghavi S, Hsi ED
American journal of clinical pathology (2016) 1464: 431-8. . **IHC-P; tested species: human**

Selected General References

Somatic CALR mutations in myeloproliferative neoplasms with nonmutated JAK2.
Nangalia J, Massie CE, Baxter EJ, Nice FL, Gundem G, Wedge DC, Avezov E, Li J, Kollmann K, Kent DG, Aziz A, et al.
The New England journal of medicine (2013) 36925: 2391-2405. .

Somatic mutations of calreticulin in myeloproliferative neoplasms.
Klampfl T, Gisslinger H, Harutyunyan AS, Nivarthi H, Rumi E, Milosevic JD, Them NC, Berg T, Gisslinger B, Pietra D, Chen D, et al.
The New England journal of medicine (2013) 36925: 2379-90. .

Access the online factsheet including applicable protocols at https://sysy-histosure.com/product/HS-315111-L 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.