

## Ki67 mouse specific

Cat.No. HS-398 108; Recombinant rabbit antibody, 100 µl recombinant IgG (lyophilized)

### Data Sheet

Reconstitution/ Storage	100 µl purified recombinant IgG, lyophilized. Albumin and azide were added for stabilization. For <b>reconstitution</b> add 100 µl H <sub>2</sub> O. 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	<b>WB:</b> not tested yet <b>IP:</b> not tested yet <b>ICC:</b> 1 : 500 <b>IHC:</b> 1 : 500 (see remarks) <b>IHC-P:</b> 1 : 500
Clone	Rb311H2
Subtype	IgG1 (κ light chain)
Immunogen	Synthetic peptide corresponding to AA 1234 to 1252 from mouse Ki67 (UniProt Id: E9PVX6)
Reactivity	Reacts with: mouse (E9PVX6). No signal: human (P46013), rat (D4A0Y6). Other species not tested yet.
Remarks	This antibody is a chimeric antibody based on the monoclonal rat antibody clone 311H2. The constant regions of the heavy and light chains have been replaced by rabbit specific sequences. Therefore, the antibody can be used with standard anti-rabbit secondary reagents. The antibody has been expressed in mammalian cells. <b>IHC:</b> Heat-mediated antigen retrieval (in citrate buffer pH 6) is required for immunohistochemical staining.

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

## Background

Expression of the nuclear protein **Ki 67** is strictly associated with cell proliferation and preferentially expressed during the late G1, S, G2 and M phases of the cell cycle. Resting cells (G0 phase) lack Ki 67 expression.

Immunohistochemical detection of Ki 67 is a simple and reproducible method to determine the tumour proliferative index and is a predictive and prognostic biomarker in certain types of human cancer, such as breast cancer, gastric cancer or prostate cancer. Moreover, higher Ki 67 scores may be associated with increased tumor sensitivity to radiation therapy and chemotherapy. In preclinical and clinical studies Ki 67 expression is used as a pharmacodynamic biomarker. Absence of a decrease in Ki 67 early in treatment might be predictive of therapeutic failure.

## Selected General References

Clinical predictors of pathological complete response to neoadjuvant chemotherapy in triple-negative breast cancer.  
Nakashoji A et al. Oncol Lett (2017) PubMed:28943920

Prognostic role of Ki-67 score in localized prostate cancer: A systematic review and meta-analysis.  
Berlin A et al. Urol. Oncol. (2017) PubMed:28648414

Immunohistochemical analysis of PTEN, HER2/neu, and ki67 expression in patients with gastric cancer and their association with survival.

Badary DM et al. Pathophysiology (2017) PubMed:28262306

Correlation between the Ki-67 proliferation index and response to radiation therapy in small cell lung cancer.  
Ishibashi N et al. Radiat Oncol (2017) PubMed:28086989

Comparative study of two complementary proliferation markers in 200 breast carcinomas: Ki67 and mitotic index.  
El Amine O et al. Tunis Med (2016) PubMed:28972249

Ki-67 is a prognostic parameter in breast cancer patients: results of a large population-based cohort of a cancer registry.  
Inwald EC et al. Breast Cancer Res. Treat. (2013) PubMed:23674192

Assessment of Ki67 in breast cancer: recommendations from the International Ki67 in Breast Cancer working group.  
Dowsett M et al. J. Natl. Cancer Inst. (2011) PubMed:21960707

Clinical significance of Ki-67 in neoadjuvant chemotherapy for primary breast cancer as a predictor for chemosensitivity and for prognosis.

Nishimura R et al. Breast Cancer (2010) PubMed:19730975

The Ki-67 protein: from the known and the unknown.  
Scholzen T et al. J. Cell. Physiol. (2000) PubMed:10653597

The prognostic value of Ki67 immunostaining in non-Hodgkin's lymphoma.  
Hall PA et al. J. Pathol. (1988) PubMed:2450981

Access the online factsheet including applicable protocols at <https://sysy-histosure.com/product/HS-398108> 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 at 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.