

β-Galactosidase

Cat.No. 435 004; 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) ICC: 1 : 500 up to 1 : 1000 IHC: 1 : 500 IHC-P: 1 : 500
Immunogen	Recombinant protein corresponding to AA 1 to 1024 from E.coli β-galactosidase (UniProt Id: P00722)
Specificity	Specific for β-Galactosidase.

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

Background

Galactosidases are enzymes that catalyze the hydrolysis of galactosides into monosaccharides. They can be classified as α- or **β-Galactosidase**. In E.coli the latter one is encoded by the Lac-Z gene and is responsible for breaking down the disaccharide lactose into its monosaccharide components, glucose and galactose.

β-Galactosidase can be used to track the efficiency of bacterial transformation with a recombinant plasmid in a process called Blue/White Color Screening. It is also a frequently used reporter gene to monitor tissue specific gene-expression.

Selected General References

Lac z Histochemistry and immunohistochemistry reveal ephrin-B ligand expression in the inner ear.
Bianchi LM et al. J. Histochem. Cytochem. (2002) PubMed:12486086

The lac-z reporter gene: a tool for in vitro studies of malignant glioma cell invasion.
Garcia-Cabrera I et al. Invasion Metastasis (1996) PubMed:9186546

Migratory patterns of lac-z transfected human glioma cells in the rat brain.
Pedersen PH et al. Int. J. Cancer (1995) PubMed:7558428

Spatial and temporal expression of an Antennapedia/lac Z gene construct integrated into the endogenous Antennapedia gene of Drosophila melanogaster.
Engström Y et al. Roux Arch. Dev. Biol. (1992) PubMed:28305895

Expression of the E. coli Lac Z gene from a defective HSV-1 vector in various human normal, cancer-prone and tumor cells.
Boothman DA et al. FEBS Lett. (1989) PubMed:2556295

Fusion of the promoter region of rRNA operon rrnB to lac Z gene.
Glaser G et al. Nucleic Acids Res. (1980) PubMed:6253913

The occurrence of beta-galactosidase in Escherichia coli.
LESTER G et al. J. Bacteriol. (1952) PubMed:14938338

Access the online factsheet including applicable protocols at <https://sysy.com/product/435004> 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.