

## Antibody Storage Guide

**Please always check datasheets for specific storage recommendations. We are not able to guarantee antibodies that have not been stored correctly. With proper storage and handling, most antibodies should retain activity for months, if not years.**

### Storage temperatures and conditions

For many of our antibodies, freezing at -20°C or -80°C in small aliquots is the optimal storage condition. Aliquoting minimizes damage due to freezing and thawing, as well as contamination introduced by pipetting from a single vial multiple times.

Aliquots are to be frozen and thawed once, with any remainder kept at 4°C. Upon receiving the antibody, centrifuge at 10,000g for 20 seconds to pull down solution that is trapped in the threads of the vial, and transfer aliquots into low-protein-binding microcentrifuge tubes.

The size of the aliquots will depend on how much one typically uses in an experiment. Aliquots should be no smaller than 10 µl; the smaller the aliquot, the more the stock concentration is affected by evaporation and adsorption of the antibody onto the surface of the storage vial.

In most cases, with the possible exception of ascites fluids which may contain proteases and should be frozen as soon as possible, storage at 4°C upon receipt of the antibody is acceptable for one to two weeks, followed by freezing for long-term storage. Again, it is important to follow the recommendations on the datasheet.

### Preventing contamination with sodium azide

To prevent microbial contamination, sodium azide can be added to an antibody preparation to a final concentration of 0.02% (w/v). Many Abcam antibodies already contain this preservative at concentrations ranging from 0.02 to 0.05%. This will be indicated on the datasheets in the section titled "Storage buffer".

### Freeze/thaw damage azide

Repeated freeze/thaw cycles can denature an antibody, causing it to form aggregates that reduce the antibody's binding capacity.

Storing at -20°C should be adequate for most antibodies; there is no appreciable advantage to storing at -80°C.

The freezer must not be of the frost-free variety. These 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.

Some researchers add the cryoprotectant glycerol to a final concentration of 50% to prevent freeze/thaw damage; glycerol will lower the freezing point to below -20°C.

While this may be acceptable for many antibodies, only a small percentage of the antibodies we offer have been tested for stability in this storage condition and our guarantee only applies to antibodies stored as recommended on the datasheet.

Storing solutions containing glycerol at -80°C is not advised since this is below the freezing point of glycerol. Please be aware that glycerol can be contaminated with bacteria. If adding glycerol or any cryoprotectant, care should be taken to obtain a sterile preparation.

Diluting antibodies to working concentration and storing at 4°C for more than a day should be avoided. Proteins in general are less susceptible to degradation when stored at higher concentrations, ideally 1 mg/ml or higher.

This is the rationale for including proteins such as BSA to the antibody solution as stabilizers. The added protein also serves to minimize loss of antibody due to binding to the vessel wall.

For antibodies that one intends to conjugate, stabilizing proteins should not be added since they will compete with the antibody and reduce the efficiency of the conjugation.

**For research purposes only ! Not for therapeutic or diagnostic purposes in humans or animals !**