# Instruction Manual



# Inhibitory Antibody

#### 1. What are inhibitory antibodies?

Inhibitory antibodies are a class of antibodies that can bind to specific antigens and block their biological activity, thereby inhibiting particular molecular or cellular processes.

# 2. What are the types of inhibitory antibodies?

Inhibitory antibodies can be classified based on their target and mechanism of action into the following types:
Blocking Antibodies: Bind to antigens to prevent their interaction with natural receptors.
Neutralizing Antibodies: Directly bind to antigens and neutralize their biological activity.
Receptor Antagonist Antibodies: Bind to receptors to block signal transduction.
Depleting Antibodies: Bind to cell surface antigens, inducing cell death or removing target cells.

# 3. What are species of inhibitory antibodies?

Inhibitory antibodies can be classified into the following types based on source and structure:

1) Chimeric Antibodies: Produced by linking the variable region of a murine antibody (for antigen recognition) to the constant region of a human antibody (for effector functions).

2) Humanized Antibodies: Engineered to reduce immune reactions and improve therapeutic efficacy, these antibodies replace the murine framework and constant regions with human sequences, retaining only the three murine complementarity-determining regions (CDRs) for antigen specificity. These antibodies typically consist of over 90% human amino acid sequences while preserving the high affinity and specificity of the murine antibody for the target antigen.

3) Fully Human Antibodies: Fully encoded by human genes, resulting in 100% human amino acid sequences. This minimizes immune system rejection and enhances the safety and efficacy of antibody-based drugs.

4) Murine/Mouse Antibodies: Entirely produced using murine genes, resulting in 100% murine amino acid sequences. While useful in research, their clinical application is limited due to potential immune reactions in humans.

For animal experiments, chimeric, humanized, and fully human antibodies can be tested in humanized animal models. These models, such as nude or immunodeficient mice, lack functional immune systems or are modified to accept human components.

#### 4. How are inhibitory antibodies produced?

TargetMol's inhibitory antibodies are primarily produced using recombinant expression technology. Antibody genes are engineered through DNA recombination techniques, inserted into plasmid vectors, and expressed in suitable host cells to produce antibodies

#### 5. How are inhibitory antibodies transported?

Inhibitory antibodies require transportation under low-temperature conditions, typically using blue ice or dry ice.

#### 6. How should inhibitory antibodies be stored?

It is recommend to store inhibitory antibodies under low-temperature conditions. When stored under conditions specified in the Certificate of Analysis (COA), the product remains stable for at least one year.



Note: Repeated freeze-thaw cycles may reduce or completely eliminate antibody activity. To minimize this, aliquot the antibody solution before freezing.

#### 7. How should inhibitory antibodies be diluted?

Centrifuge the solution at 10,000 x g for 20 seconds before use to avoid sticking to the tube walls or caps. Dilute the antibody in sterile PBS with a pH matching the original solution to prevent aggregation and maintain sterility. After diluting the antibody to the working concentration, it is advised not to store it at 4°C for more than one day. Perform the dilution in cold buffer inside a biosafety cabinet, using sterile equipment.

# 8. What to do if there is precipitation in the antibody solution?

Environmental conditions (temperature changes, freeze-thaw cycles, vibrations during transportation or long-term storage) may cause protein aggregation. These aggregates may deposit at the bottom of the container or float in the solution. Remove aggregates by gently shaking at room temperature. If necessary, use filtration or centrifugation, but note that these steps may cause slight antibody loss.

# 9. How to measure antibody concentration?

Antibody concentration can be determined by measuring absorbance at a wavelength of 280 nm (A280) and calculating it using the extinction coefficient: A280/extinction coefficient.

# 10. Can inhibitory antibodies be used in animal experiments?

All inhibitory antibodies from TargetMol are suitable for in vivo animal experiments. Our products are sterile with endotoxin levels below 1 EU/mg.

#### 11. What is an isotype control antibody? How to select an appropriate isotype control antibody?

An isotype control antibody is an antibody that shares the same IgG isotype as the target antibody but does not bind to a specific antigen. It is used to verify the specificity of binding in antibody experiments. When selecting an isotype control antibody, it must match the host species, isotype, and subclass of the primary antibody to ensure accurate comparative analysis.

# 12. What is the in vivo half-life of an antibody?

The half-life of an antibody varies depending on factors such as species, antibody isotype, antigen distribution, and concentration. It is recommended to consult relevant literature to find published data under conditions similar to your experimental system as a basis for estimating the half-life.

#### 13. How should the dosage and administration frequency for mice be determined?

The optimal dosage and administration frequency for a specific experiment and antibody may vary depending on the experimental system (e.g., mouse strain, disease model).

Please establish an initial dose and frequency suitable for your experiments based on relevant literature data.

1-781-999-5354

# TargetMol US

- 🌐 www.targetmol.com 🛛 📼 sales@targetmol.com
- Sales are set as get in of control of sales are set as get in of co
- TargetMol EU
- www.targetmol.com
- 🛛 Hafenstraße 47-51, 4020 Linz, Austria







