Immunoassay Blocking Reagents

Practical Guide

ISO Certified 13485:2016

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Recommended Blockers

Blockers for interference in sandwich immunoassays

Animal IgG – Passive Blockers

- Suited for mixed species assays (e.g. MAb/PAb)
- Species of blocker must be the same as the host of the capture or detection antibody

Mouse IgG
A66186M (9-13mg/mL)
A66185M (50-55mg/mL)
A66189M (45-55mg/mL, No Azide)
A66185M-LY (Lyophilized)

Goat IgG
A66200H

Rabbit IgG
A66100H

Rat IgG
A64391R
A41182R

Sheep IgG
A66400S
(70-77mg/mL, Liquid)

Passive blocking reagents work by preventing interfering antibodies from binding to the capture or detection antibodies by providing alternate binding sites. Animal IgG (e.g. Goat IgG) can only block one type of interference (e.g. human anti-goat antibodies) so typically more than one type must be used, depending on the host of both the capture and detection antibodies. Animal IgG must be added in excess concentration and the effectiveness depends on the affinity of interfering antibody for the animal IgG.

RECOMMENDED CONCENTRATION:

- 10x the concentration of the MAb/PAb being used in the assay (e.g. if 5µg/mL of Ab/conjugate, add 50µg/mL Animal IgG).
- Can be added to the sample or conjugate diluent but ideally should be in contact with the patient sample before incubation with the assay capture antibody.

TRU Block™ – Active HAMA & RF Blocker

- Suited for double mouse monoclonal assays
- Removes HAMA, HA & RF interference

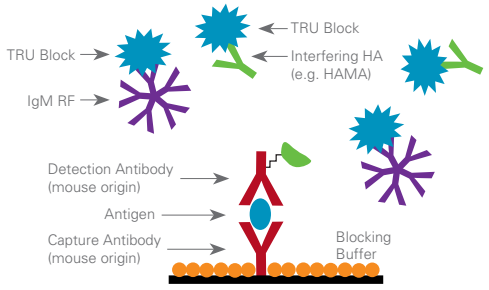
TRU Block™ Ready
8001

TRU Block™ Ultra
8000
8002 (no azide)

TRU Block™
A66800H

TRU Block™ 2
A66802H

TRU Block™ 3
A66803H



*Formulations differ in their ratio of various proprietary ingredients that confers unique blocking characteristics.

In double mouse monoclonal assays, a specific blocker is required to remove a particular type of HA interference called human anti-mouse antibodies (HAMA) and Rheumatoid Factor (RF). A HAMA blocker contains a specific binder directed against all types of heterophilic interference including HAMA and RF. Once bound to the interfering antibodies, TRU Block prevents further binding of HA to other assay components through steric hindrance. Active blockers can typically be used in lower concentrations than passive blocking reagents, which minimizes the reduction in assay signal commonly associated with passive blockers.

RECOMMENDED CONCENTRATION:
For best performance, TRU Block should be included as part of the sample or conjugate diluent, at a recommended concentration range:

Product	Protein Concentration	Application
TRU Block™ Ready	Single-step dilution with recommended dilution of 1:1000 to 1:10	ELISA & LF
TRU Block™ ULTRA	Range: 24-26 mg/mL	ELISA, CLIA & LF
TRU Block™ ULTRA (no azide)	Range: 24-26 mg/mL	ELISA, CLIA & LF
TRU Block™	Range: 24-26 mg/mL	ELISA & CLIA
TRU Block™ 2	Range: 24-26 mg/mL	CLIA & LF
TRU Block™ 3	24.3 mg/mL	ELISA

Blockers for Interference in IgM Capture Assays

IgG Absorbent

IgG Absorbent is a purified goat anti-human IgG (GAH IgG Fc) Fc fragment designed for the removal of human IgG and IgG/rheumatoid factor (RF) complexes from serum prior to testing for specific IgM antibodies in ELISA or other immunoassays. Removal of IgG interference has been demonstrated to significantly increase the sensitivity of IgM detection in immunoassays. Meridian's IgG Absorbent is tested by immunoelectrophoresis to ensure specificity for IgG and no cross-reactivity to IgM or IgA. Goat anti-human IgG (GAH IgG Fc) L15406G.

RECOMMENDED REAGENT:

L15406G **Goat anti-human IgG Fc (GAH IgG Fc)**
Dilute prior to adding to patient sample. Recommend diluting 1:10 in PBS.

Add in a ratio of 1:10 to patient sample and allow to incubate 5-30 minutes.

IgM Assay Diluent

IgM Assay Diluent is intended for use in qualitative and quantitative assays that detect IgM antibodies. This diluent is formulated to reduce assay interference from a patient's IgG antibodies, rheumatoid factor, heterophilic antibodies, and other non-specific proteins that can affect the immunoassay results. Blocking proteins within the IgM Assay Diluent are in high excess and will bind to any open binding site on the assay solid phase to prevent binding from interfering factors. When included as a part of a test kit, IgM Assay Diluent can increase the sensitivity of an IgM detection assay.

RECOMMENDED REAGENT:

8120 **IgM Assay Diluent**
In a separate tube, dilute the patient serum sample in the IgM Assay diluent at a 1:21 dilution or greater (mix well). The diluent must be standardized with the other assay components.

Solid Phase Blocking Buffers

J82100B - ELISA Blocking Buffer (PBS, pH7.4)

J82300B - Lateral Flow Blocking Buffer (PBS, pH 7.4)

- Non-mammalian based blockers
- Blocks non-specific binding to a solid phase subtrate to improve assay sensitivity
- Stabilizes bound proteins on microplate/membrane
- Increases signal-to-noise ratio
- Use at 1x concentration or with further dilution

J16430D - Coating Stabilizer and Blocking Buffer

- Improves stability and function of antigens/proteins bound to a solid phase
- Ideal for very unstable proteins or for less labile antigens/proteins. Dilute up to 1:1 in the assay's current blocker
- Buffer pH 7.2 ± 0.2

A64801B - Bovine Serum Albumin (BSA)

- Ideal for casein-sensitive antibodies, such as phospho-specific antibodies
- Can be used in ELISA, Western blot, and IHC
- Use at 1-5% concentration in PBS at pH 7
- Lyopholized

Recommended Blockers

Isotype Controls & Other Blockers

An isotype control acts as a negative control in flow cytometry and immunohistochemistry assays by differentiating non-specific background signal from specific antibody signal. In addition, Human Immunoglobulin can be used to measure the type of immunoglobulin/isotype in a patient's sample, as a standard blocking agent, or as a protein coating agent for applications including immunofluorescence, immunocytochemistry, Western blot, and ELISA.

RECOMMENDED REAGENT:

Human

IgG
- A50170H, IgG
- A50175H, IgG (Fc)

IgA
- A50167H, IgA
- A50166H, IgA1, kappa
- A50165H, IgA1, lambda

IgM
- A50168H, IgM

IgE
- A50384H, IgE
- A75671H, IgE, kappa & lambda

Mouse

IgG
- A66186M, IgG
- A01696M, IgG2a, kappa

Rat

IgG
- A64391R, IgG
- A41182R, IgG

Sheep

IgG
- A66400S, IgG

Isotype controls are primary antibodies that lack specificity to the target antigen, but match the class and type of the primary antibody used in the application. They act to reduce non-specific binding by the primary/capture antibody through blocking Fc receptor binding or nonspecific antibody interactions with cellular proteins, carbohydrates, and lipids. The isotype control antibody should match the primary/capture antibody's host species, isotype (including heavy chain (IgA, IgG, IgD, IgE, or IgM) and light chain (kappa or lambda) class) and if relevant, conjugation. In addition, isotype controls should be used at the same concentration as the primary antibody.

Why Use Blockers?

Blockers are used in ELISA and LF assays to reduce interference from proteins in patient samples that could produce false results and an incorrect diagnosis.

Choosing the best assay format depends on the intended application of the assay, the type of samples to be analyzed, the availability of reagents and whether the assay is intended for a single analysis in one lab, or is intended to be used in many laboratories by various technicians. Generally, an immunoassay will fall into one of the following categories:

- **Sandwich Antigen Detection ELISA** - designed to measure the amount of target antigen/analyte
- **Antibody Capture ELISA** - used to screen for antibodies (e.g: IgG, IgM, IgA & IgE) to a specific target
- **Competitive ELISA** - detects antigen/analyte present in a sample and is commonly used when the antigen is small with only 1-2 epitopes

Several parameters that are critical to assay performance are common among all of these formats: (1) the choice of solid phase (2) the choice of antibodies/antigen and (3) the choice of blocking agents. In order to produce an assay with high sensitivity and specificity, the most critical element is selecting antibodies or antigens that have a highly specific interaction with the target molecule. However, it is possible to improve assay sensitivity and specificity with the use of blocking agents. These blockers work by reducing non-specific binding resulting in an increase in signal-to-noise ratio.

Non-specific interactions in an assay can occur (1) between the solid phase and non-target proteins, which can absorb to the surface of the solid substrate and (2) between antibodies within the assay itself and endogenous antibodies present within a patient's sample. To prevent non-specific binding, blocking buffers are used after the solid-phase coating step to block any remaining open binding sites. Other blocking agents are used in the sample preparation to prevent interfering antibodies from binding to the assay antibody components.

TYPES OF IMMUNOASSAY SOLID PHASES

Material	Binding Capacity	Type of Interaction
Nitrocellulose	High	Hydrophobic, Hydrophilic
PVDF	High	Hydrophobic
Nylon	High	Hydrophobic
Plates & Tubes		
Polystyrene	Low	Hydrophobic
Polyvinyl	Low	Hydrophobic
Derivatized microtiter plates	Low	Covalent, Hydrophobic, Hydrophilic
Beads		
Polystyrene	Moderate	Hydrophobic
Denvatized Polystyrene	High	Covalent, Hydrophobic, Hydrophilic
Microparticles	High	Covalent and Hydrophobic

A solid surface which has a high binding capacity but does not cause damage to the native protein conformation of the immobilized antigen or antibody is ideal.

KEY PERFORMANCE DIFFERENCES BETWEEN MONOCLONAL AND POLYCLONAL ANTIBODIES

In general, a MAb is often chosen as the primary antibody to establish the highest level of specificity in an assay, and a PAb is chosen as the secondary antibody, to amplify the signal via multiple binding events. However, any combination can be used. All candidate antibodies must be tested together with the intended sample type in order to select the best performers.

Monoclonal antibodies (MAb)

- Generally produced in mice or recombinantly, and recognize a single epitope.
- Since only one antibody molecule can bind to the antigen, the interaction is highly specific but can lack sensitivity, depending on the affinity constant.

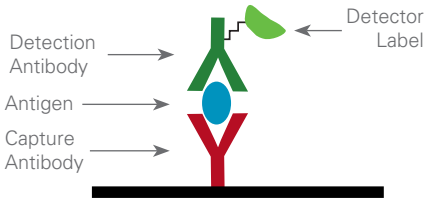
Polyclonal antibodies (PAb)

- Produced in goats, sheep, chicken, rabbits and other animals.
- Polyclonal sera is a heterogeneous composite of antibodies with unique specificities. The concentration of specific antibody (PAb) is typically 50-200mg/mL.
- PAbs are able to recognize multiple epitopes on any one antigen which makes them less sensitive to antigen mutational changes.
- PAbs are useful when the nature of the antigen is not well known. However, their quantity is limited by the lifespan of the host animal.

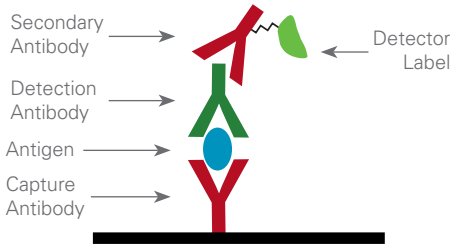
Immunoassay formats that require blockers

Sandwich Antigen Detection Immunoassays

This is a sensitive and robust method which captures the target antigen between two antibodies (capture and detection antibody). The capture antibody is bound to the solid phase. The antigen-containing sample is applied followed by a wash step to remove unbound antigen. A detection antibody is added that binds directly to the antigen. The capture and detection antibodies must bind to non-overlapping epitopes on the antigen. Either monoclonal or affinity-purified polyclonal antibodies can be used as capture and detection. The antigen can be measured with a conjugated detection antibody (direct detection) or a matched set of unlabeled detection and conjugated secondary antibodies (indirect detection).



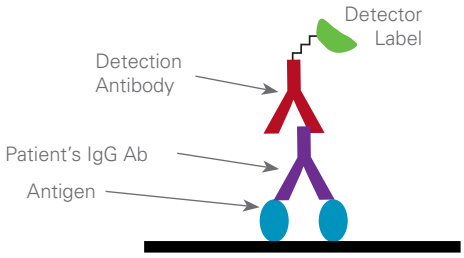
Direct Detection



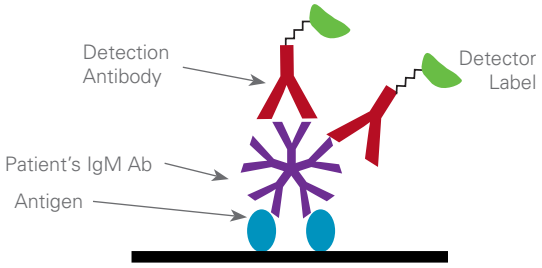
Indirect Detection

Antibody detection Assay (IgG, IgM & IgA)

The antigen is immobilized on the solid phase by direct absorption. The antibody-containing sample is applied followed by a wash step. Detection of the antibody can then be performed using an conjugated detection antibody (direct detection) or a matched set of unlabeled detection and conjugated secondary antibodies (indirect detection). Direct detection is shown below.



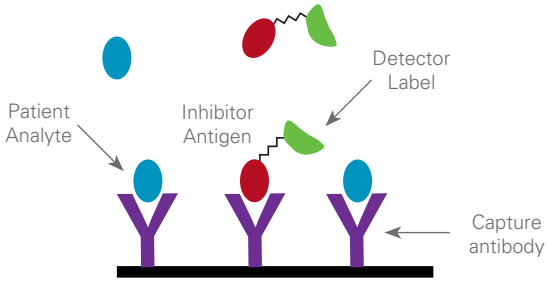
IgG Detection



IgM Detection

Competitive Assay

A competitive binding process between the patient's target analyte and labeled antigen (inhibitor antigen). Antibody specific for the target analyte is coated onto the solid phase. Patient sample and labeled inhibitor antigen are incubated with the pre-coated antibody and compete for binding sites. Unbound labelled antigen/analyte is removed by washing. The more analyte in the sample, the less the labelled inhibitor antigen will bind to the antibody. Therefore, the weaker the assay signal, the higher the concentration of analyte in the patient sample. This is a common method for small antigens that have only 1-2 epitopes.



Direct Detection

Blocking the Solid Phase

Solid phase quantitative immunoassays such as ELISA, lateral flow and Western blot all involve the immobilization of antibodies to a surface. Non-specific binding to this surface by other proteins or biomolecules can reduce an assay's specificity and sensitivity. Solid phase blocking agents are specifically designed to saturate these unoccupied binding sites to prevent non-specific binding, while enhancing assay sensitivity.

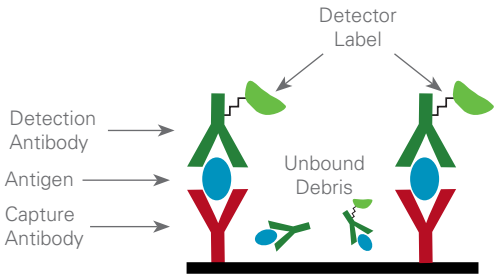
When developing a new immunoassay, the first step is to optimize the antigen or capture antibody coating conditions on the solid phase in order to maximize the amount of protein coated. After coating, any remaining unoccupied binding sites must be blocked in order to prevent non-specific binding of subsequent reactants. An ideal blocking agent is typically protein-based as it is able to block both hydrophobic and hydrophilic sites on the solid phase. In addition, it can serve as a stabilizing agent and prevent denaturation while proteins react at the surface of the solid phase. The concentration of the blocker and the amount of blocking time must be optimized for each assay. Using inadequate amounts of blocker will result in excessive background and a reduced signal-to-noise ratio. Using excessive concentrations of blocker may mask antibody-antigen interactions causing less sensitivity.

IDEAL BLOCKING AGENTS HAVE THE FOLLOWING CHARACTERISTICS:

- Effectively block nonspecific binding of assay reactants to the surface of the well
- Do not disrupt the binding of assay components that have been adsorbed to the well
- Act as a stabilizer (prevent denaturation) of assay reactants on the solid phase
- Do not cross-react with other assay reactants
- Do not possess enzymatic activity that might contribute to signal generation of the substrate or degradation of the reactants
- Perform consistently across various lots

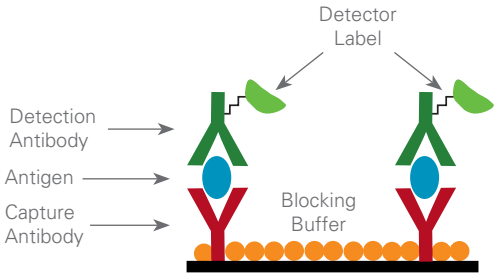
ELISA without blocking buffer

Unbound debris such as proteins, interfering molecules in the patient sample, and assay reactant bind to the solid phase and compete with the specific antigen-antibody reaction causing background noise and reduction in specific assay signal.



ELISA with blocking buffer

Blocking buffer is designed to bind to open sites on the solid phase, preventing unbound debris from non-specifically binding.



GENERAL BLOCKING PROTOCOL

1. After coating the solid-phase with primary antibody, add the blocking solution directly to the wells, beads, blotting membrane or nitrocellulose membrane.
2. Determine the best concentration of blocker for your assay. Blockers can be used at 1x concentration or diluted.
3. Determine the optimum incubation temperature and time for proper absorption of the blockers. Longer times and higher temperature increase the rate of blocking. Typical temperatures are 25°C - 30°C incubated for 30 minutes to 2 hours.
4. Proceed to wash steps.

NOTE: *In addition to blocking, it is essential to perform thorough washes between each step. Washing steps are necessary to remove unbound reagents and decrease background noise. Insufficient washing will allow high background. A common technique is to use a diluted solution of the blocking buffer along with some added high-purity detergent.*

Blocking Assay Interference

Background information on Immunoassay interference

Immunoassay interference is a general term for substances that can change the outcome of an assay by causing a false positive or false negative test result. Examples of potentially interfering particles include endogenous antibodies or other binding proteins present in a patient sample, polyreactive antibodies or autoantibodies (heterophiles), and human anti-animal antibodies.

Interfering substances can have non-specific reactions that disrupt the reaction between the analyte and reagent antibodies in an immunoassay by either: (1) out-competing the analyte of interest for binding to the assay antibodies (false negative) or (2) simulta- neously binding to the assay capture and detection antibodies in the absence of any analyte (false positive).

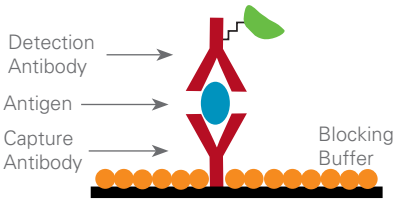
Assays that are inherently vulnerable to interference include double- sandwich antigen detection assays, competitive assays and IgM capture assays. Specific examples which have been reported in the literature are assays for ToRCH, CEA, CA-125, CK-MB, LH, FSH, prolactin, TSH, AFP, cardiac troponin I (cTnI) and hCG.

The most common type of interference in sandwich and competitive assays is heterophilic antibodies (HA) which are naturally occurring human antibodies with low affinities that can react with immunoglobulins from different species, including mouse, goat, rabbit, sheep and chicken. In diagnostic assays, HAs are able to bind to multiple and seemingly unrelated epitopes to disrupt the assay's specific antigen-antibody interaction.

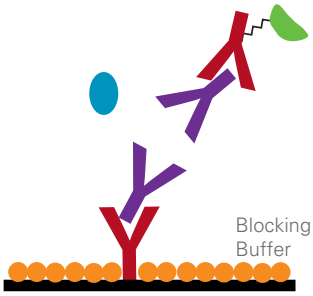
Human anti-mouse antibodies (HAMA) is one type of HA interference that specifically binds to mouse antibodies. Due to the high use of mouse monoclonal antibodies in commercial diagnostic immunoassays, HAMA interference is the most widely experienced type. Rheumatoid factor (RF), an autoantibody that reacts with the patient's own immunoglobulin (Ig), may also cross-react with animal Ig resulting in "RF interference", which is similar to HA/HAMA interference. Generally, isotype (Fc region)-specific interfering HA is more common than idiotype (Fab or binding site)-specific HA.

IgM capture assays generally experience two types of interference. The first is from high levels of patient IgG antibodies that can compete with IgM for antigen binding sites on the solid phase. Since IgG antibodies are highly abundant, representing approximately 75% of serum antibodies in humans, they can outcompete IgM due to their sheer quantity. The second type of interference is caused by IgM RF which can produce false-positive signals by reacting with the Fc fragment on immunoglobulins. RF are found in 1% to 4% of the general population and in 75% of adult patients over 65 years of age.

TRUE Positive Result

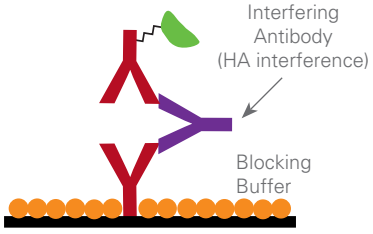


FALSE Negative Result



Interfering antibody blocks the binding site on the capture or detection antibody. Occurs in both sandwich and competitive assays.

FALSE Positive Result

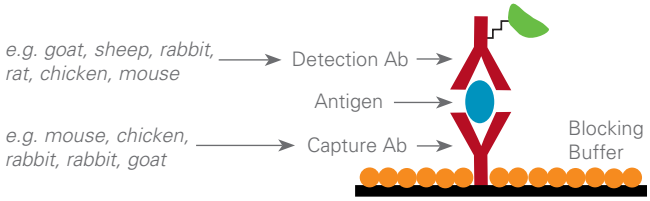


Interfering antibody binds to both the capture and detection antibody even in the absence of the antigen. Occurs in sandwich assays only.

Interference in Sandwich Immunoassays

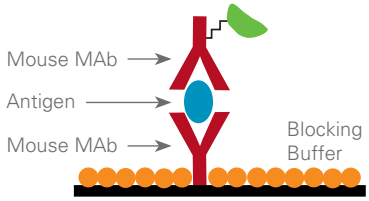
A sandwich immunoassay uses two antibodies (either monoclonal or polyclonal) that bind to different sites on the antigen or analyte of interest. The capture antibody binding affinity for the antigen is usually the main determinant of immunoassay sensitivity. However, human anti-animal immunoglobulin antibodies (HA antibodies) can interfere with this interaction and reduce assay sensitivity and specificity.

Mixed Species Assays



For mixed species sandwich assays, the IgG blocker used must be the same as the host of the capture and detection antibodies. More than one species of IgG is required when two different antibody species are used in a sandwich assay.

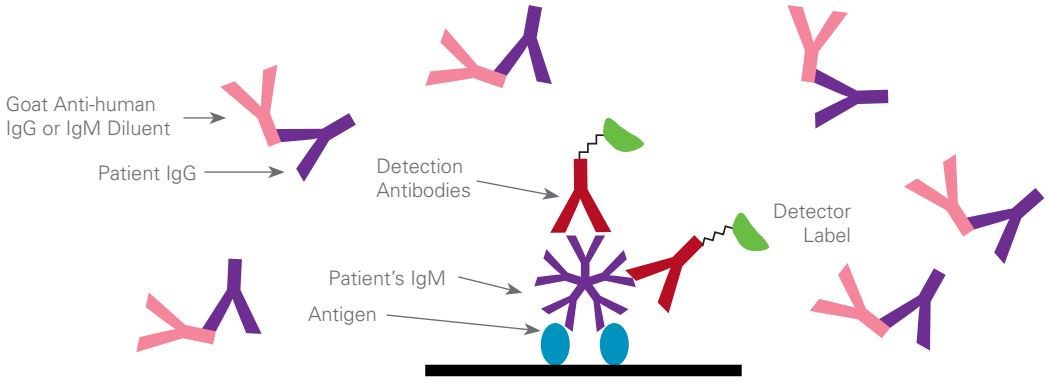
Double Mouse Monoclonal Assays



For double mouse monoclonal antibody sandwich assays, mouse IgG in addition to an active HAMA blocker (TRU Block) should be used to remove a specific type of HA interference called human anti-mouse antibodies (HAMA) and Rheumatoid Factor (RF).

interference in IgM Capture Assays

IgM antibodies are the first type of antibodies produced by the immune system in response to an infection. Consequently, IgM detection assays have proven to be valuable diagnostic tools that assist in identifying early and recent infections. However, IgM antibodies only comprise 5% to 10% of all the antibodies in the body. In contrast, IgG antibodies are the most abundant immunoglobulin and comprise about 75% to 80%. In order to ensure an IgM assay is both sensitive and specific, it is necessary to reduce assay interference, especially from the more plentiful IgG antibodies and other non-specific proteins, such as rheumatoid factors (RF).



IgM Capture Assay

Product List

Abbreviations

Ab	Antibody
Aff. Pur.	Affinity Purified
Block	Tested as a blocking agent
BSA	Bovine Serum Albumin
EIA, ELISA	Enzyme Immunoassay
Fc	Fragment crystallizable region of an antibody
H&L	Heavy and light chain in IgG
HA	Heterophillic antibodies
HAMA	Human anti-mouse antibodies
HRP	Horseradish peroxidase
IEP	Immunoelectrophoresis
IgA	Immunoglobulin A
IgE	Immunoglobulin E
IgG	Immunoglobulin G
IgM	Immunoglobulin M
IgY	Immunoglobulin Y
LF	Lateral flow
MAb	Monoclonal antibody
Monospecific	Monospecific when tested by immunoelectrophoresis
Neat	Whole, unpurified, undiluted antisera
Neph	Nephelometry
PAb	Polyclonal antibody
PBS	Phosphate buffered saline
Purified	Refer to the product COA regarding the extent of purification and/or process used
TIA	Turbidimetry
Tris	Tris (hydroxymethyl) aminomethane based-buffer

Animal Serums

Animal serum contains a diverse mixture of proteins which can absorb heterophile interfering agents in various assays. Animal serum can be used in place of or in addition to animal IgG. The species of animal serum must be the same as the antibody reagent in the assay.

Specificity	Cat Number	Host / Source	Format
Canine Plasma, Pooled/Mixed Gender, Unfiltered, Non-Sterile (Heparin)	N01262C	Canine	Plasma
Mouse Serum, Filtered	N14010M	Mouse	Neat
Porcine Serum, Sterile Filtered	N64250P	Pig	Neat
Rabbit Serum, Sterile Filtered and Heat Inactivated	N01267R	Rabbit	Neat

Chicken Immunoglobulins

Chicken Igs should be used in sandwich or competitive ELISAs or lateral flow assays that use a chicken antibody. Any human anti-chicken antibodies in the patient sample that could potentially interfere with the assay signal can bind to the chicken IgY, preventing non-specific binding that could interfere with assay results.

Specificity	Cat Number	Host / Source	Format
IgY, Chicken	A01366C	Chicken Eggs	Purified
IgY, Chicken	A01460C	Chicken Serum	Purified

Goat Immunoglobulins

Goat Igs should be used in sandwich or competitive ELISAs or lateral flow assays that use a goat antibody. Any human anti-goat antibodies in the patient sample that could potentially interfere with the assay signal can bind to the goat Ig, preventing non-specific binding that could interfere with the assay results.

Specificity	Cat Number	Host / Source	Format
IgG, Goat-Differential ppt	A66200H	Goat Serum	Purified

Human Immunoglobulins

Human Igs can be used in flow cytometry, IHC, sandwich or competitive ELISAs or lateral flow assays to block non-specific binding. The selected antibody should match the primary/capture antibody's host species, isotype (including heavy chain (IgA, IgG, IgD, IgE, or IgM) and light chain (kappa or lambda class) and if relevant, conjugation.

Specificity	Cat Number	Host / Source	Format
IgE, lambda	A01720H	Human Myeloma	Purified
IgE, kappa and lambda	A75671H	Human Myeloma	Purified
IgA1, kappa	A50166H	Human Myeloma	Purified
IgA1, lambda	A50165H	Human Myeloma	Purified
IgA	A50167H	Human Plasma	Purified
IgG	A50170H	Human Plasma	Purified
IgG (Fc)	A50175H	Human Plasma	Purified
IgM >95% Pure	A50168H	Human Plasma	Purified

Product List

Mouse Immunoglobulins

Mouse Igs should be used in sandwich or competitive ELISAs or lateral flow assays that use a mouse antibody. Any human anti-mouse antibodies (HAMA) present in the patient sample that could potentially interfere with the assay signal can bind to mouse Ig, preventing non-specific binding that could interfere with the assay results.

Specificity	Cat Number	Host / Source	Format
IgG2a, kappa, Mouse	A01696M	Mouse Myeloma	Purified
IgG, Mouse Protein A (9-13mg/ml) Dialyzed Azide Free	A66186M-NA	Mouse Serum	Purified
IgG, Mouse-Caprylic Acid Cut	A66187M	Mouse Serum	Purified
IgG, Mouse-Protein A (9-13 mg/mL)	A66186M	Mouse Serum	Purified
IgG, Mouse-Protein A (22-28 mg/mL)	A66181M	Mouse Serum	Purified
IgG, Mouse Protein A (45-55mg/mL) No Azide	A66189M	Mouse Serum	Purified
IgG, Mouse-Protein A (50-55 mg/mL)	A66185M	Mouse Serum	Purified
IgG, Mouse-Protein A (50-55mg/ml)	A66185M-LY	Mouse Serum	Purified Lyopholized

Rabbit Immunoglobulins

Rabbit Igs should be used in sandwich or competitive ELISAs or lateral flow assays that use a rabbit antibody. Any human anti-rabbit antibodies in the patient sample that could potentially interfere with the assay signal can bind to rabbit Ig, preventing non-specific binding that could interfere with the assay results.

Specificity	Cat Number	Host / Source	Format
IgG, Rabbit-Differential ppt	A66100H	Rabbit Serum	Purified
IgG, Rabbit-Differential ppt	A66105R	Rabbit Serum	Purified

Rat Immunoglobulins

Rat IgG should be used in sandwich or competitive ELISAs or lateral flow assays that use a rat antibody. Any human anti-rat antibodies in the patient sample that could potentially interfere with the assay signal can bind to rat IgG, preventing non-specific binding that could interfere with the assay results.

Specificity	Cat Number	Host / Source	Format
IgG, Rat, ≥ 60 mg/mL	A41182R	Rat Serum	Purified
IgG, Rat	A64391R	Rat Serum	Purified

Sheep Immunoglobulins

Sheep Igs should be used in sandwich or competitive ELISAs or lateral flow assays that use a sheep antibody. Any human anti-sheep antibodies in the patient sample that could potentially interfere with the assay signal can bind to sheep Ig, preventing non-specific binding that could interfere with the assay results.

Specificity	Cat Number	Host / Source	Format
IgG Sheep, >=70mg/mL	A66400S	Sheep Serum	Purified

Solid Phase Blockers

Solid phase blocking agents are designed to saturate unoccupied binding sites on the solid phase to prevent non-specific binding. Typically blocking buffers are able to block both hydrophobic and hydrophilic sites on the solid phase. In addition, they can serve as stabilizing agents and prevent denaturation as proteins react at the surface of the solid phase.

Specificity	Cat Number	Host / Source	Format
Blocking Buffer for ELISA	J82100B	n/a	n/a
Blocking Buffer for Lateral Flow Assays, PBS based	J82300B	n/a	Liquid
Coating Stabilizer & Blocking Buffer	J16430D	n/a	Liquid
Conjugate Stabilizer Diluent, HRP	J16200D	n/a	Liquid
BSA, Standard Powder	A64801B	Bovine	Purified
Gamma Globulin, Bovine	A51300B	Bovine Serum	Purified
Bovine Serum Albumin (BSA)	C5BP01-188	Chicken	Aff.Pur.

IgG Absorbents

IgG absorbents are designed for the removal of human IgG and Ig / rheumatoid factor (RF) complexes from serum and plasma prior to testing for specific IgM antibodies in ELISA or other immunoassays. Removal of IgG interference has been demonstrated to significantly increase the sensitivity of IgM detection.

Specificity	Cat Number	Host / Source	Format
IgM Assay Diluent	8120	Goat	Purified
IgG (Fc)	L15406G	Goat	Monospecific
IgG (Fc)	G5G16-048	Goat	Aff. Pur.
IgG (Fc)	L62540G	Goat	Purified

TRU Block™ - HAMA & RF Blocker

In double mouse monoclonal sandwich assays, an active blocker against human anti-mouse antibodies (HAMA) and rheumatoid factor (RF) should be used to prevent non-specific interference leading to false assay results. TRU Block is a proprietary active blocker that can significantly reduce assay interference and improve assay results. It can be used at a lower concentration than passive blocking reagents such as mouse IgG.

Specificity	Cat Number	Host / Source	Format
TRU Block™, Ready Heterophilic Antibody Interference, Active Blocker	8001	Confidential	Purified
TRU Block™ 2, Heterophilic Antibody Interference, Active Blocker	A66802H	Mouse & Confidential	Purified
TRU Block™ 3, Heterophilic Antibody Interference, Active Blocker	A66803H	Mouse & Confidential	Purified
TRU Block™, Heterophilic Antibody Interference, Active Blocker	A66800H	Mouse & Confidential	Purified
TRU Block™ Ultra, Heterophilic Antibody Interference, Active Blocker	8000	Confidential	Purified
TRU Block™ Ultra, Heterophilic Antibody Interference, Active Blocker (no Azide)	8002	Confidential	Purified

HAMA & RF Reagents

HAMA (human anti-mouse antibodies) or rheumatoid factor positive patient samples that can be used to test the effectiveness of a blocking agent in any type of assay.

Specificity	Cat Number	Host / Source	Format
Rheumatoid Factor (RF) Control Serum	A01270H	Human Plasma	Neat
Rheumatoid Factor (RF) Control Serum	A12916H	Human Plasma	Neat

Product List

Secondary Antibodies

Secondary antibodies are used for indirect detection and they can provide an increase in sensitivity through signal amplification, and greater flexibility for labeling and detection. The secondary antibody should not be from the same host species as the primary antibody, but it should have the species specificity for the primary antibody. For example, if the primary antibody is sourced from rabbits, the secondary antibody should be anti-rabbit but it should be raised in a host species other than rabbit (e.g. goat anti-rabbit secondary).

Mouse Immunoglobulins

Specificity	Cat Number	Format	Isotype
IgA (Fc), Human	Z01253M	Purified	IgG2b
IgA (Fc), Human	Z01253P	HRP	IgG2b
IgA (Secretory Component), Human	Z42750M	Purified	IgG1
IgA, Human	Z01250M	Purified	IgG1
IgE (Fc), Human	Z86104M	Purified	IgG2a
IgG (Fc), Goat	MAGG16-264	Purified	IgG2b,k
IgG (Fc), Human	Z01247M	Purified	IgG
IgG (Fc), Human	Z54101M	Purified	IgG1
IgG (Fc), Human	Z86101P	HRP	IgG
IgG (Fc), Human	Z86213M	Purified	IgG
IgG (Fc), Rabbit	MARG16-125	Purified	IgG2b,k
IgG, Human	Z01236M	Purified	IgG1,k
IgG, Sheep	P86502M	Purified	IgG1
IgG1 (Fc), Human	Z86102M	Purified	IgG1
IgG2 (Fc) gamma-2, Human	Z86002M	Purified	IgG2
IgG4 (Fc), Human	Z86140M	Purified	IgG1
IgM (Fab-region), Human	Z86215M	Purified	IgG2b
IgM (Fc), Human	Z86113M	Purified	IgG1
IgM (Heavy Chains), Human	Z86110M	Purified	IgG1
IgM (Heavy Chains), Human	Z86114M	Purified	IgG1
IgM, Human	Z01235M	Purified	IgG1,k
IgM, Human	Z45190M	Purified	IgG1

Polyclonal Rabbit

Specificity	Cat Number	Format
IgG (Fc), Canine	W99114C	Aff.Pur.
IgG (Fc), Human	W99165C	Aff.Pur.
IgG (H&L), Mouse	W01256R	Aff.Pur.
IgG (H&L), Sheep	R5SG10-048	Aff.Pur.
IgG (H&L), Sheep	W99245P	HRP
IgM, Mouse	W99020C	Aff.Pur.

Polyclonal Goat Anti-Human

Specificity	Cat Number	Format
IgG (H+L)	W01262FL	FITC
IgA	L66605G	Monospecific
IgE (epsilon)	L62507G	Purified
IgG (Fc) (min x w/Hu Bov Hrs Ms)	W99036P	HRP
IgG (Fc) (min x w/Hu Bov Hrs Ms Rab)	W01252G	Aff.Pur.
IgG (Fc)	G5G16-0482	HRP
IgG (Fc)	W66040G	Aff.Pur.
IgG (Fc)	W99008A	Alk.Phos.
IgG (H&L)	W01260AF	Alexa Fluor 488
IgM (Fcu)	L66607G	Monospecific
IgM (Fcu)	W99154A	Alk.Phos
IgM (Fcu)	W99154G	Aff.Pur.
IgM (mu) (min x w/Bov Gt Ms Rab)	W01251G	Aff.Pur.
IgM (mu) (min w/IgA and IgG)	W01259G	Aff.Pur.
IgM (mu)	G5G54-048	Aff.Pur.
IgM (mu)	G5G54-0482	HRP
IgM (mu)	L04354G	Monospecific
IgM (mu)	L62650G	Purified
IgM (mu)	W01258G	Aff.Pur.
IgM (mu)	W66210G	Aff.Pur.
IgM (mu)	W66310G	Aff.Pur.
Kappa Light Chain (Free & Bound)	L15805G	Purified
Kappa Light Chain (Free & Bound)	L62805G	Monospecific
Lambda Light Chain (Free & Bound)	K04365G	Purified
Lambda Light Chain (Free & Bound)	L15905G	Purified
Lambda Light Chain (Free & Bound)	L62905G	Monospecific

Polyclonal Goat Anti-Mouse

Specificity	Cat Number	Format
IgE (epsilon chain)	W03700G	HRP
IgG (Fc)	G5MG16-048	Aff.Pur.
IgG (Fc)	W41202G	HRP
IgG (gamma)	G5MG20-0482	Aff.Pur.
IgG (H&L) (min x w/Hu Bov Hrs)	W99062G	Aff.Pur.
IgG (H&L)	G5MG10-048	Aff.Pur.
IgG (H&L)	G5MG10-0482	Purified
IgG (H&L)	G5MG10-0484	Aff.Pur.
IgG (H&L)	W41250G	TRITC
IgG (H&L)	W41502G	FITC
IgG (H&L, Goat)	G5MG10-766	Aff.Pur
IgG1	W03910G	HRP

Polyclonal Goat Anti-Rabbit

Specificity	Cat Number	Format
IgG (Fc)	G5G16-766	Aff.Pur.
IgG (H&L)	G5RG10-048	Aff.Pur.
IgG (H&L)	G5RG10-0482	HRP
IgG (H&L)	G5RG14-0483	FITC
IgG (H&L)	S5RG10-0481	Alk.Phos.
IgG (H&L)	W41604G	Aff.Pur.

Polyclonal Goat Anti-Bovine

Specificity	Cat Number	Format
IgG (H&L)	W01254G	Aff.Pur.
IgG (H&L)	W99101G	Aff.Pur.

Polyclonal Goat Anti-Canine

Specificity	Cat Number	Format
IgG (Fc)	W99114C	Aff.Pur.

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Meridian Life Science, Inc.

5171 Wilfong Road | Memphis, TN 38134
901.382.8716 · 800.327.6299

www.MeridianLifeScience.com

Connect with us:

VERITAS 株式会社 ベリタス
〒105-0013 東京都港区浜松町1丁目18-16 住友浜松町ビル6階
TEL.03-5776-0078(代) FAX.03-5776-0076
E-mail: veritas@veritastk.co.jp
https://www.veritastk.co.jp/