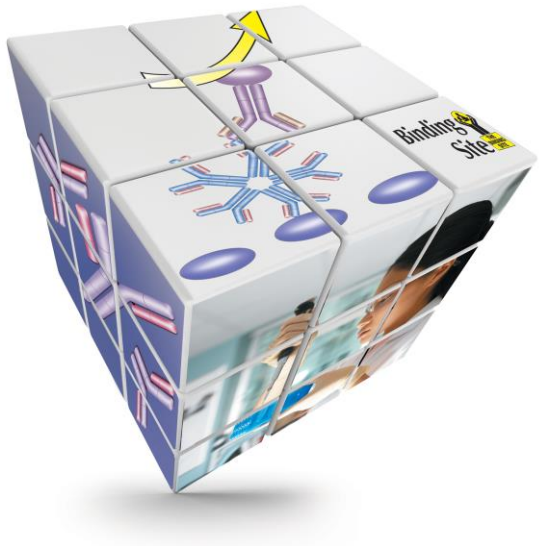
Immunologicals Group

Rheumatoid Factor /IgG Adsorbent e-book

For use with Infectious Disease Immunoassays



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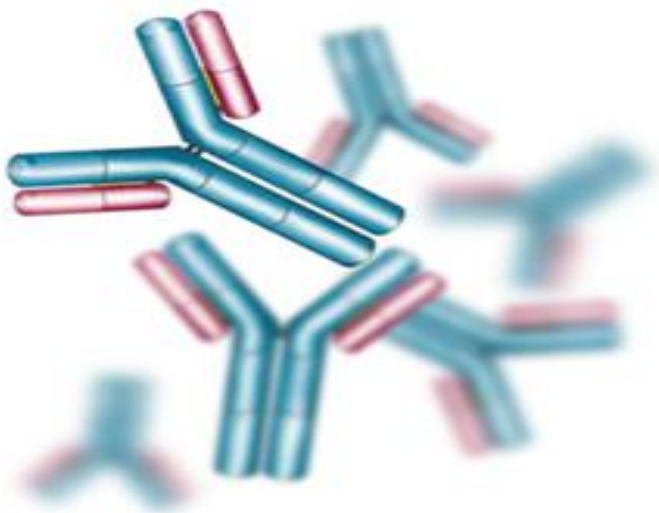

CHAPTER 1

Background

IgG is the most abundant of the five classes of immunoglobulins, representing about **80% of serum antibodies**. It is the major antibody in the secondary response of immunity.

IgM is the first antibody produced in the primary immune response, representing about **20% of all serum antibodies**.

Rheumatoid Factor (RF) can belong to any immunoglobulin class, but they are mostly associated with IgM.

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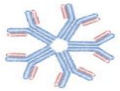
In immunoassay testing procedures, the accurate measurement of human IgM for the detection of infectious diseases may experience interferences from IgM class Rheumatoid Factor (RF) and/or from elevated concentrations of IgG found in the test specimen.

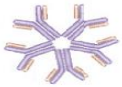
In these situations, there are recognised mechanisms by which RF and IgG can interfere with certain immunoassays for the measurement of specific IgM antibodies.

Diagram Key


Antigen


Antigen Specific IgG


Antigen Specific IgM


IgM Class RF


Detection


Anti-Human IgM
Detector Conjugated
Secondary Antibody

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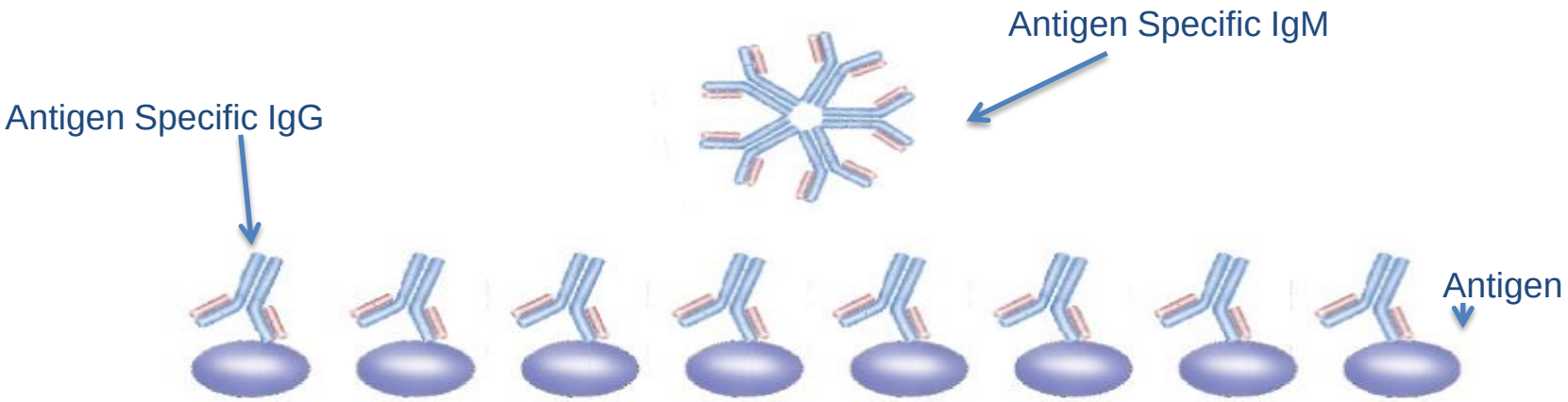
In the first of these testing procedures, as a result of its elevated concentration, antigen specific IgG prevents antigen specific IgM from binding to the antigen being used in the immunoassay test procedure.



This causes a ***FALSE NEGATIVE*** test result as the high levels of IgG antibodies mask the lower
levels of IgM antibodies which are unable to be detected.

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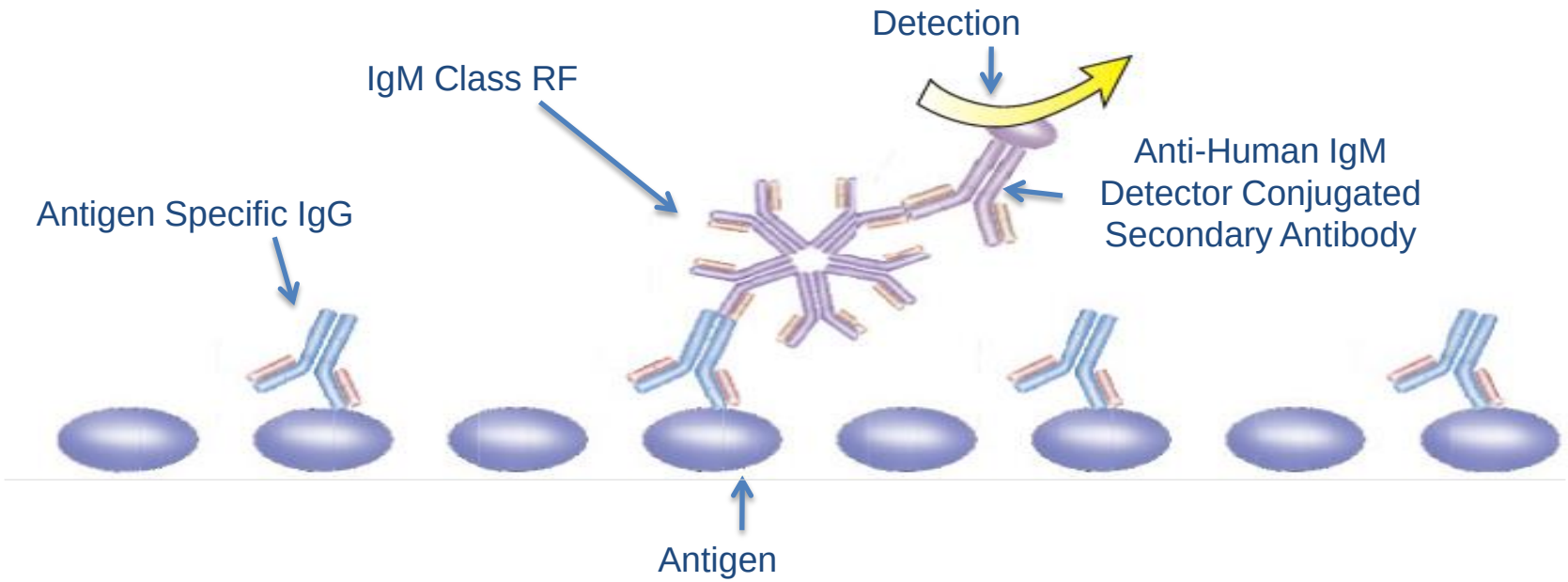
In the second case, IgM class RF binds to the antigen IgG complex and is mistakenly detected by the secondary anti-IgM detector conjugated antibody.

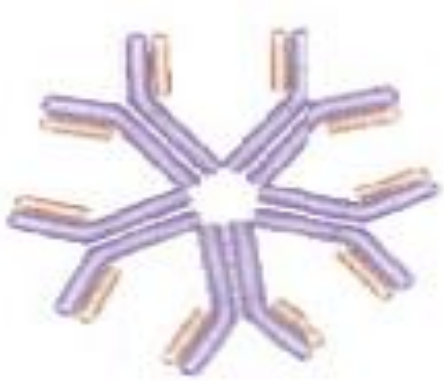


This situation causes a ***FALSE POSITIVE*** test result as the IgM class RF inherently binds to antigen IgG immune complexes. This leads to an erroneous test reading as a result of the secondary detector conjugated antibody.

CHAPTER 2

Why is it used?

Binding Site's human Rheumatoid Factor adsorbent reagent is formulated to remove both IgM class RF and elevated IgG concentrations from test specimens prior to testing for specific IgM.

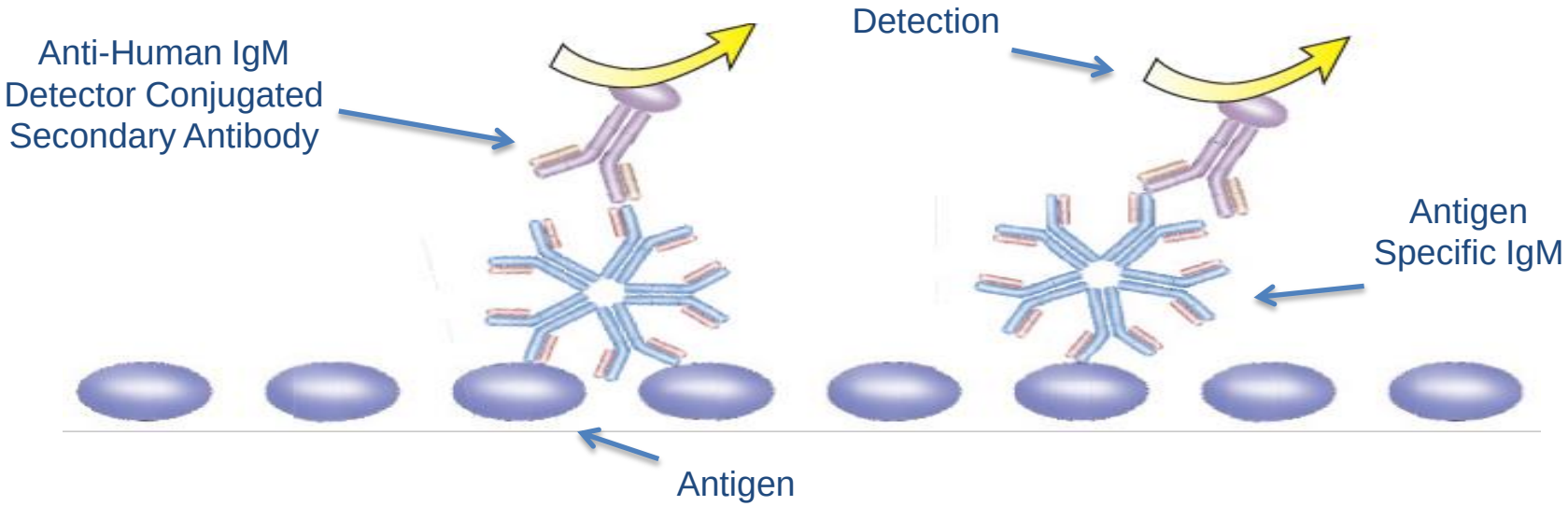


CHAPTER 3

How does it work?

- ✓ Patient samples to be tested for pathogen-specific IgM are first treated with Binding Site's human Rheumatoid Factor adsorbent reagent (4 parts reagent to 1 part specimen).
- ✓ Immune complexes containing patient IgG are formed during the subsequent incubation period.
- ✓ If IgM class RF is present, it will bind to the aforementioned immune complexes. This results in the removal of both IgM class RF and the pathogen specific IgG from specimens prior to testing, providing you enhanced assay specificity.

Pretreatment of patient samples with Human RF adsorbent reagent **removes both IgM class RF, as well as IgG,** allowing for the accurate detection of antigen specific IgM.



Antigen specific IgM in the patient sample now *easily binds to immobilised antigen* as intended and is detected by an IgG class-specific secondary antibody tagged with an indicator molecule capable of being read and measured.

Both **FALSE POSITIVE** and **FALSE NEGATIVE** test results are now eliminated.

CHAPTER 4

What's in the reagent?

Human RF adsorbent reagent is antiserum, mono-specific to human IgG.

Sheep serum in a glycine buffered saline solution at pH 7.4.

0.099% sodium azide, 0.1% E-amino-n-caproic acid, 0.01% benzamidine and 1mM ethylenediaminetetraacetic acid are also added and act as preservatives.

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- The Human RF adsorbent reagent will effectively remove up to 15 g/L of IgG when used as directed. For samples containing higher concentrations of IgG, additional reagent may be added.
- RF adsorbent reagent should be stored at 2 – 8º C.
- The reagent has a shelf life of 3 years after date of manufacture.
- Available in any sized packaging configuration required (10 mL up to bulk quantities).

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Why choose Binding Site as your supplier?

- Our **high quality materials** are a result of almost 30 **years of expertise** in the field.
- Accredited to **ISO9001** and **ISO13485** standards
- Our **problem-solving approach** allows us to create **bespoke products** to meet customer specifications.

Contact the Immunologicals team
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