Anti-Human Globulin
Anti-IgG,-C3d; Polyspecific
(Rabbit / Murine Monoclonal)
(Green)
For Tube Technique

INTERPRETATION OF LABELING SYMBOLS

**LOT**
Batch code

**REF**
Product code

**IVD**
In vitro diagnostic medical device

** Consult instructions for use **
Manufacturer

INTENDED USE

Anti-Human Globulin, Anti-IgG,-C3d; Polyspecific is intended for use in the direct antiglobulin test to detect the in vitro coating of human red blood cells with IgG and/or C3d component.

Anti-Human Globulin, Anti-IgG,-C3d; Polyspecific is intended for use in the indirect antiglobulin test to detect the in vitro coating of human red blood cells with IgG and/or C3d components.

SUMMARY AND EXPLANATION

The antiglobulin test was first used in blood group serology by Coombs, Mourant and Race in 1945. The serum of animals immunized with human protein was used to detect ‘incomplete’ antibodies bound to red blood cells. The ability of antiglobulin reagents to detect human complement components bound to red blood cells was reported by Dacie, Crookston and Christensen in 1957.

Direct antiglobulin test will detect IgG antibodies and/or complement component C3 bound to red blood cells in vivo in serological conditions such as the presence of autoantibodies, antibodies as a result of a transfusion reaction and hemolytic disease of the fetus and neonate.

The indirect antiglobulin test will detect, after incubation of serum or plasma with red blood cells, IgG antibodies and/or complement component C3 bound to red blood cells in vitro in applications including antigen typing, antibody detection, and antibody identification.

PRINCIPLE OF THE TEST

The Anti-Human Globulin Anti-IgG,-C3d; Polyspecific will cause the agglutination of red blood cells coated with IgG and/or C3d/C3b complement components. No agglutination will be observed with uncoated red blood cells.

REAGENT DESCRIPTION

The main components of this reagent are rabbit antibody to human IgG and a murine monoclonal IgG antibody to C3. (Clone 3G8).

This reagent contains bovine serum albumin, 0.1% (w/v) sodium azide and Tween 80. The reagent is dyed green by the addition of patent blue and tartrazine.

NOTE: The volume delivered by the reagent bottle dropper is approximately 40 μL. Care should be taken to ensure that appropriate serum to cell ratios are maintained in all test systems.

STORAGE

The reagent should be stored at 2-8 °C.

WARNINGS AND PRECAUTIONS

For in vitro diagnostic use only.

Products should be used by qualified personnel. Do not use beyond expiration date. Do not use if turbid. Do not dilute.

The format of the expiration date is expressed as YYYY-MM-DD (Year-Month-Day).

This reagent contains 0.1% (w/v) sodium azide. Sodium azide may be toxic if ingested and may react with lead and copper plumbing to form explosive compounds. If discarded into a sink, flush with a large volume of water to prevent azide buildup.

This reagent is of animal origin, therefore care must be taken during use and disposal as there is a potential infection risk.

This product has components (dropper bulbs) containing dry natural rubber.

Contains material of murine origin; therefore, handle appropriately as the absence of murine viruses has not been determined.

SPECIMEN COLLECTION AND PREPARATION

Specimens should be collected by a standard collection technique. The specimen should be tested as soon as possible after collection. If testing is delayed, the specimen should be stored at refrigerated temperatures. Do not use blood specimens that exhibit contamination. Extreme care should be taken if hemolyzed samples must be tested. Clotted samples, or those collected in EDTA, should be tested within fourteen days from collection. Donor blood may be tested until the expiration date of the donation.

For the Direct Antiglobulin Test it is recommended that testing is performed within 48 hours for blood drawn into EDTA. Blood collected into other anticoagulants may be used (ACD, CPD, CPDA-1, CP2D, CP2D-A3). Clotted specimens should be stored prior to refrigeration to avoid in vitro sensitization with complement.

Indirect Antiglobulin tests should ideally be performed within 72 hours of collection. If a plasma sample is used, complement dependant antibodies may not be detected.

MATERIALS

Material provided
- Anti-Human Globulin Anti-IgG,-C3d; Polyspecific

Materials required but not provided
- Isotonic saline
- Reagent red blood cells
- Donor or patient red blood cells
- Serum
- IgG sensitized red blood cells
- 10 x 75 mm or 12 x 75 mm glass test tubes
- Pipette
- Centrifuge
- Heating block/waterbath
- Optical aid (optional)
- Potentiator of choice
  - Bovine Serum Albumin
  - LISS Additive
  - PEG

PROCEDURES

NOTE: This reagent has been standardized for use by the techniques described below and therefore its suitability for use by other techniques cannot be guaranteed. When a test is required to be incubated for a specific time period, a timer should be used.

Indirect Antiglobulin Test

For an enhancement medium/potentiator or a blood typing reagent is used, please refer to the manufacturer’s respective instructions for use.

1. Prepare a 2-4% suspension of red blood cells in isotonic saline (Suspended Red Blood Cells may be used directly from the vial or according to the manufacturer’s instructions.)

2. Add 2 drops of the serum or plasma to be tested to a glass test tube.

3. Add 1 drop of red blood cell suspension. Steps 2 and 3 may be performed in either order.

4. Mix the contents of the test tube well and centrifuge at 37 °C ± 1 °C for 30-60 minutes or according to the manufacturer’s instructions if a potentiator is being used.

5. Wash the test 3-4 times with a large excess of isotonic saline. (e.g. 4 mL of saline per 10 or 12 x 75 mm glass test tubes)

NOTE: (i) allow adequate spin time to sediment the red blood cells.

6. Re-suspension of negative tests.

7. To all negative tests add 1 drop of IgG sensitized reagent red blood cells.

a) Mix the contents of the test tube well and centrifuge.

b) Make sure that most of the residual saline is removed at the end of each wash.

Direct Antiglobulin Test

1. Add 1 drop of red blood cells suspended to 2-4% in isotonic saline.

2. Wash the test 3-4 times with a large excess of isotonic saline. (e.g. 4 mL of saline per 10 or 12 x 75 mm glass test tube).

NOTE: (i) allow adequate spin time to sediment the red blood cells.

Material provided
- Anti-Human Globulin Anti-IgG,-C3d; Polyspecific

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  - LISS Additive
  - PEG

PROCEDURES

NOTE: Suggested centrifugation: 900-1000 g (approx. 3400 rpm) for 10 seconds or a time and speed appropriate for the centrifuge used that produces the strongest reaction of positive tests, yet allows easy re-suspension of negative tests.

5. After centrifugation, gently shake the tube to dislodge the cell button from the bottom and immediately observe macroscopically for agglutination.

6. Quality control of reagents is essential and should be performed on each day of use and in accordance with local, state and federal regulations.

5. All negative antiglobulin tests should be controlled using IgG sensitized reagent red blood cells. A positive result indicates the presence of active anti-IgG. Tests in which...
negative results are obtained with this procedure should be considered invalid and repeated if necessary.

Routine quality control should confirm that the Anti-Human Globulin contains active anti-IgG and anti-C3. Anti-IgG reactivity can be checked by testing the Anti-Human Globulin reagent with IgG sensitized red blood cells.

Anti-C3 reactivity can be confirmed by testing the Anti-Human Globulin reagent with C3 coated red blood cells. Any reagent red blood cell with a negative direct antiglobulin test may be used as a negative control, if desired.

LIMITATIONS

NOTE: Any saline present after the completion of the wash phase may dilute the Anti-Human Globulin Anti-IgG, C3d; Polyspecific reagent beyond its optimal working concentration. Therefore, it is important to ensure that the maximum amount of wash solution is removed after each centrifugation step.

Heating blocks and waterbaths promote better heat transfer and are recommended for 37 °C tests.

Gently re-suspend tube tests before reading. Excessive agitation may disrupt weak agglutination and produce false negative results.

Excessive centrifugation can lead to difficulty in re-suspending the cell button, while inadequate centrifugation may result in agglutinates that are easily dispersed.

False positive or false negative results can occur due to contamination of test materials, improper reaction temperature, improper storage of materials, omission of test reagents and certain disease states.

SPECIFIC PERFORMANCE CHARACTERISTICS

Comparator Study Results

During comparator studies (data on file at Alba Bioscience Limited), blood samples were tested with Anti-Human Globulin Anti-IgG, C3d; Polyspecific as follows:

Indirect Antiglobulin Test

<table>
<thead>
<tr>
<th>Reagent</th>
<th>IgG, Anti-C3</th>
<th>Comparator Reagent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>1894</td>
<td>6</td>
</tr>
<tr>
<td>Negative</td>
<td>3</td>
<td>4598</td>
</tr>
<tr>
<td>Total</td>
<td>1897</td>
<td>4604</td>
</tr>
<tr>
<td>Positive Percent Agreement*</td>
<td>99.84</td>
<td>0.99</td>
</tr>
<tr>
<td>Negative Percent Agreement*</td>
<td>99.87</td>
<td>0.99</td>
</tr>
</tbody>
</table>

Indicates agreement between the Anti-Human Globulin Anti-IgG, C3d; Polyspecific and comparator reagents only and does not indicate which reagent gave the correct result(s).

In performance evaluation studies, 6501 samples were tested with Anti-Human Globulin Anti-IgG, C3d; Polyspecific. The positive percent agreement at the one-sided 95% exact lower confidence limit was 0.99 for agglutination tests based on a comparison of interpreted results. The negative percent agreement at the one-sided 95% exact lower confidence limit was 0.99 for agglutination tests based on a comparison of interpreted results.

Results were evaluated against comparable FDA approved products using the appropriate methods for the comparators.

A BO Cross-Match

<table>
<thead>
<tr>
<th>Reagent</th>
<th>IgG, Anti-C3</th>
<th>Comparator Reagent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>119</td>
<td>0</td>
</tr>
<tr>
<td>Negative</td>
<td>0</td>
<td>221</td>
</tr>
<tr>
<td>Total</td>
<td>119</td>
<td>221</td>
</tr>
<tr>
<td>Positive Percent Agreement*</td>
<td>100.00</td>
<td>0.98</td>
</tr>
<tr>
<td>Negative Percent Agreement*</td>
<td>100.00</td>
<td>0.99</td>
</tr>
</tbody>
</table>

Indicates agreement between the Anti-Human Globulin Anti-IgG, C3d; Polyspecific and comparator reagents only and does not indicate which reagent gave the correct result(s).

In performance evaluation studies, 3023 samples were tested with Anti-Human Globulin Anti-IgG, C3d; Polyspecific. The positive percent agreement at the one-sided 95% exact lower confidence limit was 0.98 for agglutination tests based on a comparison of interpreted results. The negative percent agreement did not meet the acceptance criteria of 0.99 at the one sided 95% lower confidence limit due to the low frequency of positive samples encountered and also one discrepant result.

Results were evaluated against comparable FDA approved products using the appropriate methods for the comparators.

Direct Antiglobulin Test

<table>
<thead>
<tr>
<th>Reagent</th>
<th>IgG, Anti-C3</th>
<th>Comparator Reagent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>355</td>
<td>0</td>
</tr>
<tr>
<td>Negative</td>
<td>2</td>
<td>2666</td>
</tr>
<tr>
<td>Total</td>
<td>357</td>
<td>2668</td>
</tr>
<tr>
<td>Positive Percent Agreement*</td>
<td>99.44</td>
<td>0.98</td>
</tr>
<tr>
<td>Negative Percent Agreement*</td>
<td>100.00</td>
<td>0.99</td>
</tr>
</tbody>
</table>

Indicates agreement between the Anti-Human Globulin Anti-IgG, C3d; Polyspecific and comparator reagents only and does not indicate which reagent gave the correct result(s).

In performance evaluation studies, 3023 samples were tested with Anti-Human Globulin Anti-IgG, C3d; Polyspecific. The positive percent agreement at the one-sided 95% exact lower confidence limit was 0.98 for agglutination tests based on a comparison of interpreted results. The negative percent agreement did not meet the acceptance criteria of 0.99 at the one sided 95% lower confidence limit due to the low frequency of positive samples encountered and also one discrepant result which included a sample from a patient historically presenting with a positive DAT.

Results were evaluated against comparable FDA approved products using the appropriate methods for the comparators.

Precision Study Results

As part of the performance evaluation, precision and lot to lot comparability were determined using multiple operators, days and runs to confirm repeatability and reproducibility of test results in the same run, day and with the same operator and between runs, days and operators. The study took account of variables such as days of the week, times of day and supplementary reagents used in testing.

There were no discordant results; all expected positive test outcomes generated unequivocal positive reactions and all expected negative test outcomes generated unequivocal negative reactions.

Prior to release, each lot of Anti-Human Globulin Anti-IgG, C3d; Polyspecific is tested using FDA recommended methods against IgG and complement coated red blood cells to ensure suitable reactivity.

BIBLIOGRAPHY


DATE OF ISSUE

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US Distributor

Quotient

301 South State Street

S-204

Newtown

PA 18940

USA

Customer Service Tel: 1-888-284-1901

Product Technical Support Tel: 1-888-228-1990

Customer Service Fax: 1-888-694-5208

E-Mail: customer.service@quotientbd.com

Web: www.quotientbd.com

Alba Bioscience Limited
Ellen’s Glen Road

Edinburgh, Scotland, UK

EH17 7QT

US License 1807

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