SUMMARY AND EXPLANATION

The MN status of red blood cells is defined by the amino acid sequence of the major red cell sialoglycoprotein, glycophorin A. Anti-M and anti-N react with their respective antigens on glycophorin A, causing agglutination of the red blood cells and classifying these cells into three distinct phenotypes: M+N-, M+N+ and M-N+. Additionally, irrespective of the MN status of their major glycoprotein, almost all human red blood cells carry the 'N'-antigen on a minor red cell sialoglycoprotein, glycophorin B. The presence of this antigen will not lead to agglutination of MM red blood cells by this monoclonal anti-N using the recommended technique.

PRINCIPLE OF THE TEST

When used by the recommended technique, this reagent will cause the agglutination (clumping) of red blood cells carrying the N antigen. Lack of agglutination demonstrates the absence of the N antigen.

REAGENT DESCRIPTION

The main component of this reagent is derived from the in vitro culture of the IgG secreting mouse hybridoma:

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Product Code</th>
<th>Cell Line</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anti-N</td>
<td>Z176U</td>
<td>LN3</td>
</tr>
</tbody>
</table>

The formulation also contains bovine serum albumin and 0.1% (w/v) sodium azide.

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 the 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.

CAUTION: SOURCE MATERIAL FROM WHICH THIS PRODUCT WAS DERIVED, WAS FOUND NEGATIVE FOR INFECTIOUS AGENTS WHEN TESTED IN ACCORDANCE WITH CURRENT FDA REQUIRED TESTS.

The bovine material which was used has been collected in a USDA approved facility.

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

Monoclonal antibodies exhibit a high degree of potency, avidity and specificity. When using such antibodies, great care should be taken to avoid cross contamination. This product has components (dropper bulbs) containing dry natural rubber.

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.

Clotted samples, or those collected in EDTA, should be tested within fourteen days from collection. Donor blood stored in citrate anticoagulant may be tested until the expiry date of the donation.

Special care should be taken if hemolized samples must be tested. Grossly icteric or contaminated blood specimens should not be used.

MATERIALS

Material provided
- ALBAclone® Anti-N

Materials required but not provided
- Isotonic saline
- Reagent red blood cells suitable for the control of Anti-N
- 10 x 75 mm or 12 x 75 mm glass test tubes
- Pipettes
- Centrifuge
- Heating block/waterbath
- Timer

PROCEDURE

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

It is recommended to allow reagent to reach 20-25 °C prior to use.

When using supplemental testing equipment (i.e. centrifuge), follow the procedures that are contained in the operator’s manual provided by the device manufacturer.
Tube Technique - 5 Minute Incubation/Spin
1. Prepare a 2-4% suspension of red blood cells in isotonic saline solution (Reagent red blood cells may be used directly from the vial or according to the manufacturer's instructions).
2. Add 1 drop of blood grouping reagent 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 and incubate at 20-25°C for 5 minutes.
5. Centrifuge the test tube.
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 antibody with antigen-positive red blood cells, yet allows easy re-suspension of antigen-negative red blood cells.
6. After centrifugation, gently shake the tube to dislodge the cell button from the bottom and immediately observe macroscopically for agglutination. Do not use any optical aid to examine the tests results.
7. Record results.

STABILITY OF REACTION
Test results should be read, interpreted and recorded immediately after centrifugation. Delays may cause dissociation of antigen-antibody complexes resulting in weak positive or false negative reactions.

INTERPRETATION OF RESULTS

<table>
<thead>
<tr>
<th>Agglutination</th>
<th>positive test result</th>
</tr>
</thead>
<tbody>
<tr>
<td>No agglutination</td>
<td>negative test result</td>
</tr>
</tbody>
</table>

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

M+N+ red blood cells should be used as a positive control
M+N- red blood cells should be used as a negative control

LIMITATIONS
Incubation for longer than five minutes may result in weak false positive reactions.

Incubation at temperatures above that recommended may result in weaker reactions.

Cells modified by proteolytic enzymes must not be used, as N antigens may be destroyed.

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

The expression of certain red blood cell antigens may diminish in strength during storage, particularly in EDTA and clotted samples. Better results will be obtained with fresh samples.

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.

Suppressed or weak expression of blood group antigens may give rise to false negative reactions.

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

SPECIFIC PERFORMANCE CHARACTERISTICS
Prior to release, each lot of ALBAclone® Anti-N is tested by FDA recommended methods against a panel of antigen-positive and antigen-negative red blood cells to ensure suitable reactivity.

BIBLIOGRAPHY
2. AABB Standards Program Committee: Standards for Blood Banks and Transfusion Services, ed 30. AABB, 2016

DATE OF ISSUE
2018-12-21