

**ANTI-A<sub>1</sub> LECTIN**  
**DOLICHOS BIFLORUS LECTIN FOR SLIDE AND TUBE TESTS**

**SUMMARY**

Human red blood cells possessing the A antigen can be broadly subdivided into two main subgroups namely A<sub>1</sub>, and A<sub>2</sub> based on their reaction with A<sub>1</sub> lectin. A<sub>2</sub> subgroups comprises of weaker subgroups of A such as A<sub>2</sub>, A<sub>3</sub>, A<sub>x</sub>, A<sub>4</sub>, A<sub>5</sub>, A<sub>6</sub>, A<sub>o</sub> etc.

Group A red blood cells which agglutinate with Anti-A<sub>1</sub> lectin are classified as subgroup A<sub>1</sub>, whereas red blood cells which do not agglutinate with Anti-A<sub>1</sub> lectin are classified as subgroup A<sub>2</sub>. It is estimated that about 80% of the group A population are A<sub>1</sub>, and the remaining A<sub>2</sub> or weaker. Anti-A<sub>1</sub> lectin is especially useful in selecting blood for an A<sub>2</sub> or A<sub>2</sub>B recipient whose blood may contain Anti-A<sub>1</sub> antibodies.

**REAGENT**

Anti-A<sub>1</sub> lectin is a ready to use purified extract of *Dolichos biflorus* seeds that is carefully calibrated to differentiate most A<sub>1</sub> cells from A<sub>2</sub> cells. It contains a phytohaemagglutinin which is virtually specific for A<sub>1</sub> antigen on the human red blood cells.

Each batch of reagent undergoes rigorous quality control at various stages of manufacture for its specificity, avidity and titre.

**REAGENT STORAGE AND STABILITY**

- a) Store the reagent at 2-8°C. DO NOT FREEZE.
- b) The shelf life of the reagent is as per the expiry date mentioned on the reagent vial label.

**PRINCIPLE**

Human red blood cells possessing A<sub>1</sub> antigen will agglutinate in the presence of seed extract (lectins) containing phytohaemagglutinin specifically directed towards it.

Agglutination of red blood cells with Anti-A<sub>1</sub> lectin is a positive test result and indicates the presence of A<sub>1</sub> antigen. No agglutination with Anti-A<sub>1</sub> lectin is a negative test result and indicates the absence of the A<sub>1</sub> antigen. Red blood cells that are positive with Anti-A reagent and negative with A<sub>1</sub> lectin are classified as A<sub>2</sub>.

**NOTE**

1. In vitro diagnostic reagent for laboratory and professional use only. Not for medicinal use.
2. The reagent contains sodium azide 0.1% as preservative. Avoid contact with skin and mucosa. On disposal flush with large quantities of water.
3. Extreme turbidity may indicate microbial contamination / reagent deterioration. Such reagents should be discarded.

**SAMPLE COLLECTION AND PREPARATION**

No special preparation of the patient is required prior to sample collection by approved techniques.

Samples should be stored at 2-8°C, if not tested immediately. Do not use haemolysed samples.

Anticoagulated blood using various anticoagulants should be tested within the below mentioned time period:

EDTA or Heparin	:	2 days
Sodium citrate or Sodium oxalate	:	14 days
ACD or CPD	:	28 days

Clotted whole blood should be tested within 14 days.

**ADDITIONAL MATERIAL REQUIRED FOR SLIDE AND TUBE TESTS**

Glass slides (50 x 75 mm), Test tubes (12 x 75 mm), Pasteur pipettes, Isotonic saline, Centrifuge, Timer, Mixing sticks.

**TEST PROCEDURE**

Bring all reagents and samples to room temperature before testing.

**Slide Test**

1. Prepare a **10%** suspension of the red blood cells to be tested in isotonic saline.
2. Place one drop of <sup>®</sup> Anti- A<sub>1</sub> lectin on a clean glass slide.
3. Pipette two drops of the cell suspension on the slide.
4. Mix well with a mixing stick uniformly over an area of approximately 2.5 cm<sup>2</sup>.
5. Rock the slide gently, back and forth.
6. Observe for agglutination macroscopically **at one minute**.

#### **Tube Test**

1. Prepare a **5%** suspension of the red cells to be tested in isotonic saline.
2. Place one drop of <sup>®</sup> Anti- A<sub>1</sub> lectin into a labelled test tube.
3. Pipette into the test tube, one drop of the test red cell suspension.
4. Centrifuge for 1 minute at 1000 rpm (125 g) or 20 seconds at 3400 rpm (1000 g).
5. Gently resuspend the cell button, observing for agglutination macroscopically.

### **INTERPRETATION OF RESULTS**

#### **Slide and Tube Tests**

Agglutination is a positive test result and indicates the presence of A<sub>1</sub> antigen. Do not interpret peripheral drying or fibrin strands as agglutination. No agglutination is a negative test result and indicates the absence of A<sub>1</sub> antigen.

#### **REMARKS**

1. A<sub>1</sub> antigen is not fully expressed on the red blood cells of newborns below one year of age, hence false negative results may occur.
2. It is strongly recommended that known A<sub>1</sub> and A<sub>2</sub> cells should be occasionally run, preferably on a daily basis to control reagent performance and validate test results.
3. A<sub>1</sub>- A<sub>2</sub> (A<sub>int</sub>) cells may agglutinate moderately with Anti-A<sub>1</sub> lectin. These should be tested further with Anti-H lectin to confirm A<sub>int</sub> cells.
4. As undercentrifugation or overcentrifugation can lead to erroneous results, it is recommended that each laboratory calibrate its own equipment and determine the time required for achieving the desired results.

#### **WARRANTY**

This product is designed to perform as described on the label and the package insert. The manufacturer disclaims any implied warranty of use and sale for any other purpose.

#### **BIBLIOGRAPHY**

1. Lee H.H., Rouger P., Germain C., Muller A. & Salmon C. (1983). The production and standardisation of monoclonal antibodies as AB blood group typing reagents, Symposium of International Association of Biological standardisation on monoclonal antibodies.
2. Blood Transfusion in Clinical Medicine, P.L. Mollison, C. P. Engelfriet, Marcela Contreras, 10th Ed., Blackwell Science, 1997.
3. AABB Technical Manual, 13th Ed., 1999.
4. Human Blood Groups by Geoff Daniels, 1st Ed., Blackwell Science, Oxford 1995.
5. HMSO, Guidelines for the Blood Transfusion Services., 2nd Ed., 1994.

Core Diagnostics LTD  
Aspect Court, 4 Temple Row- Birmingham B2 5HG- United Kingdom