matrix™
GEL • SYSTEM

Cat. No.	102750024
Presentation	24 Cards

Matrix™ ABO Subgrouping Card Anti-A_1

SUMMARY

ABO subgroups are phenotypes that differ in the amount of antigen carried on red cells and, for secretors, soluble antigen present in the saliva. Subgroups of A are more commonly encountered than subgroups of B. The two principal subgroups of A are A_1 and A_2. Red cells from A_1 and A_2 persons both react strongly with reagent anti-A in direct agglutination tests. The serologic distinction between A_1 and A_2 cells can be determined by testing with Anti-A_1 Lectin (*Dolichos biflorus*). There is both a qualitative and quantitative difference between A_1 and A_2. Red blood cells which agglutinate with Anti-A_1 Lectin are classified as subgroup A_1, whereas red blood cells which do not react with Anti-A_1 Lectin are classified as subgroup A_2.

REAGENTS

Matrix™ ABO Subgrouping card Anti-A_1 contains six microtubes prefilled with a gel in a suitable buffer containing Anti-A_1 Lectin.

STORAGE AND STABILITY

Store Matrix™ gel cards in an upright position at 4-25°C. Do not freeze.
Avoid exposure of Matrix™ gel cards to direct sunlight or any heat source. The shelf life of Matrix™ gel cards is as per the expiry date mentioned on the label. Do not use beyond expiry date. Once the aluminium foil is removed from the microtube, it should be used immediately.

ADDITIONAL REAGENTS AND MATERIALS REQUIRED

Matrix™ Diluent -2 LISS for preparation of red cell suspension. Papain solution suitable for serological applications (Refer package insert before use). Gel card centrifuge (85g), Work station, Micropipette capable of delivering 5-50µl of specimen and Bottle top dispenser.

PRINCIPLE

As the Matrix™ gel card containing red blood cells is centrifuged under specific conditions, the red blood cells possessing the corresponding antigen will agglutinate in presence of the specific antibody and will be trapped in the gel column. The red blood cells, which do not react are not trapped in the gel column and get settled at the bottom of the microtube. The reactions are then read and graded according to their reactivity pattern.

SAMPLE COLLECTION

No special preparation of the patient is required prior to sample collection by approved techniques. For optimal results, freshly collected samples should be used. Anticoagulants like EDTA, CPD-A and Citrate can be used.
Samples should be centrifuged at 1500g for 10 minutes to avoid fibrin residue which may interfere with results.

SAMPLE PREPARATION

Prepare 0.8% red cell suspension in Matrix™ Diluent- 2 LISS as follows:

1. Bring the Matrix™ Diluent -2 LISS to room temperature before testing.
2. Dispense 1.0 ml of Matrix™ Diluent -2 LISS into a clean test tube.
3. Add 10µl of packed red cells and mix gently.
4. Red blood cell suspension so obtained should be used for testing.

TEST PROCEDURE

1. Label the Matrix™ ABO Subgrouping Card Anti-A_1 with patient's name / identification number. Remove the aluminium foil of required number of microtubes carefully by pulling it backwards.
2. Pipette 50 µl of 0.8% patient's red cell suspension to appropriate microtube.
3. Add 25 µl of Enzyme (Papain) to the above microtube.
4. Allow the card to incubate for 10 minutes at room temperature.
5. Centrifuge the Matrix™ gel card for 10 minutes in the gel card centrifuge.
6. Retrieve the card from centrifuge, read and record the results.

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INTERPRETATION OF RESULTS

Positive reaction: Agglutinated red blood cells forming a clear line on the surface of gel column or agglutinates dispersed in the gel column.

Negative reaction: Non agglutinated red blood cells settle at the bottom of the microtube forming a compact button.

The reaction strength may be recorded as follows:

Strength of reaction	Comments
4+	Agglutinated red blood cells form a line at the top of the gel microtube.
3+	Most agglutinated red blood cells remain in the upper half of the gel microtube.
2+	Agglutinated red blood cells are observed throughout the length of the microtube. A small button of red blood cells may also be visible at the bottom of the gel microtube.
1+	Most agglutinated red blood cells remain in the lower half of the microtube. A button of cells may also be visible at the bottom of the gel microtube.
±	Most agglutinated red blood cells are in the lower third part of the gel microtube.
Negative	All the red blood cells pass through and form a compact button at the bottom of the gel microtube.
Mixed field agglutination	Agglutinated red blood cells form a line at the top of the gel and non-agglutinated red blood cells form a compact button at the bottom of the gel microtube.
H	Hemolysis of red blood cells

Reactions for A subgroups related to A_1 and A_2 antigens.

	Anti-A	Anti-AB	Anti-A_1	Anti-H
A_1	++++	++++	++ to ++++	+ to +++
A_2	+++ to ++++	++++	Neg to +	++ to ++++
A_1B	++++	++++	++ to ++++	+ to +++
A_2B	+++ to ++++	++++	Neg to +	+ to +++

NOTE

1. In vitro diagnostic reagent for laboratory and professional use only. Not for medicinal use.
2. The Matrix™ gel cards contains sodium azide <0.1% as preservative. Avoid contact with skin and mucosa. On disposal flush with large quantity of water.
3. All Matrix™ gel cards should be centrifuged for one complete cycle (10 minutes) in gel card centrifuge before use.
4. Visually inspect the Matrix™ gel cards before use.
5. Matrix™ gel cards having bubble(s) entrapped within the gel can be centrifuged for two complete cycles in gel card centrifuge to remove the bubble, if bubbles are not removed the card should not be used.
6. Matrix™ gel cards that exhibit any signs of drying (i.e. absence or reduced level of reagent buffer above the gel column), decreased volume of gel, cracked gel should not be used.
7. Matrix™ gel cards with damaged aluminium foil seal should not be used.
8. Freezing of Matrix™ gel cards or evaporation of gel or reagent buffer due to exposure to heat may lead to erroneous results.
9. Fibrin or particulate matter if present in the sample may lead to erroneous results.
10. Fibrin if present in the sample may trap red blood cells on top of gel column presenting a pink line. To avoid, samples should be well centrifuged at 1500g for 10 minutes before taking serum or plasma and RBCs should be washed if not collected properly in an anticoagulant.
11. Use of red blood cells concentration/ volume and reagents other than those described may lead to erroneous results. Follow the instructions carefully.
12. Aged or stored red blood cells may exhibit weaker reactivity than freshly collected cells.
13. Do not use hemolysed, lipemic and icteric samples.
14. Extreme turbidity or discoloration may indicate microbial contamination or denaturation of protein due to thermal damage. Such Matrix™ gel cards should be discarded.
15. Contamination of reagents during usage may cause false positive or negative results.
16. Red cell aggregation in the red cell suspension may interfere with the passage.
17. Aluminium foil seal of Matrix™ gel cards should be removed gently and carefully by pulling the foil seal backwards to avoid contamination of reagents from one microtube to another.
18. To avoid contamination always use fresh tips before dispensing into each microtube.

REMARKS

1. Known positive and negative controls should be tested as per Good Laboratory Practices.
2. ERYWELL (Cat. No. 10253020) can be used as red blood cell preservative solution for preservation of known cells.

BIBLIOGRAPHY

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