

Kit Name	Kit size	Cat No
Bovine Serum Albumin 22% w/v	1 x 5 ml	BSA010005M
Bovine Serum Albumin 22% w/v	1 x 10 ml	BSA010010M

INTRODUCTION

Bovine Albumin (22% w/v) is intended for use as a red cell suspending medium in immunohematology for In-vitro recognition of red cell antigens with respective incomplete antibodies. It is also used for recognition and quantitation of unknown antibodies.

Incomplete antibodies do not agglutinate red cells suspended in normal saline medium. However agglutination of red cells occur in the presence of a colloidal medium. It is believed that the colloidal medium enhances agglutination by reducing the electrical repulsion between red cells (which are usually negatively charged). Cameron and Diamond showed that the addition of Bovine Albumin Solution raises the dielectric constant of a medium thereby reducing the repulsion between the red cells, hence red cells agglutinate with corresponding incomplete antibodies in presence of Bovine Albumin Solution.

GB's Bovine Albumin 22% w/v solution is prepared from specifically selected raw material and is carefully standardized to give optimum performance without any non-specific or auto agglutination.

METHOD PRINCIPLE

The presence of Bovine Albumin 22% w/v solution raises the dielectric constant of the red cells medium and thereby reduces intercellular repulsion, hence in presence of Bovine Albumin 22% w/v solution incomplete antibodies agglutinate with the corresponding antigens on the red blood cells.

KIT CONTENTS

Reagent Name	BSA010005M	BSA010010M
Bovine serum Albumin 22% w/v	1 X 5 ml	1 X 10 ml

WORKING REAGENT PREPARATION AND STABILITY

Unopened vial when stored at 2-8 °C is stable till the expiry date mentioned on the label of the container, (DO NOT FREEZE)

EQUIPMENT REQUIRED:

- a) Test tube 10 x 75 mm
- b) Centrifuge
- c) Water bath at 37 C
- d) Pasture pipette

PROCEDURE:

I) DETECTION OF INCOMPLETE ANTIBODIES (IgG):

A) Albumin replacement technique:

1. Wash the known or unknown antigenic structure RBC's three times with normal saline.
2. Prepare 2-5% cell suspension in normal saline.
3. In a test tube (2" x 3/8") add two drops of above cell suspension and two drops of patient's serum or anti-D (Rho) serum and mix well.
4. Incubate at 37°C for 90 minutes.
5. Aspirate supernatant saline without disturbing the cells. Add 2 drops of 22% Bovine Albumin from the side of the test tube to form an albumin layer on top of RBC's. DO NOT MIX
6. Further incubate the tube at 37 °C for 30 minutes.
7. Observe the results macroscopically and microscopically.

B) Albumin displacement technique:

1. Follow step 1,2,3 & 4 of Albumin replacement technique (A)

2. Add two drops of Bovine Albumin (22% w/v) to the above tube from the side wall of the test tube to displace the saline mixture.
3. Incubate further at 37°C for 30 minutes.
4. Observe the results macroscopically and microscopically.

II) CROSS-MATCHING:

1. Wash the donor's and patient's RBC's separately with normal saline in two different tubes thrice.
2. Prepare 2-5% cell suspension in normal saline.
3. Label two tubes as major & minor.
4. In the tube labels major, add 2 drop of patient's serum and 2 drops of the donor's above cell suspension.
5. In the tube labeled minor add 2 drops of the donor's serum and 2 drops of the patient's above cell suspension.
6. Incubate both the tubes at 37°C for 90 minutes.
7. Follow remaining procedure of the Albumin replacement technique (I-A) from steps 5,6 & 7.

IMPORTANT:

In case of an emergency reduce the incubation time to 10-15 min in step 6 and centrifuge the tubes at 1000 RPM for 1 minute. Decant the supernatant and add one drop of Bovine Albumin (22% w/v). Further incubate for 10-15 minutes and observe microscopically for agglutination.

QUALITY CONTROL:

It is recommended that with every set of test known positive, negative & auto agglutinin (RBC's in its own serum) controls should be run. The factors other than reagents, which might affect the performance of this test include cleanliness of glasswares & rouleaux formation.

RESULTS:

Incomplete antibody present in the serum sample will agglutinate with corresponding antigen and the absence of antibodies will not give agglutination with corresponding antigen. In case of cross-matching compatible blood will not give any agglutination & incompatible blood will give on agglutination.

NOTE:

False positive reactions may occur due to Rouleaux formation, or contamination or Bovine Albumin solution or strong in vivo sensitization of RBC's.

PERFORMANCE:

GB's Bovine Albumin 22% w/v is rigorously tested and found to be free from any non-specific as well as auto-agglutination reactions.

LITERATURE:

1. Cameron, J.W. & Diamond L.K(1945) J.Clin, Invest 23, 793
2. Mollison P.L. Blood transfusion in clinical medicine sixth edition P.247



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