

SEROLOGICAL ENHANCEMENT MEDIUM
DIRECTIONS FOR USE

PEG-ADD: For Potentiating Indirect Antiglobulin Techniques.

SUMMARY

It is well established that reducing the ionic strength of a test system increases the rate of antigen-antibody binding in indirect antiglobulin tests. The sensitivity of indirect antiglobulin techniques can also be increased by the use of polyethylene glycol (PEG) as a potentiating medium.

PRINCIPLE

When added to a solution of immuno-reactants, high molecular weight polymers displace other molecules, thereby increasing the amount of contact between antigen and antibody. When PEG is dissolved in a low ionic strength solution, the enhancement properties of both are combined and a smaller volume can be added to each test than if PEG is dissolved in normal ionic strength saline.

REAGENT

Lorne PEG-ADD is a low ionic strength solution contains glycine, a phosphate buffer and polyethylene glycol. The reagent is supplied at optimal dilution for use with all the recommended techniques stated below without the need for further dilution or addition. For lot reference number and expiry date see **Vial Label**.

STORAGE

Do not freeze. Reagent vials should be stored at 2 - 8°C on receipt. Prolonged storage at temperatures outside this range may result in accelerated loss of reagent reactivity. Reagent will remain stable for up to 7 days when subjected to temperatures not exceeding 30°C

SAMPLE COLLECTION AND PREPARATION

Blood samples drawn with or without anticoagulant may be used for antigen typing. If testing is delayed then store specimens at 2-8°C. Specimens collected into ACD, CPD or CPDA-1 may be tested up to 35 days from the date of withdrawal. Other samples should be typed within 48 hours. All blood samples should be washed at least twice with PBS before being tested.

PRECAUTIONS

1. The reagent is intended for *in vitro* diagnostic use only.
2. If vial is cracked or leaking, discard the contents immediately.
3. Do not use the reagent past the expiration date (see **Vial Label**).
4. Do not use the reagent if a precipitate is present.
5. Protective clothing should be worn when handling the reagent, such as disposable gloves and a laboratory coat.
6. The reagent has been filtered through a 0.2 µm capsule to reduce the bio-burden. Once a vial has been opened the contents should remain viable up until the expiry date as long as there is no marked turbidity, which can indicate reagent deterioration or contamination.
7. The reagent contains 0.1% sodium azide. Sodium azide may be toxic if ingested and may react with lead and copper plumbing to form explosive metal azides. On disposal flush away with large volumes of water.
8. No known tests can guarantee products derived from animal sources are free from infectious agents. Care must be taken in the use and disposal of each vial and its contents

DISPOSAL OF REAGENT AND DEALING WITH SPILLAGES

For information on disposal of the reagent and decontamination of a spillage site see **Material Safety Data Sheets**, available on request.

CONTROLS AND ADVICE

1. It is recommended Lorne Precise Weak Anti-D and appropriate red cells (ideally R_{1r} and rr) be tested in parallel with each batch of tests. Tests must be considered invalid if controls do not show the expected results.
2. The antiglobulin technique can only be considered valid if all negative tests react positively with IgG sensitised red cells
3. The use of polyspecific anti-human globulin with Lorne PEG-ADD may result in non-specific reactions.
4. In the **Recommended Techniques** one drop is approximately 40 µl when using the vial dropper provided
5. The use of the reagent and the interpretation of results must be carried out by properly trained and qualified personnel in accordance with the requirements of the country where the reagents are in use.
6. The user must determine the suitability of the reagent for use in other techniques.

REAGENTS AND MATERIALS REQUIRED

- Anti-human IgG i.e. Lorne Monospecific Anti-IgG (Cat # 402010).
- Coombs cells washer.
- Glass test tubes (10 x 75 mm or 12 x 75 mm).
- IgG sensitised red cells i.e. Lorne Coombs Control Cells (Cat # 970010).
- Lorne Precise Weak Anti-D (Cat # 209005).
- Phosphate Buffered Saline (PBS): NaCl 0.9%, pH 7.0 ± 0.2 at 22°C ± 1°C
- Positive (ideally R_{1r}) and negative (rr) control red cells.
- Volumetric pipettes.
- Water bath or dry heat incubator equilibrated to 37°C ± 2°C.

RECOMMENDED TECHNIQUE

1. Prepare a 2-3% suspension of washed test red cells in PBS.
2. Place in a labelled test tube: 2 volumes test serum, 1 volume test red cell suspension and 2 volumes Lorne PEG-ADD.
3. Mix thoroughly and incubate at 37°C for 15 minutes.
4. Wash test red cells 4 times with PBS, taking care to decant saline between washes and resuspend each cell button after each wash. Completely decant saline after last wash.
5. Add 2 volumes of anti-human globulin to each dry cell button.
6. Mix thoroughly and centrifuge all tubes for 20 seconds at 1000 rcf or for a suitable alternative time and force.
7. Gently resuspend the cells and read for agglutination.

INTERPRETATION OF TEST RESULTS

1. **Positive:** Agglutination of test red cells constitutes a positive test result.
2. **Negative:** No agglutination of the test red cells constitutes a negative result.

STABILITY OF THE REACTION

1. Tests should be read immediately after centrifugation. Delays may result in dissociation of antigen-antibody complexes leading to false negative, or weak positive reactions.
2. Caution should be exercised in the interpretation of results of tests performed at temperatures other than those recommended.

LIMITATIONS

1. Red cells that have a positive DAT due to a coating of IgG cannot be typed by the indirect antiglobulin technique.
2. Lorne PEG-ADD should not be used as a red cell suspending medium.
3. Not all antigen-antibody reactions are enhanced by the use of Lorne PEG-ADD in the indirect antiglobulin technique.
4. Red cells tend to aggregate in the presence of linear polymers therefore Lorne PEG-ADD may only be used in the indirect antiglobulin test.
5. IgM antibodies may not be detected by the indirect antiglobulin technique.
6. False positive or false negative results may also occur due to:
 - Contamination of test materials
 - Improper cell concentration
 - Improper incubation time or temperature
 - Improper or excessive centrifugation
 - Improper storage of test materials or omission of reagent
 - Deviation from the recommended techniques

SPECIFIC PERFORMANCE CHARACTERISTICS

1. Prior to release, each lot of Lorne PEG-ADD has been shown to enhance many antigen-antibody reactions when used by the **Recommended Technique**.
2. The solution complies with the recommendations contained in the latest issue of the Guidelines for the UK Blood Transfusion Services.

DISCLAIMER

1. The user is responsible for the performance of the reagent by any method other than those mentioned in the **Recommended Technique**.
2. Any deviations from the **Recommended Technique** should be validated prior to use⁷.

BIBLIOGRAPHY

1. Widman FK. Technical Manual, 9th Edition. American Association of Blood Banks, Arlington, VA, 1985; Chapter 8
2. Mollison PL. Blood Transfusion in Clinical Medicine, 8th Edition. Blackwell Scientific, Oxford 1987; Chapter 7
3. Issitt PD. Applied Blood Group Serology, 3rd Edition. Montgomery Scientific, Miami 1985; Chapter 6
4. B.Wenz, J.Apuzzo and D.P.Shah, Evaluation of the polyethylene glycol-potentiated indirect antiglobulin test, Transfusion 1990-Vol.30, No.4
5. R.S.Shirey, J.S.Boyd and P.M.Ness, Polyethylene glycol versus low-ionic-strength solution in pretransfusion testing: a blinded comparison study, Transfusion 1994-Vol.34, No.5
6. Guidelines for the Blood Transfusion Service in the United Kingdom. H.M.S.O. Current Edition.
7. British Committee for Standards in Haematology, Blood Transfusion Task Force. Recommendations for evaluation, validation and implementation of new techniques for blood grouping, antibody screening and cross matching. Transfusion Medicine, 1995, 5, 145-150.

AVAILABLE REAGENT SIZES








Vial Size	Catalogue Number
10 ml	485010
1000 ml	485000

For the availability of other sizes, please contact:

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TABLE OF SYMBOLS

	Batch Number		<i>In-vitro</i> Diagnostic
	Catalogue Reference		Store At
	Expiry Date		Manufacturer
	Read Pack Insert		