

## Anti-P<sub>1</sub>: For Tube and DiaMed-ID Techniques.

### MONOCLONAL BLOOD GROUPING REAGENTS

#### SUMMARY

Landsteiner discovered the P<sub>1</sub> antigen in 1927. Anti-P<sub>1</sub> does not generally react above room temperature and may often go undetected in routine testing. Anti-P<sub>1</sub> does not cause Haemolytic Disease of the Newborn and has only rarely been associated with Haemolytic Transfusion Reactions.

Anti-P <sub>1</sub>	Phenotype	Caucasians %	Afro-Americans %
+	P <sub>1</sub>	79	94
0	P <sub>2</sub>	21	6

#### PRINCIPLE

The reagent will cause agglutination (clumping) of test red cells that carry the P<sub>1</sub> antigen, after centrifugation. No agglutination generally indicates the absence of the P<sub>1</sub> antigen (see Limitations).

#### REAGENT

Atlas Monoclonal IgM Anti-P<sub>1</sub> blood grouping reagent contains mouse monoclonal IgM antibodies prepared from the cell line, Clone 650, diluted in a solution containing sodium chloride and bovine albumin. The reagent is supplied at optimal dilution for use with all 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. EDTA and citrate samples should be typed within 48 hours. Samples collected into ACD, CPD or CPDA-1 may be tested up to 35 days from the date of withdrawal. All blood samples should be washed at least twice with PBS before being tested.

#### PRECAUTIONS

- The reagent is intended for *in vitro* diagnostic use only.
- If a reagent vial is cracked or leaking, discard the contents immediately.
- Do not use the reagent past the expiration date (see Vial Label).
- Do not use the reagent if a precipitate is present.
- Protective clothing should be worn when handling the reagents, such as disposable gloves and a laboratory coat.
- 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.
- 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.
- Materials used to produce the reagent were tested at source and found to be negative for HIV 1+2 and HCV antibodies and HBsAg using approved microbiological tests.
- No known tests can guarantee that products derived from human or animal sources are free from infectious agents. Care must be taken in the use and disposal of each vial and its contents.

#### CONTROLS AND ADVICE

- It is recommended a positive control (ideally P<sub>1</sub> weak cells) and a negative control be tested in parallel with each batch of tests. Tests must be considered invalid if controls do not show expected results.
- In the Tube Technique one volume is approximately 40µl when using the vial dropper provided.
- 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 reagent is in use.
- The user must determine suitability of the reagent for use in other techniques.

#### REAGENTS AND MATERIALS REQUIRED

- DiaMed ID-Cards (Neutral).
- DiaMed ID-Centrifuge.
- DiaMed ID-Diluent: e.g. ID-CeliStab.
- Glass test tubes (10 x 75 mm or 12 x 75 mm).
- Phosphate Buffered Saline (PBS): NaCl 0.9%, pH 7.0 ± 0.2 at 22°C ± 1°C.

- Positive (ideally P<sub>1</sub> weak) and negative control red cells.
- Test tube centrifuge.
- Volumetric pipettes.

#### RECOMMENDED TECHNIQUES

##### A. Tube Technique

- Prepare a 2-3% suspension of washed test red cells in PBS.
- Place in a labelled test tube: 1 volume of Atlas Anti P<sub>1</sub> reagent and 1 volume of test red cell suspension.
- Mix thoroughly and incubate at 4°C ± 2°C for 30 minutes.
- Centrifuge all tubes for 20 seconds at 1000 rcf or for a suitable alternative time and force.
- Gently resuspend red cell button and read macroscopically for agglutination.

##### B. DiaMed-ID Micro Typing Technique

- Prepare a 0.8% suspension of washed test red cells in an ID-Diluent.
- Remove aluminium foil from as many microtubes as needed.
- Place in appropriate microtube: 50µl of test red cell suspension and 25µl of Atlas Anti- P<sub>1</sub> reagent.
- Incubate the ID-Card for 30 minutes at 4°C ± 2°C.
- Centrifuge ID-Card for 10 min at 90 rcf or suitable alternative time and force.
- Read macroscopically for agglutination.

#### INTERPRETATION OF TEST RESULTS

- Positive: Agglutination of the test red cells constitutes a positive test result and within accepted limitations of test procedure, indicates the presence of the P<sub>1</sub> antigen on the test red cells.
- Negative: No agglutination of the test red cells constitutes a negative result and within the accepted limitations of the test procedure, indicates the absence of the P<sub>1</sub> antigen on the test red cells.

#### STABILITY OF THE REACTIONS

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

#### LIMITATIONS

- The P<sub>1</sub> antigen is poorly expressed on the cells of newborns.
- There is a wide variation in the amount of P<sub>1</sub> antigen present on different P<sub>1</sub> positive cells. The strength of agglutination observed with such cells is likely to vary accordingly.
- Stored blood may give weaker reactions than fresh blood.
- False positive or false negative results may also occur due to
  - Contamination of test materials
  - Improper storage, cell concentration, incubation time or temperature
  - Improper or excessive centrifugation
  - Deviation from the recommended techniques

#### SPECIFIC PERFORMANCE CHARACTERISTICS

- The reagent has been characterised by all the procedures mentioned in the Recommended Techniques.
- Prior to release, each lot of Atlas Monoclonal Anti-P<sub>1</sub> is tested by the Recommended Techniques against a panel of antigen-positive red cells to ensure suitable reactivity.
- Specificity of source monoclonal antibody is demonstrated using a panel of antigen-negative cells.
- The Quality Control of the reagent was performed using red cells that had been washed twice with PBS prior to use.

#### DISCLAIMER

- The user is responsible for the performance of the reagent by any method other than those mentioned in the Recommended Techniques.
- Any deviations from the Recommended Techniques should be validated prior to use<sup>7</sup>.

#### BIBLIOGRAPHY

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**Atlas Medical**  
**William James House, Cowley Rd,**  
**Cambridge, CB4 4WX, UK**  
**Tel: ++44 (0) 1223 858 910**  
**Fax: ++44 (0) 1223 858 524**

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