1. **Principle**

During the investigation of a positive antibody screen or DAT it is often not possible to identify the antibody/antibodies present or to phenotype the RBC's without the use of special procedures.

1. **Scope and Related Policies** 
   1. The following Table SP.001-1 should be used as a guideline to selecting the most appropriate procedures to use in a variety of situations.
   2. The use of cord blood cells may also help to solve some serological problems; the expected reactions of cord red cells with various antibodies are shown on Table SP.001-2.
   3. Not all sites will perform the procedures indicated in the following charts; this guide is for reference only. The sample may be referred to a reference laboratory for those sites not licensed to perform the test.
2. **Specimen – N/A**
3. **Material – N/A**
4. **Quality Control – N/A**
5. **Procedure**

|  |
| --- |
| * 1. The tables on the following pages offer suggestions for further investigation/identification of specific antibodies/antigens. |
| * 1. This guideline document will be used in conjunction with the work instruction for the specific test recommended. |

1. **Reporting – N/A**
2. **Procedural Notes – N/A**

Table SP.001-11 - GUIDELINES TO CONTINUING ANTIBODY INVESTIGATION

|  |  |  |
| --- | --- | --- |
| SUSPECTED  ANTIBODY  SYSTEM | ACTION | OTHER |
| Fy | Papain treated cells (destroy)  AIDAT (enhance)  LIDAT (may enhance) | Rare frozen cells |
| High  Frequency  (HFA) | Papain treated cells  Obtain ethnic history  Test patient RBC with high frequency antisera  Select high frequency negative RBC's from rare cell stock  Request family members for testing |  |
| HLA  Red Cell  Related  (Bg) | Papain (may/may not enhance)  AIDAT (enhance)  Platelet absorbed plasma (reduce/remove)  Chloroquine treated RBC's (remove) | Test known Bg cells |
| HTLA  (All)  Ch/Rg | 1/10 dilution plasma (same reactivity)  Papain treated cells  AET treated cells  HTLA panel from frozen stock  Neutralisation with inert FNS (destroy)  C4D coated cells Direct agglutination reaction (enhance) | HTLA rare sera for pheno-  typing |
| Jk | PEG or AIDAT (enhance)  Papain treated cells (may remain same or enhance )  2 stage EDTA C' added use polyspecific AHS (enhance) | Rare frozen cells |
| K | Papain treated cells (may enhance)  AIDAT (enhance)  LIDAT (may be non-reactive)  AET or ZZAP(destroy) | Rare frozen cells |
| Lewis | Room Temperature Incubation  spin/read (enhance)  PIDAT - POLY AHS (enhance)  Inhibit with Lewis substances (destroy)  Inhibit with saliva (destroy)  2 stage EDTA C' added use polyspecific AHS (enhance) |  |
| Low  Frequency  (LFA) | Repeat tests to confirm reactions  Confirm reactions not due to dosage, try to enhance using PIDAT, PLIDAT or AIDAT  Reduce temperature for incubation to exclude cold agglutinins reacting at higher temperatures | LFA + frozen cells |

|  |  |  |
| --- | --- | --- |
| **SUSPECTED**  **ANTIBODY**  **SYSTEM** | **ACTION** | **OTHER** |
| MNSs | MN: Room Temperature incubation  spin/read (enhance)  AIDAT (enhance)  Acidify plasma (enhance)  S: Room Temperature incubation  IDAT (enhance)  s: AIDAT, LIDAT (enhance)  MNS: Papain treated RBC's (destroy)  s: Papain treated RBC's (may not destroy) | Rare frozen cells |
| P | Room Temperature Incubation  spin/read (enhance)  AIDAT (enhance)  PIDAT - Poly AHS (enhance)  Inhibit with P substance (destroy)  Inhibit with P.E.W. (destroy) |  |
| Rh | Papain treated cells (enhance)  AIDAT (enhance)  Albumin Layering (enhance) | Rare frozen cells |

**Legend**

Antigen/Antibodies: HFA High frequency antigen

Bg Bennett Goodspeed

HLA Human Leukocyte antibody

HTLA High titre low avidity

LFA Low frequency antigen

Methods: AIDAT Albumin indirect antiglobulin test

LIDAT LISS indirect antiglobulin test

FNS Fresh normal serum (inert)

PEG Polyethylene glycol

PIDAT Papain indirect antiglobulin test

PLIDAT Papain/LISS indirect antiglobulin test

ZZAP DTT/papain treated cells

PEW Pigeon egg white

Table SP.001-2 2 - ALPHABETICAL LISTING OF CORD CELL ANTIGENS

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ANTIGEN | STATUS | ANTIGEN | STATUS | ANTIGEN | STATUS | ANTIGEN | STATUS |
| A  Ata  Aua  B  Bea  Becker  Bg  Bi  By  C  c  Chido  Cla  Coa  Cob  Csa  Cw  D  Dia  Dib  Doa  Dob  Dp  E  e  El |   W  W    P  P    P  P  W  W    W  W  W  P  W  W  W  W  W  W  P  W  W  P | Ena  Evans  f  Far  Fya  Fyb  Fy:3  Fy:4  Fy:5  G  Ge  Gna  Good  Gya  H  Heibel  Hov  Hta  Hy  I  i  Jka  Jkb  Jra  Jsa  Jsb | W  P  W  W  W  W  P  U  P  P  W  P  P    P  P  P  P        W  W  W  W  W | K  k  Kna  Kpa  Kpb  Ku  Lea  Leb  Lex  Lua  Lub  Lu6  Luke  LW  M  M1  McCa  Mg  Milten-  berger  complex  Mt  N  Nya  P  P1 | W  W  W  W  W  P      P        W  W  W  P  P  W  W  W  W  W  W   | Rd  Rg  Rh17  rhi(Ce)  Rm  Rosebush  S  s  Sc:1(SM) Sc:2(Bua)  Sda  Sfa  Tm  Toa  U  V(Ces)  Vel  Ven  VS(es)  Wra  Wrb  Yta  Ytb  Yka  Zd | P    P  W  P  P  W  W  W  W  N  P    P  P  W    P  W  P  U    W  P  P |

**REACTION TO STRENGTH:**  Compared to adult cells

 = decreased  = increased

 = greatly decreased  = greatly increased

**W** = well developed

**N** = not present

**U** = Unknown (not in literature)

**P** = Present, implicated in HDN or strength of antigen not stated.

1. **References**
   1. Roback JD Ed. Technical Manual 17th edition Bethesda MD; AABB; 2011:463-496.
   2. Transfusion and Apheresis Science: Volume 40, Issue 3, June 2009; Neurath, D ed.
2. **Revision History**

|  |  |
| --- | --- |
| **Revision Date** | **Summary of Revision** |
| September 1, 2014 | * Revised name of manual * Revised wording in section 2.1 to reflect title change from “Chart 1” to “Table SP.001-1” * Revised wording in section 2.2 to reflect title change from “Chart 2” to “Table SP.001-2” * Revised wording to include “may remain same or enhance” in chart 1 * Revised list of references |