**Junk Bonds** (or **C**linically **I**nsignificant **A**ntibodies)

**Not all that agglutinates *in vitro* is clinically significant *in vivo*.**

* The trick is to differentiate.
* The 2nd trick is to stick to the rules: Ruling out/cross outs are still the same and they are the key to successful differentiation.
* The 3rd trick is to work through it while minimizing delay when transfusion is urgent.

**From TraQ**: If more than 90% of the cells are positive and reaction strengths are similar by the AHG phase, suspect the following types of antibodies:

High Incidence = negative auto control, try to find a negative cell by searching other panels

Cold agglutinins: reactions stronger at IS, RT and/or 37C

HTLA antibodies: AHG phase, weak reactions, not clinically significant

Auto antibodies: auto control and DAT are positive

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| **Antigen** | **Description** | **Enhancement/Rule Out** | **Frequency** |
| **Bg** | Bennett-Goodspeed  White cell antigens with various names  Bga = HLA-B7  Bgb = HLA-B17  Bgc = HLA-A28  Antibodies: Weak, variable reactions due to variable antigen expression on RBCs | * AHG reactive * Denatured by chloroquine diphosphate * Often resolved as “antibody of unknown specificity” * Issue AHG crossmatch compatible * If screening cells are Bg+ we may request a new lot | Variable Expression |
| **Cold Agglutinins** | Anti-I, -IH (typically “auto” isn’t added to the front – it is understood  Everybody has them if you look hard enough  Can be pathological causing a hemolytic syndrome  Nothing we can do; clinicians’ job to treat the cause  Transfusion through a blood warmer can help; wrap patient in warming blanket | * Stay away from room temperature * Keep patient sample warm * Usually detected in the ABO/D testing * Prewarm antibody screen * IS crossmatch can be real trouble here * Worries? Is there something hiding under it – that is the $1,000,000 question. | 100% |
| **Chemicals** | LISS antibodies  Gel antibodies  PeG antibodies  You name it – patients have antibodies against some constituent of the reagent.  Remove the reagent-reactions go away.  Where do we get these antibodies? Medications and chemicals we eat and drink | Every cell weakly positive;  Try another enhancement – every cell is negative  Auto will also be positive but DAT is negative | Rare |

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| Antigen | Description | | Identification/TS Policy |
| **HTLA**  ***A Misnomer*** | **Professor W. John Judd at the University of Michigan Medical Center** (attribution used with permission), reports that in his experience **the term "HTLA" is a misnomer**, usually applied to antibodies to **KNOPS** antigens, but some would consider Ch/Rg, Yta, Csa, JMH and LU antibodies to be part of that group. He reminds us that KNOPS antibodies are not always of high titer, and avidity has nothing to do with their weak reactivity; rather, it is a matter of low antigen site density on RBCs.  That said:  They have not been shown to cause significant destruction of transfused antigen-positive red cells.  High-titer, low-avidity (HTLA) antibodies are frequently described as "reactive weakly by the antiglobulin test." Antibodies that react to HTLA characteristics cause difficulties in serologic testing because of the weak reactions they produce in the indirect antiglobulin test. The antibodies create problems in serologic tests because the reactions they produce interfere with the identification of reactions due to other, clinically significant antibodies.  These antibodies include: anti-Chido (Cha) and anti-Rodgers (Rga), and anti-Cost-Stirling (Csa) and anti-York (Yka), anti-Knops (Kna) and anti-McCoy (McCa), and anti-John Milton Hagen (JMH), the majority of which are directed at high-incidence red cell antigens. The classic HTLA antibodies are thought to be incapable of fixing complement or causing in vitro hemolysis. Present data indicate that these antibodies do not cause either increased red cell destruction when incompatible blood is transfused or hemolytic disease of the newborn. Special serological techniques can be used to differentiate the antibodies within the HTLA classification from antibodies not of an HTLA nature.  NOTE: a King County resident with anti-Ro (Rogers) requires washed cells due to anaphylactic reactions to Rogers (complement) molecules present in the donor unit. Very unusual! | | Weak reactions at AHG with no discernible pattern.  Some can be titered out a LOOOONG way with reactions remaining w+/1+; hence the name **H**igh **T**iter **L**ow **A**vidity  Problem for PSBC’s RCRL to fully resolve  Requires special cells and methods to differentiate:   * Ficin * Column * DTT-treated RBCs * Inhibition with pooled plasma   Extended typing sheets for the panels may have additional information on these antigens. |
| **TSL Policy:** HMC TS policy allows I.S. serologic crossmatch with a history of these antibodies and a negative antibody screen *Note: IS will be required due to SQ control files.* | | | |
| **Clinically Insignificant Antibodies**  **NOTE:** This list is not all-inclusive for insignificant antibodies. Consult with TS Mgr or Medical Director for any that may not be listed. | | | |
| Bga and Bgb  Lea and Leb  P1 and P if not reacting at 37C  I and i  A1 (give O or A2/A2B units)\*\*  M if not reacting at 37C  N if not reacting at 37C  LW  Dib  Chido/Rogers (Ch/Ro)  Scianna  Gerbich  Knops  Cromer  Indian  Ok  Raph  JMH  Gil | | **Antigen typing of donor units not required** | |

\*\* Although naturally occurring anti-A1 is usually not clinically significant; allo-anti-A1 is often clinically significant.