1. **Principle**

Simultaneous forward and reverse grouping, Rh (D) testing and antibody screen test using Hemagluttination and Capture Solid Phase Technology.

Patient plasma and LISS are added to Capture-R Ready Screen (3) strips pre-coated with Reagent red blood cell antigen. After incubation and wash cycle IgG coated indicator cells are added. The strips are then spun and read.

ABO and Rh(D) typing demonstrates the presence of blood group antigens A,B and D by testing the patient red cells with known antisera, In this case monoclonal anti-A, anti-B and anti-D are added to CMT(blank) micro well strips. The serum/plasma is tested with known A1 and B cells. The monoclonal control must be negative for the ABO/Rh (D) results to be valid.

The presence or absence of antibodies can be detected in the micro wells. Agglutination indicates the absence of antigen/antibody reaction while lack of agglutination indicates the presence of antigen/antibody reaction.

1. **Scope and Related Policies**
   1. ABO grouping shall be determined by testing the patient’s red cells with anti-A and anti-B reagents. The Rh type shall be determined by testing the patient’s red cells with monoclonal anti-D reagent. It is recommended that a second anti-D test be performed if the patient does not have a historical D typing on file.
   2. The patient’s plasma shall be tested with A1 and B reagent red cells.
   3. The results of the forward and reverse group testing should agree. All discrepancies must be resolved using alternate methods prior to resulting the testing.
   4. Antibody screening shall be performed at 37°C.
2. **Specimen**
   1. EDTA anticoagulated whole blood drawn within 5 days of testing.
   2. Serum from fully clotted blood that has been centrifuged and separated immediately upon receipt in the laboratory.
   3. Recently transfused or pregnant patient samples should be <4 days old.
   4. Samples that exhibit excessive hemolysis or lipemia or that are icteric should not be tested on the Galileo Echo. Samples that exhibit a hemolysis grade of 3+ or greater must not be tested on the Galileo Echo because they may generate erroneous results.
3. **Material**

Equipment: Immucor Galileo Echo

Supplies: Liquid waste bottle (1)

PBS bottle (1)

Stir balls

Strip holder/trays

Reagent/Sample racks

Reagents: Anti-A series 1

Anti-B series 3

Anti-D series 4

Anti-D series 5

Monoclonal control

Reverse A1 and B cells

Capture LISS

CMT strips

Capture-R ready-Screen (3)

Capture-R Indicator Cells

WB corQC

PHIX buffered saline

1. **Quality Control**

Commercial QC – WB corQC is run daily. Once accepted as valid results, ABO/Rh(D), 3 cell screen, Ready-ID, Extend I and Extend II may be performed throughout the 24 hour control interval.

1. **Procedure**

Refer to “Performing a Run on the Echo”.

1. **Reporting**

Results are viewed and confirmed by the technologist operating the Echo. The Echo technologist shall approve and export the results to the LIS (Cerner). The results are verified in the LIS. The specimens and requisitions are then given to the routine bench technologist to perform any further testing and to do the final check.

1. **Procedural Notes**
   1. For every Group and Screen, the Echo will use one CMT strip and half a Capture-R Ready Screen (3) strips.
   2. Each half Capture-R Ready Screen (3) strip has three screening cells and a positive control. The strip control must pass to validate the test.
   3. Partially used strips cannot be reused
   4. See “Performing a Run on the Echo”
2. **References**
   1. Galileo Echo Operator Manual
   2. SWIM manual