TEST: KIR GENOTYPING

PRINCIPLE:
Natural killer (NK) cells are a subset of lymphocytes that are responsible for killing infected cells via release of cytotoxic granules and the production of cytokines. The activity of NK cells is tightly regulated by the interaction between their surface killer cell immunoglobulin-like receptors (KIR) and Class I HLA alleles expressed on the target cell. KIRs can be either inhibitory or activating and it is the combination of signals that determines the activation state of the NK cell.

The KIR locus contains a family of polymorphic and highly homologous genes and maps to chromosome 19q13.4 within the leukocyte receptor complex. Human NK cells express various combinations of 16 KIR genes with two common haplotypes: Group A, which has more inhibitory receptors and Group B, which has more activating receptors.

Recent studies investigating KIR and HLA class I genotypes and pregnancy outcomes have suggested that specific combinations of maternal KIR genotype and parental HLA-C genotypes are more prevalent in women with recurrent spontaneous abortions.

SPECIMEN REQUIREMENTS:
10mL whole blood collected in lavender top EDTA tubes (two 5ml tubes). Specimen should be delivered to the laboratory within 72 hours at room temperature. Peripheral blood specimens that are clotted, have not been collected in EDTA, or frozen are not acceptable.

METHOD:
Polymerase Chain Reaction (PCR).

REFERENCES:
1. Ntrivalas E et al. (2005) AJRI. 53: 215-221

2. Hong Y et al. (2008) Eur J Obstet Gyn Reprod Biol. 140: 218-223

3. Hiby S et al. (2008) Hum Reprod. 23: 972-976

4. Vilches,C and Parham,P (2002) Ann.Rev.Immunol. 20: 217

5. Marsh, SGE, et al. (2003) Human Immunology 64: 648

Turnaround time: 10 business days