TEST: HLA-C GROUP TYPE

PRINCIPLE:
All HLA-C alleles are classified into two groups (C1 or C2) depending on the amino acid sequence. Alleles of the C1 group have asparagine at position 80, while alleles of the C2 group have lysine. Accordingly there are three possible HLA-C genotypes: C1C1, C1C2 and C2C2. HLA-C1 and HLA-C2 are ligands for different activating or inhibitory KIR (Killer Cell Immunoglobulin-like Receptor) that are expressed by NK cells. Certain KIR and HLA-C genotypes are known to be associated with various infectious and autoimmune diseases [1]. Higher frequency of maternal KIR AA genotype and paternal HLA-C2 has been reported among preeclampsia and recurrent pregnancy loss patients [2]. Moreover, an individual's HLA-C genotype has been reported to influence the functionality of his/her NK cells if certain KIRs are co-expressed [3].

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

METHOD:

Next Generation Sequencing

Turnaround Time: 10 business days

REFERENCES:
1. Parham P. MHC class I molecules and KIRs in human history, health and survival. Nature Reviews Immunology 2005, 5:201.
2. Hiby S. et al. Combinations of maternal KIR and fetal HLA-C genes influence the risk of preeclampsia and reproductive success. J Exp Med 2004, 200:987.
3. Fauriat C. et al. Education of human natural killer cells by activating killer cell immunoglobulin-like receptors. Blood 2010, 115:1166.