Effective August 7, 2012, the Lamellar Body Count (LBC) will replace the Abbott FLM II test. The Abbott FLM II test is no longer being manufactured.

Lamellar bodies represent the storage form of pulmonary surfactant. Surfactant is produced by Type II pneumocytes and is excreted from the fetal lung into the amniotic fluid as early as 32 weeks of gestation. Surfactant levels increase as the lungs mature forming a phospholipid monolayer over the alveoli that decreases surface tension and therefore keeps the lungs from collapsing completely with expiration. Failure to produce sufficient surfactant results in neonatal respiratory distress syndrome (RDS). This is a leading cause of morbidity and mortality in newborns, especially those born prematurely. The counting of lamellar bodies in amniotic fluid is a reflection of the amount of surfactant being produced by the fetus and is used to predict fetal lung maturity and assess the risk of development of neonatal RDS. Lamellar bodies are similar in size to platelets (2 -10 fL) and can be accurately quantified on a hematology analyzer using the platelet channel.

### Specimen Collection Criteria

| Specimen Collection Criteria | A minimum of 7 mL of amniotic fluid collected by transabdominal amniocentesis is preferred. Vaginal pool specimens should be avoided when possible. |

### Specimen Preparation for Courier Transport

#### Inpatient:

The specimen should be transferred to the laboratory immediately after collection in a sterile container.

#### Outpatient:

If it cannot be transported immediately, then refrigerate, call for a STAT pick-up and transport to the laboratory within 4 hours of collection.

**DO NOT CENTRIFUGE. DO NOT FREEZE.**

### Rejection Criteria

Grossly bloody specimens (that is specimens having more than 1% v/v of blood), meconium-stained (green-colored) specimens, specimens containing obvious mucus or contaminated specimens will not be tested. Frozen or centrifuged specimens will not be tested for LBC.

### Performed

Monday-Sunday. Specimen must be received in the Special Testing Laboratory before noon Monday-Friday for LSPG testing to be performed the same day.

### Reference Range

Anmiotic Fluid Lamellar Body Count (LBC):

- LBC > 55,000/mcL is predictive of fetal lung maturity
- LBC ≤ 55,000/mcL is suggestive of fetal lung immaturity.

### Interpretation

An immature LBC is not reliable in predicting fetal lung immaturity. Therefore, all LBC results less than 55,000/mcL will be tested for a lecithin:sphingomyelin ratio and phosphatidyl glycerol (L/S-PG).

100 percent of specimens (N=195) with a LBC > 55,000/mcL had an L/S > 2.0 (mature). Specimens with a LBC of ≥ 55,000/mcL will NOT be analyzed for L/S-PG.

### Date Submitted

July 24, 2012

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