Yale University School of Medicine
Reproductive and Placental Research Unit
Department of Obstetrics and Gynecology
15 York Street, LCI 803
New Haven, Connecticut 06510 &
161 Ford Road, Woodbridge, CT 06525
203 785-3854
203 785-7642 (lab), 203 737-4397 (fax)
http://klimanlabs.yale.edu
harvey.kliman@yale.edu

Harvey J. Kliman, M.D., Ph.D.
CLIA #s 07D1029962/07D1062397; State of Connecticut Laboratory #s CL-0641/0653

9/8/2015

Via email and First Class Mail

XX

XX

XX

Re: XX, Bx#: XX

Dear Dr. XX,

We have completed our Endometrial Function Test® (EFT®) analysis of your patient's natural cycle biopsy that you performed on **8/20/2015** and that we received on **8/24/2015**. Our EFT results are as follows:

Clinical BT: Clinical Date: **23** Cycle day by LH surge (d13): **23** Cycle day by P (1st full day = d14):

Histologic Dating

Overall (stromal) Date: **24.5** (normal is within 2 days of cycle day)
Gland Date: (dating of dyssynchronous glands, if present)
% Glands at Date: (upper limit of normal is < 30% dyssynchronous glands)

Dating comments:
Apoptotic figures: None identified. **Mitotic figures:** None identified.

Patient's age: 35 Patient's BMI: 21 Gest Hx: G6 P1 SAB1 Bchm3 Prem0 Ect1 ART Hx: IVF FET IUI Don

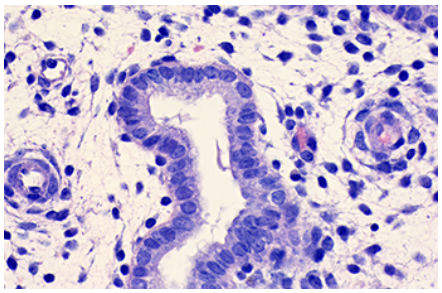
Endometrial Function Test® (EFT®) Panel

1° Antibody	Result	% Glands MAG Positive	Gland Cytoplasm	Gland Nuclei	Comment
CycE	pos		50	70	**Extremely increased for histologic dating.**

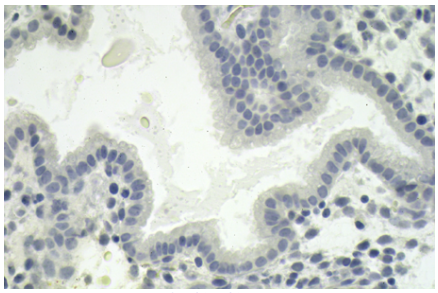
Please note that as of May 1, 2004 our upper limit of normal for nuclear cyclin E in luteal biopsies has been increased from 10% to 20%, which was established by ROC analysis of fertile normal controls compared to biopsies from infertile women. See the following chart for our current grading system:

Luteal nuclear cyclin E ² 20%	Normal	Luteal nuclear cyclin E = 30%	Mild GDA
Luteal nuclear cyclin E = 40%	Moderate GDA	Luteal nuclear cyclin E = 50%	Marked GDA
Luteal nuclear cyclin E >50%	Extreme GDA	Luteal cytoplasmic cyclin E is not relevant for grading	

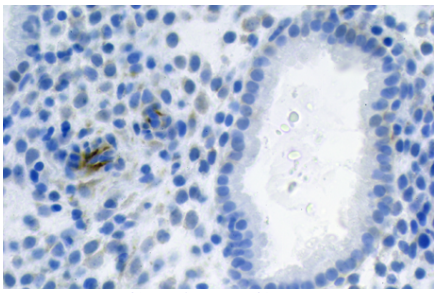
Control and Patient Photomicrographs



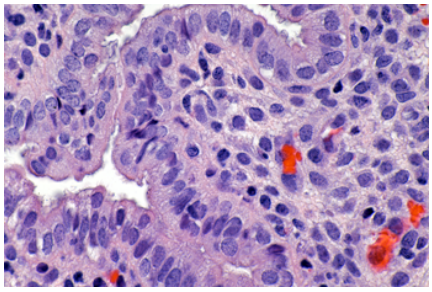
HE Control



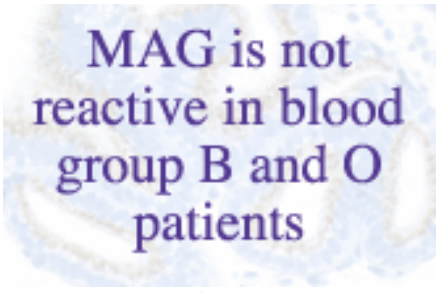
MAG Control



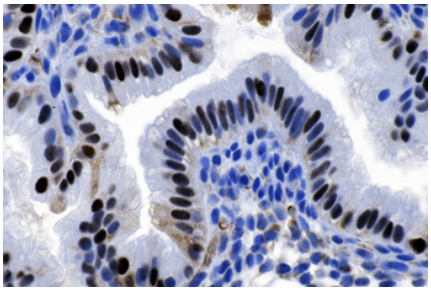
Cyclin E Control



Patient's HE



Patient's MAG *or Other Image*



Patient's Cyclin E

The top row of images are cycle day specific controls for standard HE staining (left), MAG reactivity (center) and cyclin E (right). The bottom row of images are from our studies of your patient. Representative areas have been chosen and may not reflect all aspects of our findings. Please note that patients who are not blood group A or AB will not have a MAG image in the above results. If warranted, other images—which will be described below—may be found in the middle bottom row. Please refer to the table on the first page, as well as the narrative comments below, for our interpretation of these results.

Interpretation

Histologically this biopsy is very close to the cycle day as determined by LH surge day stated on the EFT request form. There is no evidence of glandular-stromal dyssynchrony.

However, nuclear cyclin E is extremely elevated, indicating a clinically extreme degree of glandular developmental arrest (GDA).

GDA represents a failure of the endometrial glands to develop in parallel with the endometrial stroma (F&S 1997;S96-S97). GDA is seen in cases of either too low or high BMI, endometriosis, hydrosalpinx, endometritis, perimenopause and/or stress (F&S 2005;83:1745-52).

In addition to implantation failure, GDA has been associated with recurrent early pregnancy loss (especially 4 -6w losses), possibly related to the endometrium's role in supplying critical factors to the developing embryo (F&S 2009;92:S244-5).

This test was developed and its performance characteristics determined by the Reproductive and Placental Research Unit, Yale University. It has not been cleared or approved by the U.S. Food and Drug Administration. Please note that the FDA does not require tests such as the EFT® to be cleared or approved.

Sincerely,

Harvey Kliman, M.D., Ph.D.