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# BILL DENTON TECHNICAL

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## MEMORANDUM

### HUMAN CHORIONIC GONADOTROPIN (HCG)

Starting March 1<sup>st</sup> 2017, new orders will become available for Human chorionic gonadotropin (HCG) replacing the current order:

### Beta-HCG Quantitative – Pregnancy Beta-HCG Quantitative – Tumor Marker

The assay for both orders is identical, but the separation of orders is needed to correctly apply reference ranges and interpretative comments.

#### Beta-HCG Quantitative – Pregnancy

Human chorionic gonadotropin (HCG) is produced by the placenta after implantation.

| Weeks of gestation | HCG mIU/mL |                               |
|--------------------|------------|-------------------------------|
|                    | Median     | 5-95 <sup>th</sup> percentile |
| 3                  | 17.5       | 5.8-71.2                      |
| 4                  | 141        | 9.5-750                       |
| 5                  | 1398       | 217-7138                      |
| 6                  | 3339       | 158-31795                     |
| 7                  | 39759      | 3697-163563                   |
| 8                  | 90084      | 32065-149571                  |
| 9                  | 106257     | 63803-151410                  |
| 10                 | 85172      | 46509-186977                  |
| 12                 | 66676      | 27832-210612                  |
| 14                 | 34440      | 13950-62530                   |
| 15                 | 28962      | 12039-70971                   |
| 16                 | 23930      | 9040-56451                    |
| 17                 | 20860      | 8175-55868                    |
| 18                 | 19817      | 8099-58176                    |

#### Reference range:

- 0 - 5 mIU/mL: Negative
- 6 - 10 mIU/mL: Equivocal
- Greater than 10 mIU/mL: Positive

#### Interpretative data:

- Please interpret the results in a clinical context.
- Repeating test within 2-3 days may be of value and provide a more definitive answer.

## **Beta-HCG Quantitative – Tumor Marker**

Human chorionic gonadotropin (HCG) is used in the management of patients with trophoblastic disease, and some types of germ cell tumors. In men and in non-pregnant women, the HCG level is normally undetectable. Increased serum hCG concentrations have also been observed in melanoma, carcinomas of the breast, gastrointestinal tract, lung, and ovaries, and in benign conditions, including cirrhosis, duodenal ulcer, and inflammatory bowel disease. The result cannot be interpreted as absolute evidence of the presence or absence of malignant disease.

### **Reference range:**

Male: 0-3 mIU/ML

Female: 0-5 mIU/mL

### **COMMENT:**

Healthy non-pregnant peri-menopausal and post-menopausal females may have HCG values up to 8 mIU/mL.

### **Interpretative data:**

Human chorionic gonadotropin (hCG) is a valuable aid in the management of patients with trophoblastic tumors, nonseminomatous testicular tumors, and seminomas when used in conjunction with information available from the clinical evaluation and other diagnostic procedures. Increased serum hCG concentrations have also been observed in melanoma, carcinomas of the breast, gastrointestinal tract, lung, and ovaries, and in benign conditions, including cirrhosis, duodenal ulcer, and inflammatory bowel disease. This result cannot be interpreted as absolute evidence of the presence or absence of malignant disease. This result is not interpretable as a tumor marker in pregnant females. The combination of the specific monoclonal antibodies used in the Roche Beta HCG electrochemiluminescent immunoassay recognize the holo-hormone, "nicked" forms of hCG, the beta-core fragment, and the free beta-subunit. Results obtained with different test methods or kits cannot be used interchangeably. Although this assay is FDA cleared for use in the detection of pregnancy, it is not labeled for use as a tumor marker.

Please direct any questions to Dr. George Bedrnicek – (402) 955-5528 or Dr. Deborah Perry – (402) 354-4559 at the Methodist Hospital Pathology Center.