Beta HCG (beta human chorionic gonadotropin)

General:

HCG can be divided into two inactive, covalently bound subunits, which are de-scribed as α− and β-chain. The alpha−subunit is identical to alpha subunits of FSH, LH and TSH and can lead to cross reactions if the test specific-ity is low. β-HCG is secreted in the syncytiotrophoblast and stimulates, via receptors, the progesterone formation in the corpus luteum graviditatis from the implantation time until the 8th week of pregnancy, when the syncyti-otrophoblast takes over the function of the corpus luteum.

β-HCG reaches values of > 10 U/l in serum and/or in urine of > 20 U/l approx. 10-12 days after conception (LH-peak, ovulation). This is also valid for *in vitro* fertilizations. Duplication of beta-HCG values are observed every 2 days, a maximum increase is observed between the 9th and 11th week, the maximum at the end of the first trimester, then a gradual decrease is seen in the further course. After birth β-HCG values decrease rapidly and are no longer detectable after 11-17 days.

The β-subunit of human chorionic gonadotropin is secreted by some cancers including choriocarcinoma, germ cell tumors, hydatidiform mole formation, teratoma with elements of choriocarcinoma (this is rare), and islet cell tumors. For this reason a positive result in males can be a test for testicular cancer.

The following tests are available:

- **beta-HCG in serum**

Indication: Pregnancy confirmation, suspicion of germ cell tumor, monitoring after abortion.
Material: 1 ml serum
Stability: 3 days at 2 to 8°C
TAT: same day, FML
Method: ECLIA
Units: mIU/ml
Ref.- range: see report
Note: Test is positive approximate 10-12 Days after conception.

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^ non-accredited parameter
*performed in a collaborating laboratory (Germany)

- **beta-HCG, free**

see **Down Syndrome, First Trimester Screening**

Indication: Risk marker in First Trimester Screening
Material: 1 ml serum
Stability: 8 days at 2 to 8°C
TAT: 3 days, FML
Method: ECLIA
Units: MoM

- **beta-HCG, tumor marker (in serum)**

Indication: Suspicion of germinal cell tumors (testes, placenta, ovary, extragonadal), course control, therapy monitoring.
Stability: 3 days at 2 to 8°C
Material: 1 ml serum
TAT: same day, FML
Method: ECLIA
Units: mIU/ml
Ref.- range: < 2.0

- **beta-HCG, tumor marker (in puncture)**

Material: 1 ml aspirate
TAT: 7 - 10 days*
Method: LIA
Ref.- range: see report

For complete list of laboratory test offered at Freiburg Medical Laboratory, please visit http://www.fml-dubai.com/parameter-listings/

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