Invasive Trophoblast Antigen (ITA) in Human Pregnancy Charles M. Strom, M.D., Ph.D. and Raj Pandian, Ph.D.

Invasive trophoblast antigen (ITA), a 39-40 kd glycoprotein, is a hyperglycosylated form of hCG. ITA is detectable earlier in pregnancy than hCG and may be able to differentiate between successful and failed pregnancies as early as 7 days after in vitro fertilization. In addition, serum and urine ITA is elevated in Down syndrome pregnancies relative to unaffected pregnancies. Data from prospective and case control studies consistently demonstrate that ITA is a powerful prenatal screening marker in both the first and second trimesters. In the first trimester, the performance of ITA is equivalent to the performance of free beta hCG and can be used with PAPP-A and nuchal translucency. In the second trimester, addition of serum ITA to serum measurements of alpha-fetoprotein, hCG, unconjugated estriol, and dimeric inhibin A increases the detection rate and is expected to decrease the false-positive rate in maternal serum screening programs.