



LEVEL AND NATURE OF mRNA
ENCODING α AND β SUBUNITS OF HUMAN
CHORIONIC GONADOTROPIN IN NORMAL AND MOLAR
PREGNANCIES

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ABSTRACT

The patient with tumor placenta, hydatidiform mole always has markedly higher immunoreactive HCG in maternal fluid than the normal level found in first trimester of normal pregnancy. To understand the molecular basis underlying the excessive elevation of HCG in hydatidiform mole, the level of α - and β - mRNA in mole placenta was measured in comparison with normal early and term placentae. The level of α - or β - mRNA was measured in term of relative α - or β - mRNA content per same amount of DNA by dot blot hybridization of filter bound RNA the labelled specific cDNA probe. The level of either α - and β - mRNA was in the same range with those in normal placenta at 12 weeks of gestation. The result strongly suggests that the excessive elevation of HCG in maternal fluid of the patient with hydatidiform mole is not the result of the increase of their specific mRNA.

Besides the level of α - and β - mRNA, the molecular species and molecular size of α - and β - mRNA was measured by RNA blot hybridization. Only one species of either α - or β - mRNA was detected in normal and mole placentae, the molecular size of α - and β - mRNA was 0.90 and 1.25 kb, respectively. Moreover, the ratio of α - mRNA/ β -mRNA was determined by two different nucleic acid hybridization techniques. The results obtained from these two techniques were the same :the ratios in early and mole placentae were equal (about 2) but higher than that in term placenta (about 1.6).

All the results from comparative studies of α - and β - mRNA level, molecular size and molecular species of α - or β - mRNA and the ratio of α - mRNA/ β - mRNA in normal and mole placentae indicate that transcription and post-transcriptional processing are unlikely to be the major site of control of excessive HCG production in hydatidiform mole.

