Global analysis of differentially expressed genes in early gestational decidua and chorionic villi using a 9600 human cDNA microarray

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摘要

Abstract

The global gene expression profiles of the decidua and chorionic villi of early human pregnancies were analysed by using cDNA microarray technology. Decidual and villous placental tissues were obtained from first trimester abortus and mRNA was extracted for cDNA microarray analysis. The human cDNA microarray [9600 clones, including known regulatory genes and expressed sequence tags (EST)] with colorimetric detection was used to identify differentially expressed genes between early gestational decidua and villi. According to cDNA microarray analysis, we have identified 641 genes with highly expressed mRNA in both decidua and villi, 49 genes with higher expressions in decidua, and 75 genes with higher expression in chorionic villi. These differentially expressed genes were further grouped into categories by their putative functions, including: cell growth-related factors, hormones/cytokines, cell adhesion molecules, signal transduction molecules, apoptosis-related factors, cytoskeleton/extracellular matrix proteins, and EST. Immunohistochemical stainings of cathepsin L, leukaemia inhibitory factor-receptor, and proliferative cell nuclear antigen showed results consistent with the microarray data. Identification of the differentially expressed genes between decidua and villi by microarray provide a global profiling of the gene expression pattern. This work adds to our understanding of placentation by reporting the gene expression profiles during first trimester human pregnancies using cDNA microarray.