

**Dose-dependent effects of gonadotropin  
releasing hormone on matrix  
metalloproteinase (MMP)-2, and MMP-9 and  
tissue specific inhibitor of  
metalloproteinases-1 messenger ribonucleic  
acid levels in human decidual Stromal cells in  
vitro.**

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摘要

**Abstract**

Matrix metalloproteinases (MMPs) and their endogenous inhibitors, tissue-specific inhibitor of matrix metalloproteinases (TIMPs), play key roles in the cyclic remodeling events that occur in the human endometrium in preparation for pregnancy. To date, the factors capable of regulating the expression of MMPs and TIMPs in the human decidua remain poorly characterized. The spatiotemporal expression of GnRH in the human endometrium during the menstrual cycle and early pregnancy suggests that this hormone may have a regulatory role in the development of this dynamic tissue. In view of these observations, we have examined the ability of GnRH to regulate MMP-2, MMP-9, and TIMP-1 mRNA levels in primary cultures of human decidual stromal cells using a quantitative competitive PCR strategy. GnRH was capable of increasing MMP-2 and MMP-9 mRNA levels in these primary cell cultures in a dose-dependent manner. The GnRH antagonist, antide, was capable of inhibiting the GnRH-mediated increase in the levels of the MMP-2 and MMP-9 mRNA transcripts present in these decidual stromal cells in a dose-dependent manner. In contrast, GnRH or antide did not have a significant effect on TIMP-1 mRNA level in these primary cell cultures at any of the concentrations used in these studies. Taken together, these observations

suggest that GnRH plays an integral role in human implantation, by virtue of its ability to regulate the balance between MMP and TIMP expression in decidual cells.

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