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Poster Sessions

Possible roles of autophagy related proteins ATG2A and ATG7 in the differentiation of human endometrial stromal cells

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Human endometrial stromal cells (ESCs) differentiate into secretory decidual cells (decidualization) to ensure the embryo implantation and subsequent preparation of a proper fetomaternal interface for placental formation. Recently, the potential involvement of autophagy-related genes including ATG genes in normal organ development and metabolic function has been reported. We have previously found that ATG2A and ATG7 expression in decidua was decreased in ectopic pregnant women, but the contribution of these genes in endometrial decidualization remains unclear. In this study, we determined whether the autophagy-related genes are involved in decidualization of ESCs. Immunohistochemical analysis revealed that ATG2A and ATG7 are expressed in endometrial stromal and epithelial cells during the proliferative and secretory phases. The expression of ATG2A and ATG7 was downregulated during the process of progesterone (P4) and dibutyryl (db)-cAMP-induced decidualization in primary cultured ESCs. Furthermore, siRNA-mediated ATG2A or ATG7 knockdown repressed the P4/db-cAMP-induced decidual markers *prolactin* and *IGFBP1* expression. These data indicate the association of ATG2A and ATG7 with decidualization of ESCs. Thus, autophagy process may be critical for the cyclical function of human endometrium and the establishment of pregnancy, suggesting that autophagy impairment could lead to implantation failure and miscarriage.