P-35 Expression of Sall1 mRNA and Protein in Endometrial Tissues of Patients with Endometriosis

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Objectives: Endometriosis is characterized by the growth of ectopic endometrial tissue mainly on pelvic organs and peritoneum. The primary cause of endometriosis is retrograde menstruation and then, menstrual debris into the peritoneal cavity enabling endometrial stem cells to adhere to the peritoneal lining and proliferation to form endometriotic lesions which cause inflammation, pain and even infertility. Sall1 is the region specific homeotic gene and encode a protein that contains 3 distinct DNA-binding zinc finger domains and alanine- and glutamine-rich domains that are commonly found in transcription factors. Recently several papers demonstrate the hypothesis that endometrial stem cells are inappropriately shed during menstruation, which adhere to peritoneum and lead to endometriotic lesions. We experimented on target genes screening of mRNA and protein level in endometriotic tissues of patients in because of unknown endomitriosis mechanism. Consequently, we found the strong expression of Sall1 gene, transcription repressor, in several expressed genes.

Methods: We selected several candidate genes which were expected to involve endometriosis pathology in our high-throughput gene expression screening database of human stem cell lines by semi-quantitative RT-PCR. Between December 2004 and November 2005, 22 patients, classified into two groups according to presence (endometriosis group, n=10) or absence of endometriosis (normal group, n=12), were evaluated. And expression profiles of these selected genes were analyzed in normal group or human endometriosis using real-time RT-PCR and western blotting.

Results: The expressions of Sall1 mRNA and protein were significantly higher in endometrial tissues of women with endometriosis than in normal endometrial tissues. The expression level of Sall1 mRNA in mid-secretory or proliferative phase was not different in each other and there was no statistical significance.

Conclusion: With marked expressions of Sall1 in endometrial tissues of endometriosis, we suppose that Sall1 is associated with the development of endometriosis. Therefore further studies on the Sall1 of cellular and molecular mechanisms in endometriosis will be carried out, we suggest that Sall1 can be used for the diagnostic marker and therapeutic applications.