1. Introduction
Endometriosis is characterized histologically by the presence of endometrial glands with surrounding stromal cells outside the uterus. However, in very few cases also pure stromal endometriotic foci have been reported. Recently, it was hypothesized that the stromal component of endometriotic foci is different in peritoneal, ovarian or deep infiltrating endometriosis and thus might be causative for the different entities of endometriosis. Thus, we aimed to characterize the stromal compartment in normal endometrium and endometriosis.

2. Methods
The prospective study has been approved by the local ethics committee and informed consent was obtained from the patients. Tissue obtained from patients (peritoneal, ovarian and deep infiltrating endometriosis) undergoing laparoscopy was fixed with Bouin’s solution and paraffin-embedded. After deparaffination immunohistochemistry was performed with the Envision system.

3. Results
We found mainly fibroblasts, fibrocytes and mesenchymal cells containing mesenchymal stem cells in the normal endometrium. Whereas fibroblasts and fibrocytes were mainly localized in the functionalis, the mesenchymal cells could be identified mainly in the basalis. Smooth muscle cells and myofibroblasts were mainly found in the myometrium, however, in few cases myofibroblasts could be identified adjacent to endometrial glands from healthy and endometriosis patients. In most endometriotic foci no myofibroblasts were found. However, myofibroblasts were found adjacent to the ectopic endometriotic glands. Of note, we could identify only mesenchymal cells directly surrounding the endometriotic glands.

4. Conclusions
Whereas in the ectopic stroma a great variety of stromal cells could be identified, the eutopic stroma seems to contain nearly exclusively mesenchymal cells containing stem cells.