INTRODUCTION: Endometriosis (EDT) is a chronic inflammatory disease characterized by the presence of endometriotic tissue outside the uterine cavity. EDT can be classified into three different diseases - superficial (SPF), endometrioma (EOMA) and deep endometriosis (DE). Immune factors evaluated in the endometrium and peritoneal microenvironment have been found to be altered in women with EDT. The immune tolerant protein HLA-G has been detected in tumors and auto-immune diseases, suggesting a possible involvement also in EDT. The aim of this study was to evaluate the HLA-G gene transcript and the protein expression in endometrial and DE tissue biopsies in comparison to endometrial tissue of women without the disease. Patients and Methods: A fraction of endometrial biopsies and excised endometriotic (rectosigmoid or retrocervical) lesions from 26 women with endometriosis and endometrial biopsies from 22 women of control group were used for Immunohistochemistry analysis. Another fractions of endometrium corresponding to 21 control women and 24 women with rectosigmoid endometriosis were used for mRNA assessment by RT-qPCR. Results: A differential expression of HLA-G protein was found in DE lesions compared to endometrial tissue of control women (p=0.037), especially in advanced stages of disease (p=0.017), even though the mRNA expression has been significantly lower in endometrium of EDT patients (p<0.005). Conclusions: HLA-G expression is induced in the peritoneal microenvironment of deep endometriosis, probably contributing to the local immune suppression.