

# IDENTIFICATION OF NEW DIGITAL ASSISTED METHOD OF QUANTIFICATION FOR BCL6 ENDOMETRIAL EXPRESSION IN WOMEN WITH ENDOMETRIOSIS

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## **Abstract Body**

BCL6 (B-cell lymphoma 6) is a proto-oncogene and transcriptional repressor initially described to be involved in B-cell lymphoma. Recently this factor has been identified as a promising tissular biomarker which could be used to diagnose women affected by endometriosis, even though the pathophysiological mechanisms are still not completely understood. All the previous studies describing BCL6 expression in endometrium of women with or without proven endometriosis used HSCORE for the quantification of BCL6 staining. The score is calculated by a semi-quantitative assessment of both the intensity of staining and the percentage of positive epithelial glandular cells. However, this semi-quantitative technique of analysis has some limitations, including a lack of objectivity, robustness and reproducibility that may lead to intra- and inter-observer variability. Our main goal was to develop an original computer assisted method to quantify BCL6 staining from whole-slide images most reliably. In order to test the efficiency of our new digital method of quantification, we compared endometrial BCL6 expression immunohistochemically between fertile or infertile women without or with different stage of endometriosis (patients recruited in the gynecology-obstetrics department of the University of Liège and the Center for Medically Assisted Procreation of Citadelle Hospital) by using the widely used HSCORE analysis and our new automatic digital image analysis. We find a higher expression of BCL6 in endometrium of infertile women with endometriosis and women with stage IV endometriosis. Furthermore, we demonstrate a significant correlation between the two types of independent measurements, indicating the robustness of results and also the reliability of our new computer assisted method for BCL6 quantification.