

# Nuclear factor-kappaB: A main regulator of inflammation and cell survival in endometriosis pathophysiology

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**Objective:** To update, analyze, and summarize the literature concerning nuclear factor-kappaB (NF- $\kappa$ B) participation in endometriosis pathophysiology. **Design:** Review. **Result(s):** Nuclear factor-kappaB is physiologically activated in the human endometrium, showing variable activity. A cyclic p65-DNA binding pattern was shown in the endometrium of healthy women. This cyclic pattern was altered in the endometrium of patients with endometriosis. Nuclear factor-kappaB is basally activated in peritoneal endometriotic lesions, showing higher p65 activity in red endometriotic lesions than in black lesions. In vivo and in vitro studies show up-regulation of inflammation and cell proliferation and down-regulation of apoptosis by NF- $\kappa$ B activity. Iron overload has been shown in the pelvic cavity of endometriosis patients, and iron overload and oxidative stress activate NF- $\kappa$ B in macrophages, which have been shown to participate in the endometriosis-associated inflammatory reaction. **Conclusion(s):** Nucl