

Abstract

Purpose: The present work aimed to explore the aberrant expression of APEX1 in endometrial stromal cells (ESC) and the underlying mechanisms.

Methods: The levels of APEX1 and miR-24 in endometriosis tissues were tested by qRT-PCR and Western blot. After cell transfection, cells were correspondingly classified into pcDNA3.1-NC, sh-NC, mimic NC, inhibitor NC, pcDNA3.1-APEX1, sh-APEX1, miR-24 mimic, miR-24 inhibitor, sh-NC + inhibitor NC, inhibitor-NC + sh-APEX1, sh-NC + miR-24 inhibitor, pcDNA3.1-NC + mimic NC, mimic NC + pcDNA3.1-APEX1 and pcDNA3.1-NC + miR-24 mimic group. Besides, cell proliferation, apoptosis in addition to apoptosis-related proteins Bax, Bcl-2 and cleaved-casase-3 were analyzed by BrdU assay, flow cytometry (FCM) and Western blot assays, respectively. Additionally, RIP assay was conducted to determine the interaction between pri-miR-24 and miR-24.

Results: APEX1 and miR-24 were highly expressed in endometriosis tissues. Overexpression of APEX1 and miR-24 potentiates ESC proliferation and inhibits apoptosis, while those effects could be reversed by APEX1 and miR-24 silencing. Meanwhile, APEX1 and miR-24 could elevate ESC apoptosis-related proteins Bax and cleaved-caspase-3 and decrease Bcl-2 expression. Importantly, APEX1 was positively correlated with miR-24 expression.

Conclusion: APEX1 promotes ESC proliferation and inhibits apoptosis by upregulating miR-24 expression.