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## Knockdown of COUP-TFII enhances cell proliferation, migration, invasion, and colony formation in human colorectal cancer HT-29 cells

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Recently, many investigators have studied the role of the chicken ovalbumin upstream promoter-transcription factor II (COUP-TFII) in several cancers including prostate cancers. Our previous study demonstrated that COUP-TFII might be a good prognosis factor in patients with colorectal cancer. However, its underlying mechanisms are unknown. In this study, to investigate whether COUP-TFII affects cell proliferation, migration, invasion, and colony forming ability of human colorectal cancer cells (HT-29 cells), we established stable COUP-TFII-shRNA knocked down HT-29 cells (COUP-TFII shRNA-HT-29 cells). We confirmed COUP-TFII knockdown by western blot analysis and examined the effect of COUP-TFII knockdown on the cell proliferation, migration, invasion, and colony forming ability. Our results showed that cell proliferation, migration, invasion and colony forming ability was significantly inhibited in COUP-TFII-shRNA-HT-29 cells. To evaluate its underlying mechanisms, we examined the expression of several proteins related with cell proliferation, N-cadherin, and E-cadherin by western blot analysis. Expression of p-Rb, cyclin D1, and N-cadherin were increased, however, p53, PTEN, and E-cadherin were decreased in COUP-TFII-shRNA-HT-29 cells. Increased expression of p-Rb and cyclin D1 may contribute to enhanced cell proliferation in COUP-TFII-shRNA-HT-29 cells. Increased expression of N-cadherin and decreased expression of E-cadherin might contribute to increased cell migration. These results suggest that COUP-TFII might act as a negative regulator in cell proliferation, migration, invasion, and colony formation in HT-29 cells. Further studies using different several colorectal cancer cells are needed to verify these findings. This study was supported by the Basic Science Research Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Science, ICT & Future Planning (2017R1A2B4011428, 2016R1C1B2007429).

### Biography

Yun has studied the antitumor action mechanisms of marine triterpene glycosides and the role of COUP-TFII in cancer for 7 years. He is a member of KSBMB (Korean Society of Biochemistry and Molecular Biology).

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