

August 13-14, 2018

Madrid, Spain

Manal Elmasry et al., Arch Clin Microbiol 2018, Volume 9
DOI: 10.4172/1989-8436-C4-015

RBP7 PROMOTES MALIGNANT PROGRESSION AND CORRELATES WITH POOR PROGNOSIS IN COLORECTAL CANCER

Manal Elmasry, Eva Marina Schmidt, Andreas Jung, Thomas Kirchner and David Horst

Ludwig Maximilian University of Munich, Germany

Background & Aim: Colorectal cancer (CRC) is a common human malignancy worldwide. RBP7 is a member of the cellular retinol-binding protein (CRBP) family, required for vitamin A stability and metabolism. Some CRBP members are linked to tumor progression in cancer. However, its clinical significance and biological role in CRC remain unclear. This study aimed to investigate correlation between RBP7 expression in CRC patients and prognosis and to determine its function in CRC cells.

Materials & Methods: Firstly we analyzed RBP7 expression by immunohistochemistry in a retrospective cohort of 219 CRC patients. Then, we applied a quantitative scoring approach using QuPath image analysis software for digital immune scoring. Furthermore, functional analysis was done by establishing RBP7 overexpression and studying its effects on migration and invasion of colon cancer cell lines HCT116 and SW1222 by Transwell assays.

Results: In the retrospective analysis, Kaplan-Meier statistics revealed that patients with high RBP7 expression had a significantly worse cancer specific survival ($p=0.003$). Furthermore, multivariate analyses suggested that RBP7 expression is a significant independent prognostic factor affecting cancer specific survival ($p=0.009$) with a high relative risk ($HR=2.7$). Moreover, RBP7 overexpression increases migration and invasion of colon cancer cells. Lastly, RBP7 expression strongly indicated poor survival in TCGA data ($p=0.00007$) and Gene set enrichment analyses (GSEA) revealed that RBP7 is highly linked to epithelial mesenchymal transition (EMT) in CRC.

Conclusion: Our study highlighted a novel insight into the clinical significance of RBP7 expression in CRC patients and suggested its potential link to EMT functionally.

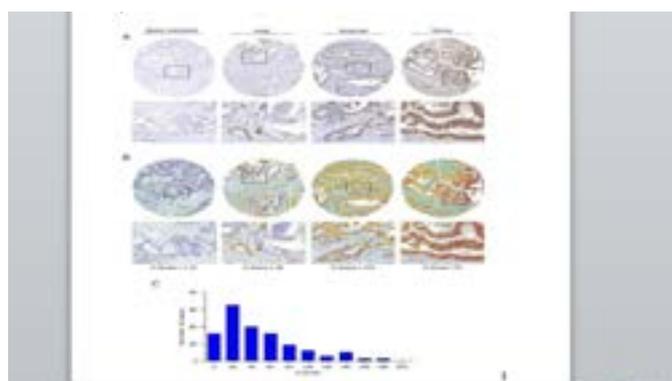


Figure 1: A) Immunohistochemical staining for RBP7 in colon cancer. Representative tissue microarray cores of colon adenocarcinoma show barely detectable, weak, moderate or strong expression of RBP7, respectively. **B)** Digital immunoscore using QuPath image analysis software. Detected cells are color-coded according to their classification: green, non-tumor; blue, negatively staining tumor; yellow, weakly staining tumor; orange, moderately staining tumor; red, strongly staining tumor. Representative tissue microarray cores are arranged from low to high H scores. **C)** Histogram showing the distribution of H-score in CRC patients' cohort.

Biography

Manal Elmasry is a PhD student at Pathological Institute-Ludwig Maximilian University of Munich, Germany. She is an Assistant Lecturer of Pathology in Pathology Department, Faculty of Medicine at Mansoura University, Egypt. She has a scholarship from German Academic Exchange Service (DAAD) to get a Doctoral degree in Pathology from Germany.

Manal.Elmasry@med.uni-muenchen.de