

## The Potential Role of miR-126 as a Prognostic Biomarker in Renal Cell Carcinoma

Jessica Carlsson<sup>1\*</sup>, Jesper Christiansen<sup>2</sup>, Sabina Davidsson<sup>1</sup>, Francesca Giunchi<sup>3</sup>, Michelangelo Fiorentino<sup>3</sup> and Pernilla Sundqvist<sup>1</sup>

<sup>1</sup>Department of Urology, Faculty of Medicine and Health, Örebro University, Sweden

<sup>2</sup>Faculty of Medicine and Health, Örebro University, Sweden

<sup>3</sup>Department of Pathology, F. Addari Institute of Oncology, S. Orsola Hospital, Italy

**R**enal cell carcinoma (RCC) is the most common renal tumor, consisting of ~3% of all malignancies worldwide. The prognosis of RCC can vary widely, and detecting patients at risk for recurrence at an early stage could improve the outcome for the patient. The factors used in the clinics today cannot reliably predict the natural history of the disease, thus there is a need for finding new biomarkers that can aid in predicting patient outcome. Several studies indicate that miRNAs are potential candidates as prognostic biomarkers for patients suffering from RCC. The aim of this study was to validate the potential of miR-126 to predict prognosis in a Swedish cohort of RCC patients.

**Methods:** The expression of miR-126 was measured using quantitative PCR (qPCR) in formalin-fixed paraffin-embedded (FFPE) tumor tissue from 116 patients diagnosed with RCC between 1987 and 2010.

**Results:** miR-126 was found to be differentially expressed between malignant and adjacent benign tissue. The expression of miR-126 was also differentially expressed between tumor grades, and stages of RCC. We could furthermore show that in a univariate model, a low expression of miR-126 was associated with shorter time to recurrence of the disease. **Conclusion:** Our results indicate that miR-126 expression has a potential to be used as a prognostic biomarker for patients suffering from RCC. However, further studies are needed in order to confirm these results.

### Biography:

Jessica Carlsson is a researcher working in the Department of Urology at Örebro University Hospital in Sweden. Jessica completed her Ph.D. in 2012, with the focus of microRNA expression in prostate cancer. Her primary area of expertise is molecular studies in urological cancers, and she currently focuses on the role of inflammation and immunity in cancer development and progression.