Researchers identify proteins that indicate which kidney tumors are most likely to spread

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Researchers at St. Michael's hospital have identified 29 proteins that are likely to be involved in the spread of kidney cancer. The discovery will help physicians recognize which tumours are going to behave more aggressively and provide those patients with more intensive treatment and closer followup.

"Metastatic renal cell carcinoma is one of the most treatment-resistant malignancies and patients have dismal prognosis," said Dr. George M Yousef, a laboratory pathologist. "Identification of markers that can predict the potential of metastases will have a great impact on improvement patient outcomes.

Dr. Yousef's research appears online in the journal *Molecular & Cellular Proteomics*.

Kidney cancer in general is very aggressive and has a high chance of metastasis, or spreading to other organs. The five-year survival rate for metastasized kidney cancer is less than 10 per cent. Although imaging technology has led to increased detection of kidney tumours, 25 to 30 per cent have already spread by the time they are found.

Using a mass spectrometer, Dr. Yousef identified 29 proteins that change when cancer cells spread from the original site of the kidney tumour. All 29 proteins have been previously been linked to other

malignancies.

Dr. Yousef said if physicians can determine which kidney tumours have those proteins, and are likely to spread, they can monitor and treat those patients more aggressively. Patients who don't have those proteins and biomarkers might not have to undergo costly and intensive treatment or surgery.

The next steps would be to find ways to stop the proteins from turning on and triggering the metastasis.

Provided by St. Michael's Hospital