The role of vitamin C in controlling hypoxia factors in renal cell carcinoma

Project outline:
Our research on the role of vitamin C in cancer has shown a striking relationship between levels of vitamin C in tumour tissue from patients with colorectal or endometrial cancer, and levels of a pro-survival transcription factor, HIF. In colorectal cancer patients, increased tumour levels of vitamin C were associated with improved disease free survival. These are the only studies that have measured levels of vitamin C in human tumours. We now want to investigate another type of cancer to determine how universal this relationship is.

Kidney cancer is a lethal disease with few treatment options. The most aggressive type of kidney cancer (ccRCC) allows tumours to accumulate HIF, whereas papillary RCC does not. This study will determine whether vitamin C, HIF and patient survival are associated in kidney cancer, and investigate the molecular mechanisms involved. Vitamin C concentrations and HIF-activity will be measured in 120 banked kidney tumour samples, and patient outcome will be recorded. Our findings will pave the way for clinical trials of vitamin C in cancer.

Indicate preferred student expertise:
We are seeking an enthusiastic and meticulous student to join our multidisciplinary cancer research group. Our group is studying the molecular and cellular basis of cancer, and find new ways to treat cancer patients.

The student will be exposed to diverse biochemical and molecular techniques, enabling them to undertake multidisciplinary laboratory studies with links to clinical outcome.

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