

Abstract of Presentation

Tumour suppressor signaling networks and human disease

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Abstract :

Our understanding of the molecular basis of cancer has been illuminated greatly by the study of familial cancer syndromes. Investigations of the specific mutations responsible for these syndromes and the cellular signaling circuits disrupted by the mutant proteins have provided unprecedented insight into the molecular origin of inherited and sporadic forms of cancer and potent targets for development of therapeutic agents to combat disease. These investigations have also invariably helped to shed light on fundamental biological processes such as cell growth and division, metabolism and angiogenesis. Studies on the molecular basis of the von Hippel Lindau (VHL) hereditary cancer syndrome illustrate these principles very well. Our studies of the normal function of the VHL gene product have provided new insight into the relationship between cytoskeletal dynamics, chromosome segregation and kidney cancer development and have helped to decipher the molecular mechanisms underlying the maintenance of oxygen homeostasis and its connection to the pathophysiology of cancer and more recently, heart disease and diabetes.