

GUY G. POIRIER, Ph.D.



Dr. Guy G. Poirier is a distinguished Canadian biochemist renowned for his extensive and impactful contributions to the field of poly(ADP-ribose) polymerase (PARP) research. His career, spanning several decades, has been marked by pioneering discoveries, prestigious accolades, and a profound influence on the next generation of scientists. His work is highly influential, placing him among the top researchers in Canada based on citation metrics.

Dr. Poirier earned his Ph.D. in Biochemistry from Université Laval in 1973, followed by postdoctoral fellowships at the University of Sussex in the U.K. and the University of Calgary, Canada. He began his independent career as a faculty member in the Department of Biology at the Université de Sherbrooke from 1975 to 1985. Currently, he is a full professor in the Department of Molecular Biology, Medical Biochemistry and Pathology at the Faculty of Medicine of Université Laval.

Dr. Poirier's early promise and groundbreaking research were highlighted by his reception of the prestigious Eleanor Roosevelt Fellowship from the International Union Against Cancer (UICC). This enabled him to conduct research at the Swiss Institute of Experimental Cancer Research (ISREC) in Lausanne, Switzerland, from 1983 to 1984. He is the only Canadian to have received this esteemed fellowship twice, with the second award in 1992 facilitating a research year at the Imperial Cancer Research Fund (ICRF), now known as Cancer Research UK. During his time at the ICRF, Dr. Poirier worked alongside leading scientists, including Dr. Tomas Lindahl. Dr. Lindahl was later awarded the 2015 Nobel Prize in Chemistry, which he shared with Paul Modrich and Aziz Sancar, for their seminal work on the mechanistic studies of DNA repair. Their discoveries have been crucial in understanding how cells protect their genetic information, offering profound insights into the development of cancer and the aging process.

Dr. Poirier's own research has centered on the molecular mechanisms and physiological roles of PARPs, enzymes that are critical to DNA repair and cell death. Dr. Poirier also pioneered the study and characterization of poly(ADP-ribose) glycohydrolase (PARG), the primary enzyme responsible for catabolizing poly(ADP-ribose) and reversing the effects of PARPs. His group was instrumental in the co-discovery of caspases, which are proteases essential for apoptosis, and identified PARP1 as one of their primary substrates. He has conducted pioneering studies on the structure and activity of PARP enzymes and their involvement in various cellular processes and diseases. Furthermore, Dr. Poirier was involved in the discovery of a distinct form of cell death known as Parthanatos. His extensive research has also shed light on the roles of PARP in cancer which contributed to the development of PARP inhibitors used in the clinic. Drs. Guy Poirier and Scott H. Kaufmann (Mayo Clinic, USA) established a long-lasting collaboration that has profoundly shaped the understanding and clinical application of PARP inhibitors in cancer therapy. This collaboration has been instrumental in elucidating the mechanisms of PARP inhibitors and advancing their use as targeted treatments for various cancers.

In recognition of his significant contributions, Dr. Poirier was awarded a senior Canada Research Chair in Targeted Proteomics in 2002, which was renewed in 2009. He founded and directed the Proteomics Core facility at the CHU de Québec Research Center and has served as a consultant for the Proteomics and Mass Spectrometry Platform since 2011. He was also the founding president of the Canadian National Proteomics Network (CNPN).

Throughout his illustrious career, Dr. Poirier has been honored with numerous awards, including the Diamond Prize for Fundamental Research, an *Honoris Causa* degree from the Université de Rennes-1 in France, and the Scientific Mentoring Award from the Quebec's clinical research association. In 2015, he received the Canadian National Proteomics Network (CNPN)-Tony Pawson Proteomics Award, which acknowledges remarkable achievements in the field of proteomics. A prolific author, Professor Poirier has published more than 250 papers on PARPs, solidifying his legacy as a leader in the field.