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SRMS, AN UNHERALDED SRC-RELATED KINASE- BIOCHEMISTRY AND PHOSPHOPROTEOMICS

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SRMS (Src-related kinase lacking C-terminal regulatory tyrosine and N-terminal myristoylation sites) is a non-receptor tyrosine kinase that belongs to the BRK family kinases (BFKs) whose other two members include BRK (Breast tumor kinase or protein tyrosine kinase 6) and FRK (Fyn-related kinase). Like BRK, FRK and Src-family kinases, SRMS possesses the prototypical SH3 (Src-homology 3) and SH2 (Src-homology 2) domains involved in intra/inter-molecular interactions as well as a catalytic kinase domain. However, unlike BRK and Src family kinases, SRMS lacks a conserved C-terminal auto-regulatory tyrosine residue implicated in the regulation of enzymatic activity. Furthermore, unlike the BRK and Src family kinases whose roles have been well established in signal transduction, the cellular roles of SRMS are unknown. We performed the first biochemical characterization studies on SRMS and discovered that the 50 amino acid-long N-terminal sequence in the kinase plays a critical role in regulating the enzymatic activity and consequent substrate phosphorylation. We further applied global and shot-gun phosphoproteomic approaches to identify the candidate cellular substrates and signaling intermediates of SRMS which provided key insights into the cellular roles played by the kinase. Highlights of these studies will be discussed.

Biography

Dr. Kiven Erique Lukong received his Ph.D. degree in biochemistry from the University of Montreal in Canada and pursued his post-doctoral training first at Harvard Medical School, U.S.A. and later at McGill University (Canada). He is currently an Associate Professor in the Department of Biochemistry at the University of Saskatchewan (U of S, Canada), a member of the Cancer Research Cluster and director of a breast cancer research lab. Since beginning his independent academic career at the U of S, Dr. Lukong has obtained career awards and grants from the Saskatchewan Health Research Foundation and the Canadian Institutes of Health Research. The Lukong lab is interested in cell signaling and phosphoproteomics. Dr. Lukong's research broadly involves elucidating the signaling mechanisms and phosphorylation events that control growth of normal and cancer cells. His lab has published numerous articles covering his broad field of interest.

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