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Multiparameter analysis using cell cycle biomarkers for breast cancer: Prognostic and predictive implications

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Cell cycle related molecules play a pivotal role in maintaining genomic stability and can be used as biomarkers for cell cycle phase distribution. In this study, we performed immunohistochemical multiparameter analysis using five cell cycle related biomarkers for a cohort of 182 patients and linked it with clinicopathological information. Various stages involved in the design, development and validation of proprietary antibodies against these biomarkers will be discussed. Three unique cell cycle phenotypes were identified 1) out-of-cycle state 2) G1 delayed/arrested state and 3) accelerated cell cycle progression state. Our algorithm sheds new light into the cell cycle state of dynamic tumour populations in vivo. The information obtained is of major prognostic significance and may impact on individualised therapeutic decisions.

Biography

Saroj Velamakanni earned his PhD degree in Molecular Microbiology at University of Cambridge, UK. In 2002, he was awarded the prestigious Cambridge Nehru Scholarship to pursue his Doctoral studies. After Post-doctoral work at the Universities of Cambridge, he received a research fellowship from Wolfson College, Cambridge to work on Calcium Signalling in mammalian systems. During this time his work was published in prestigious journal Nature. In 2012, he became associated with the start-up Biotech/in vitro diagnostics company Fahy Gurteen Labs based in Cambridge Research Park first as a Senior R&D Scientist and currently as a Research Director. He has 22 peer reviewed high impact publications and six patents to his credit.

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