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Nallasivam Palanisamy
Henry Ford Health System, USA

Abstract

Prostate cancer (PCa) remains the most commonly diagnosed cancer in American men with an estimated incidence of220, 800 new cases and accounting for 27,540 cancer related deaths in 2015. The genetic basis of 50-60% of PCa is attributable to rearrangements in ETS genes (ERG, ETV1, ETV4, and ETV5), BRAF, RAF1 and overexpression of SPINK1. The discovery and validation of reliable diagnostic methods are warranted to detect these molecular rearrangements. ETS gene However, due to the lack of specific antibodies for ETV1, ETV4 and ETV5 genes, in situ detection of these markers is not feasible. We developed a novel RNA in situ hybridization (RNA-ISH) based assay for in situ detection of ETV1, ETV4, and ETV5 in formalin fixed paraffin embedded (FFPE) tissues from prostate needle biopsies, prostatectomy, and metastatic pca specimens using RNA probes developed by advanced cell diagnostics. Further, with combined RNA-ISH and IHC we identified rare subset of prostate cancer with dual ETS gene rearrangements in independent tumor foci. The high specificity and sensitivity of RNA-ISH provides an alternate method for the in situ detection of ETS gene aberrations in prostate cancer.

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Biography

Nallasivam Palanisamy has adopted newly developed Molecular and Cytogenetic Tools and applied them successfully for the discovery of important cancer-specific biomarkers and has developed diagnostic tools for routine diagnosis and follow-up treatment in the clinics. His work has made a great impact in Cancer Research and mutagens in the Peace River District for an Environmental Group and acted as Intervenor in the Pulp Mill Hearing in Alberta for Friends of the and he was able to accomplish this by maintaining an independent research program while playing key roles in large team projects at various institutions to makeImportant high-impact contributions to Advance Cancer Research.