Prevathe Poniah et al., J Mol Biomark Diagn 2014, 5:2
http://dx.doi.org/10.4172/2155-9929.S1.022

OMICS Group Conferences
Accelerating Scientific Discovery

5th International Conference on
Biomarkers & Clinical Research
April 15-17, 2014 St. Hilda's College - University of Oxford, UK

Estrogen-related receptor gamma (ERRgamma) as a potential marker for prostate cancer

Prevathe Poniah[1], Azad H.A Razack[1], Rozaimi Razali[2] and Zahurin Mohamed[2]
[1]University of Malaya, Malaysia
[2]Oxford Gene Technology, UK

Introduction: Prostate cancer (PCa) remains the second most frequent type of cancer in men worldwide. Prostate specific antigen (PSA)-based screening has been able to reduce cancer-related death by only 20%, whereby these are mostly characterized by indolent cancers. To date, the key issue in PCa is to differentiate indolent from aggressive cancers with the aim of decreasing potential over-treatment for the disease and to this end, newer biomarkers are needed. Recent advances in the study of proteomics and high throughput technology have led to the discovery of several potential protein biomarkers for PCa. Autoantibodies (AAb) to circulating tumour-derived proteins are spontaneously generated in cancer patients. These tumour-microenvironment changes trigger host-immune responses which produce measurable signals. Hence, AAb signals have the potential to become excellent targets for early detection of cancers and for monitoring efficacy of treatment. In this study, we aimed to identify potential biomarkers among Malaysian prostate cancer patients via a minimally invasive method.

Methods: Using a case-control study design, we profiled for 1636 correctly folded functional proteins in 30 prostate cancer patients and 30 matched controls serum samples using the Oxford Gene Technology's (*Oxford Genomics UK, Ltd*) protein array. Penetrance based fold change was calculated to measure the likelihood that a given raw fold change is true. The student t-test was used for significance testing. Only proteins with corrected p-values of less than 0.05 were selected. As for functional analysis, proteins with known associations to the disease/condition were identified using a combination of text mining approach from the PubMed database followed by comparisons with KEGG, REACTOME and MalaCards for biological associations.

Results: AAb reactivity for ESRRG was identified to be significantly different (P=0.039) between the subjects with prostate cancer as compared to controls when measured according to the penetrance based fold-changes. Cases exhibited significant fold change difference (3.22-fold change) when compared to matched controls.

Conclusion: ESRRG revealed significant reactivity with Aab in blood serum among PCa cases in our study cohort. Therefore, we conclude that AAb corresponding to ESRRG may potentially aid in the early detection of prostate cancer and assist in monitoring progression of disease. This protein could also potentially be a target for immunotherapy.

Biography

Prevathe Poniah is currently pursuing her Ph.D. in Molecular Medicine in Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia. Her thesis based on Genomics and Proteomics of Prostate Cancer Among Malaysians. She had worked on single nucleotide polymorphisms (SNPs) within the androgen metabolism pathway and its association with risk for prostate cancer. She had presented her work in 26th Scientific Meeting of Malaysian Society of Pharmacology and Physiology 2012 and in International Conference on Advances in Medical Science 2013. She is now focusing on copy number variation (CNVs) associated with prostate cancer as well as protein markers that could indicate disease conditions and potentially therapeutic targets using microarray platforms (aCGH and protein array technology)

preathy_87@yahoo.com.sg