International Conference on

FORENSIC RESEARCH & TECHNOLOGY
&
ANNUAL BIOMARKERS CONGRESS

September 17-18, 2018 | Osaka, Japan

Nancy Lan Guo

West Virginia University, USA

A Clinically applicable predictive 7-gene assay and prognostic protein biomarkers for lung cancer

The FDA has identified pharmacogenomics as key opportunities for personalized medicine. The 21st century has witnessed breakthroughs in molecular diagnosis and prognosis in cancer treatment. This talk will introduce projects in Dr. Lan Guo's group in West Virginia University Cancer Institute, which focuses on the identification of clinically applicable biomarkers for non-small cell lung cancer (NSCLC) prognosis and prediction of the clinical benefits of chemotherapy. The mRNA expression of 160 genes identified from microarray was analyzed in qRT-PCR assays of independent 337 snap-frozen NSCLC tumors to develop a predictive signature. A clinical trial JBR.10 was included in the validation. A 7-gene signature was identified from training cohort (n=83) with accurate patient stratification (P=0.0043) and was validated in independent patient cohorts (n=248, P<0.0001) in Kaplan-Meier analyses. In the predicted benefit group, there was a significantly better disease-specific survival in patients receiving adjuvant chemotherapy in both training (P=0.035) and validation (P=0.0049) sets. In the predicted non-benefit group, there was no survival benefit in patients receiving chemotherapy in either set. The 7-gene signature is enriched in immune response. Multiple signature genes had concordant DNA copy number variation, mRNA and protein expression in NSCLC progression. Overall, the predictive 7-gene assay and prognostic protein biomarkers are clinically applicable for improving NSCLC treatment, with important implications in lung cancer chemotherapy and immunotherapy.

Biography

Nancy Lan Guo has completed her PhD from West Virginia University in 2004. She is the Professor of Occupational and Environmental Health Sciences. She has published more than 42 papers in reputed journals and has two patents from the US on cancer biomarkers.

lguo@hsc.wvu.edu

Journal of Forensic Toxicology & Pharmacology, Hybrid Open Access | ISSN: 2325-9841 | Forensic Research and Biomarkers 2018 | Volume: 7

Page 46