Vertical Flow Assay Detection for GM2-AP in Simulated Urine of Non Small Cell Lung Cancer Patients

Reynders, Alexa (School: Benilde-St. Margaret's)
Larson, Benjamin (School: Benilde-St. Margaret's)

Non-Small Cell Lung Cancer (NSCLC) causes the most cancer related deaths worldwide, and accounts for more deaths than the next three leading cancers combined (Key Statistics, 2017). At any stage of NSCLC, a person is more likely to die from it than to be cured (Non-Small Cell, 2016). These poor survival rates are frequently attributed to a majority of late stage diagnoses. The goal of this study was to determine the validity of using a rapid response vertical flow assay to detect GM2-AP, a NSCLC biomarker, and diagnose NSCLC in earlier stages due to the rapidity and low cost of the tests. Through two phases of trials, the tests were determined to be valid and practical in theory, as long as the sensitivity of rapid response vertical assays are able to meet limitations in human urine concentrations. More precise monoclonal secondary antibodies would also be required before any use beyond experimental–including clinical diagnostics.

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