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Bio-Techne's liquid Biopsies to improve personalized care in lung cancer diagnostics

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Bio-Techne has recently announced the publication of a recent validation study demonstrating that the proprietary exosome-based liquid biopsy tests from Bio-Techne's Exosome Diagnostics brand may be used to assess the mutational status of the Epidermal Growth Factor Receptor (*EGFR*) gene in patients with non-small cell lung cancer (NSCLC).

NSCLC is the most common type of lung cancer. Approximately 10-40% of patients with NSCLC have mutations within the *EGFR* gene. Several treatment options for NSCLC use drugs targeting cells with *EGFR* mutations; however, over half of these patients develop resistance during treatment due to the emergence of a resistance mutation in the gene. It is critical that tumor mutations be monitored during therapy of NSCLC patients, given the aggressive nature of this lung cancer, and to ensure that patients receive the most effective treatment option.

The study published in Oncotarget describes Bio-Techne's proprietary technique to co-isolate exosomal RNA/DNA and cell-free tumor DNA in a single step, followed by a qPCR-based assay to detect 29 different types of mutations in *EGFR*, including EGFR T790M.

Highlights of the data include:

- The extended EGFR panel achieved a sensitivity of 92% (L858R) and 95% (T790M) both at 100% specificity, and 86% sensitivity for exon 19 indels at 94% specificity in patients with M1b extra-thoracic disease.
- Including the challenging patients with intrathoracic (M0/M1a) disease resulted in a sensitivity of 90% (L858R), 83% (T790M) and 73% for exon 19 indels.

"This a game-changer for liquid biopsies," stated Steven Silverman, VP and General Manager of Bio-Techne's Exosome Diagnostics brand. "The results from this validation study shows not only that our proprietary technique increases the performance of liquid biopsy mutation assays, but it can also be used to measure changes on the RNA transcriptome. In addition, we can enrich for exosomes derived from specific tissues using surface markers, making it possible to profile the RNA transcriptome from those tissue-specific cells in the biofluids."