INTRODUCTION
ThyroSeq v3 Genomic Classifier (GC) is a molecular test used to improve diagnosis in thyroid nodules with indeterminate fine-needle aspiration (FNA) cytology and inform patient management.

RESULTS
ThyroSeq Performance in Cytology Smears (n=33, 14 nodules)

- In cytology smears, adequate DNA results for mutations and copy number alterations were obtained in 93% (13/14) of samples and adequate RNA results for gene fusions and gene expression in 79% (11/14) of samples.
- Two smears with <200-300 cells showed failure of RNA analysis.
- One old cellular smear (6 yrs) failed RNA due to degraded nucleic acids.

Comparison of Test Informative Rate Using Cytology Smears vs. FNA in ThyroSeqPreserve

- The rate of informative results was higher in FNAs collected into preservative solution as compared to cytology smears (79-93% vs. 96%).
- The turnaround time was 1-3 days longer due to additional preparatory steps for cytology smears as compared to FNA samples collected into preservative solution.

Accuracy of Detection of Mutations in Reference Cytology Smears from World-Wide Ring Trial Study

- 10% mutation
- 5% mutation
- 1% mutation
- 0% mutation

CONCLUSIONS
- The results of this study provide evidence that ThyroSeq v3 GC testing can be effectively performed using routinely prepared cytology smears.
- Overall, the test informative results were obtained in 79-93% of cytology smears.
- The minimum required cellularity of cytology smears is 200-300 cells.
- Both PAP-stained and Diff-Quik-stained smears can be used.
- Gene mutations could be reliably detected down to 5% allele frequency.
- Additional studies are underway to provide further analysis of cytology smear adequacy for ThyroSeq testing.

REFERENCES