

# Covaris introduces truXTRAC™ - a novel High Throughput FFPE DNA extraction workflow at AGBT 2014

WOBURN, Mass. February 12, 2014

Covaris, Inc. introduced the truXTRAC™ High Throughput FFPE DNA Extraction & Purification Kit at the 2014 Advances in Genome Biology and Technology (AGBT) meeting held in Marco Island, Florida. This newest innovation provides an optimized workflow for high-yield / high quality DNA extraction from challenging, yet highly valuable Formalin-Fixed, Paraffin Embedded (FFPE) tissue samples.

Efficient, high yield, and high quality extraction of DNA from FFPE tissues for NGS-based applications is made possible by the use of Covaris' patented Adaptive Focused Acoustics™ (AFA) Technology. The unique focused, short wavelength acoustic field generated by Covaris AFA not only allows for active paraffin removal without the use of organic solvents, but enables the effective digestion of proteins and the efficient release of DNA, as the tissue is more efficiently rehydrated.

The truXTRAC High Throughput FFPE DNA Extraction & Purification Kit includes Covaris' 2D barcoded 8 microTUBE strips and allows 96 samples to be processed in a standard SBS microplate format. Active paraffin removal for 96 samples takes 1 hour in a Covaris LE220 Focused-ultrasonicator. Vacuum purification is fully automatable and scalable. The new truXTRAC High Throughput FFPE DNA Extraction Kit delivers the same outstanding performance as the Covaris Single tube FFPE DNA Extraction Kit.

Also presented at the AGBT meeting, were whole genome sequencing results from truXTRAC FFPE DNA samples. In a comparative study, truXTRAC showed both greater yield and greater coverage depth across the genome than other commercial extraction methods. More importantly, coverage uniformity with the truXTRAC kit was very similar to that of DNA extracted from matched fresh frozen tissues, such as in gene rich regions of the genome.

Covaris CEO, Jim Laugharn commented, "The value of FFPE DNA in a clinical setting is increasing dramatically as analytical genetic tools become more sensitive. Covaris truXTRAC FFPE DNA extraction based on AFA technology is uniquely positioned to match both the demanding sensitivity and analytical requirements of clinical molecular diagnostics. Covaris certainly provides a pre-analytical advantage for FFPE sample prep."

FFPE is a widely used method for archiving tissue specimens; especially clinical samples. These archived, often irreplaceable samples are an unprecedented resource for studying gene variations or gene expression profile changes, and have the promise of empowering advancements to clinical diagnostics and personalized medicine. Extraction of DNA or RNA from FFPE tissue has traditionally been a significant challenge as it requires removing the paraffin, rehydrating the sample, and reversing the formaldehyde cross-links. Often these chemical steps are incomplete as they are based on simple diffusion, which results in low yields and poor quality of nucleic acid samples. Additionally, the

traditional extraction processes require the use of hazardous or difficult-to-handle solvents causing barriers to automation and higher throughput processing. The Covaris AFA mechanical process imparts active turbulence into the samples in a highly controlled, repeatable manner.

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