

Liquid Biopsy

truXTRAC® cfDNA

Designed to standardize circulating cell-free DNA extraction ... an active AFA-based, high-throughput, high-yield system

Circulating cell-free DNA (cfDNA) are important biomarkers for non-invasive prenatal testing (NIPT), diagnosis, prognosis, and treatment monitoring of cancer, as well as diagnosis of allograft and transplant rejection.

The current methods used for the extraction and purification of cfDNA from whole blood are designed for use with fresh plasma from K3-EDTA-stabilized whole blood, requiring rapid on-site processing; leukocyte lysis and genomic DNA contamination begins shortly after collection.

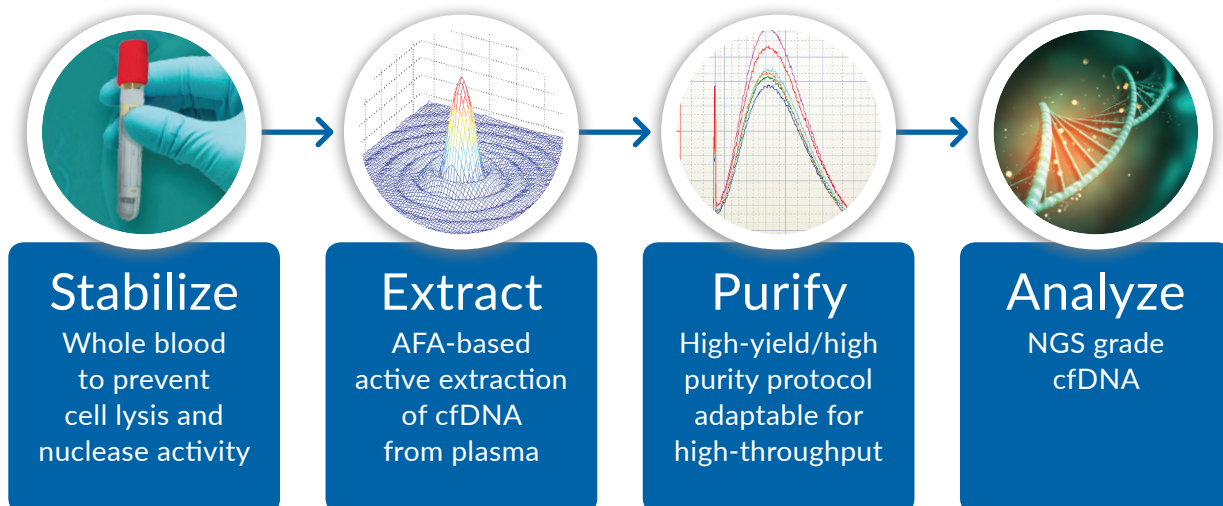
Alternative methods for blood collection such as the Streck Cell-Free DNA™ BCT tubes have been specially designed for cfDNA stabilization, however, they contain fixative-releasing stabilizers that introduce complexities for the extraction step. This introduces biases in the cfDNA population when using passive extraction methodologies. Furthermore, current extraction methods involved complex workflows and were not designed for high-throughput applications. Collectively, these

barriers limit the number of samples that can practically be studied for the discovery and validation of clinically relevant mutations.

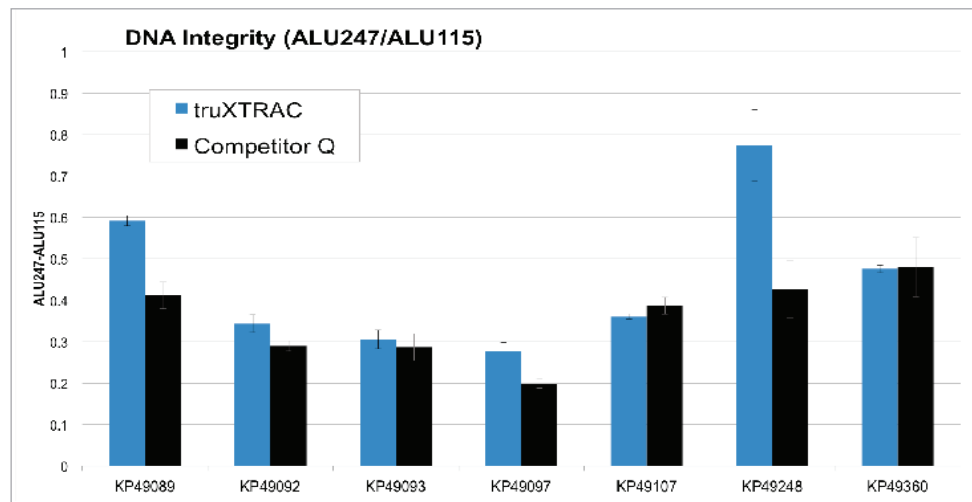
The Covaris Adaptive Focused Acoustics® (AFA®) enabled truXTRAC cfDNA from Plasma kit is an active method of dissociating and extracting cfDNA from histones and other proteins, as well as apoptotic body-associated cfDNA linked complexes which occur in stabilized plasma.

Active extraction of cfDNA not only significantly increases the yield but also the complexity of the extracted cfDNA. AFA-enabled extraction ensures that the cfDNA profile in the original plasma sample is reflected in the extracted and purified sample. In addition, truXTRAC cfDNA offers a simple and efficient workflow, thereby enabling short turnaround time sample processing and high throughput implementation.

Simple ... Efficient ... Scalable Workflow

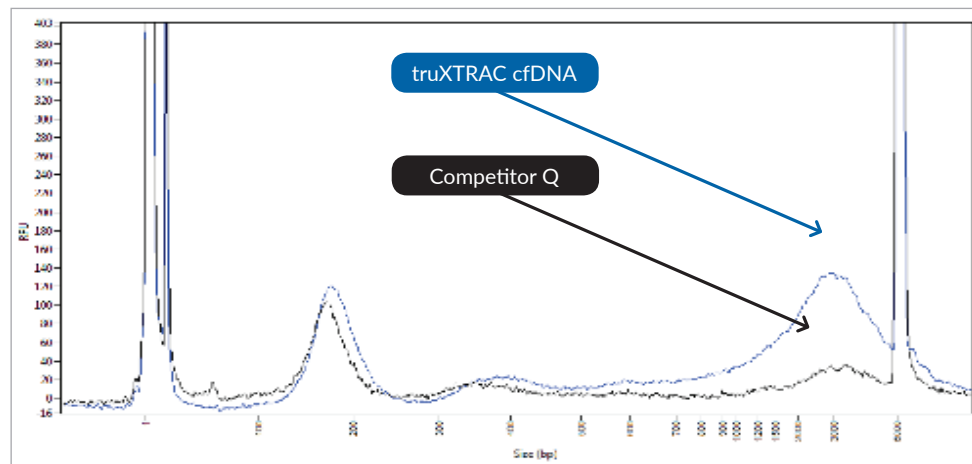


cfDNA Yield and DNA Integrity (Alu115/247 ratio) Reflect the Increase in Complexity of Actively Extracted cfDNA



DNA integrity index as determined by qPCR (Alu115/Alu247 amplification ratios) from cfDNA isolated by Competitor Q (black) and truXTRAC-cfDNA from Plasma kits (blue.) Three of seven shown donors display significantly different Alu115/Alu247 ratios as compared to the market leading cfDNA extraction kit.

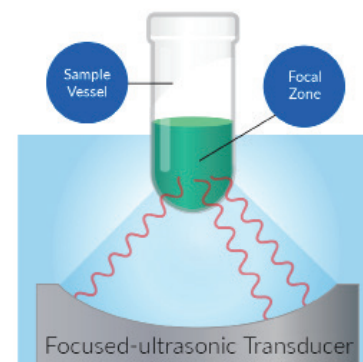
cfDNA complexity of the truXTRAC-cfDNA isolates is reflected in the electropherograms of the (Fragment Analyzer, AATI). cfDNA isolated with either truXTRAC or a leading cfDNA extraction kit are analyzed on the Fragment Analyzer (AATI).



Electropherogram of extracted cfDNA using Competitor Q (black trace) and truXTRAC (blue trace) of donor KP49089.

TRADEMARKS ARE THE PROPERTY OF THEIR RESPECTIVE OWNERS.

AFA-energetics™ Technology



AFA technology was developed exclusively by Covaris and is used in all of our Focused-ultrasonicators. Our patented approach combines the integration of proprietary high-performance control electronics, medical-grade transducers, and custom-engineered acoustical cuvettes.

Together, these components reproducibly convert focused high-frequency acoustic energy into mechanical force, delivered within a tightly-defined region within the sample tube. This process, defined as AFA-energetics, uses controlled bursts of high-power acoustic energy to process samples in a temperature-controlled, non-contact, and closed vessel environment. Uniquely, all AFA Focused-ultrasonicators are calibrated to NIST traceable standards, ensuring highest quality and standardized results.

PATENTS ISSUED AND PENDING

Part #	Product Name	Description
520234	truXTRAC cfDNA from Plasma Kit - Column Purification (24)	The truXTRAC cfDNA kit contains AFA-optimized reagents and consumables required for extraction of cfDNA from up to 1ml plasma and with column-based purification (bead-based purification under development).