

# XCF™ Liquid Biopsy Kits: XCF COMPLETE & XCF Exosomal DNA

## SIMULTANEOUS PURIFICATION OF cfDNA & EXOSOMES

SYSTEMBIO.COM/XCF-LIQUID-BIOPSY-KITS

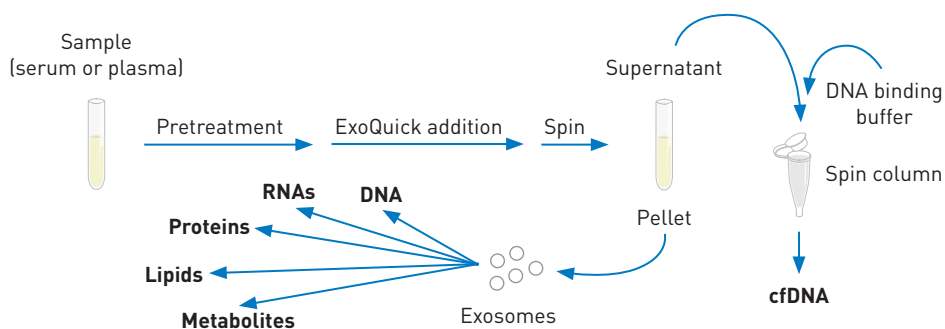
### HIGHLIGHTS

- **Comprehensive**—obtain two distinct sources of biomarkers from a single plasma or serum sample
- **Time-saving**—requires less than thirty minutes of hands-on time
- **Versatile**—compatible with a wide range of downstream applications such as qPCR and NGS
- **Clean**—minimal carryover of proteins such as IgG and albumin
- **Flexible**—choose from one of two kits depending on your exosome isolation method

Choose the **XCF COMPLETE Exosome & cfDNA Isolation Kit** if you'd like to isolate both exosomes and cfDNA. Or choose the **XCF Exosomal DNA Isolation Kit** if you already have purified exosomes and just need to isolate exosomal DNA.

### A more comprehensive approach to biomarker studies

Accelerate and enhance your biomarker discovery and characterization studies with the XCF™ COMPLETE Exosome & cfDNA Isolation Kit. This unique, two-in-one product delivers simultaneous isolation of cell free DNA (cfDNA) and exosomal DNA from the same sample, streamlining sample processing by removing the need to separately isolate DNA from multiple sources (Figure 1). In addition, once exosomes have been isolated, they can also be analyzed for protein, lipid, miRNA, and metabolite content, efficiently broadening your biomarker discovery capabilities and enabling correlation and co-analysis of cfDNA biomarkers with a complete range of exosomal biomarkers.



**Figure 1.** Accelerate your biomarker research with simultaneous isolation of exosomal DNA and cfDNA. Note that other types of exosome-derived proteins, miRNA, lipids, and more can be analyzed as well.

### Enhance the power of liquid biopsy

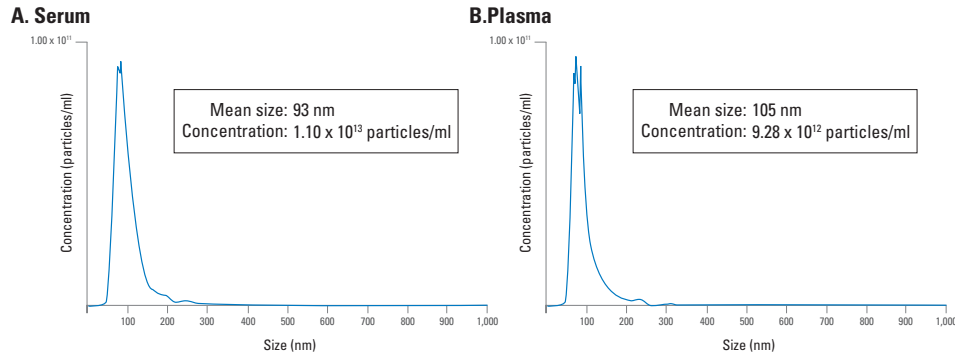
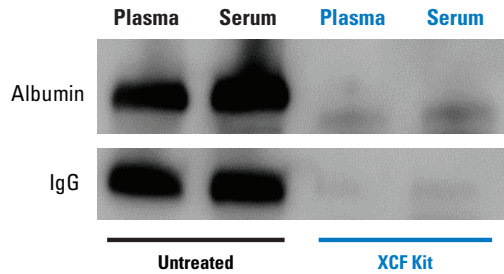
With the growing recognition that circulating, cfDNA can provide critical information on diseases that are normally difficult to detect with standard approaches—including cancer and neurological disorders—the interest in liquid biopsy methods for biomarker discovery and disease research is on the rise. However, in addition to cfDNA, exosomes are also a rich source of biomarkers that are amenable to the straightforward liquid biopsy approach. To help scientists maximize their biomarker discovery, SBI has developed the XCF COMPLETE Exosome & cfDNA Isolation Kit, which enables quick and easy isolation of both exosomes or exosomal DNA (in one aliquot) and cfDNA (in a separate aliquot) from a single serum or plasma sample (Figure 1).



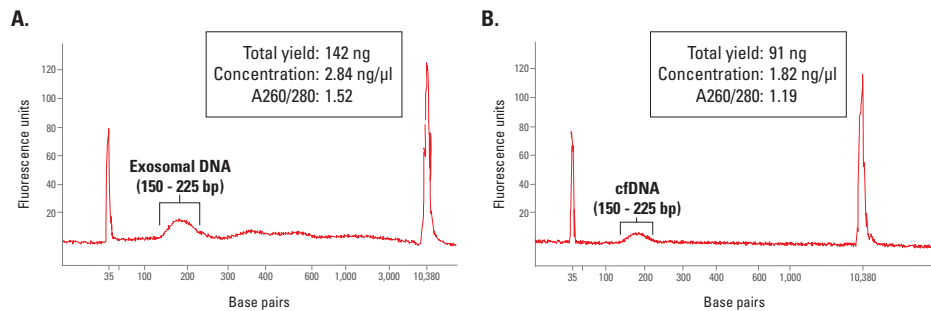
**Demonstrably high performance for biomarker research**

SBI's XCF™ COMPLETE Exosome & cfDNA Isolation Kit delivers high performance in a quick and easy workflow. Samples processed with the reagents in this kit show much lower protein carryover than untreated samples (Figure 2), the expected exosome particle size profile (Figure 3), excellent exosomal and cfDNA yields and quality (Figure 4), and the expected DNA sizes for both exosomal DNA and cfDNA<sup>1</sup> (Figure 4).

**Figure 2. The XCF COMPLETE Kit delivers low protein carryover.** Western blots of co-purifying human albumin (~67kD) and heavy-chain IgG (~50kD) comparing untreated serum and plasma (left two lanes) versus the same samples processed using the XCF Kit (right two lanes), show much less protein carryover in the samples processed using the XCF Kit. For each lane, 20 µg of total protein were loaded.



**Figure 3. Exosomes prepared using the XCF COMPLETE Kit deliver the expected particle size profile.** The NanoSight NTA data for extracellular vesicles isolated from 500 µl of serum (A) and plasma (B) show the expected size profile for exosomes with very little smaller or larger-sized particles.



**Figure 4. cfDNA and exosomal DNA isolated using the XCF COMPLETE Kit are of good quality and yield with the expected size.** Agilent Bioanalyzer profiles of the exosomal DNA portion (A) and cfDNA portion (B) of 500 µl of serum processed with the XCF COMPLETE Kit. A notable peak around ~166 bp is seen in both cfDNA and exosomal DNA, which is consistent with cfDNA sizes reported in literature<sup>1</sup>, and overall DNA quality and yields are sufficient for downstream applications such as qPCR and sequencing.

**Building the tools that speed your research**

With an eye on the latest advances, SBI finds promising technology and converts it into easy-to-use tools accessible to any researcher. Our growing exosome product portfolio is just one example. See what other ways SBI can drive your research forward—visit us at [systembio.com](http://systembio.com).

**References**

1. Lo YM, et al. Maternal plasma DNA sequencing reveals the genome-wide genetic and mutational profile of the fetus. *Sci Transl Med.* 2010. **2**(61):61ra91. PMID: 21148127.

Supercharge your liquid biopsy-based biomarker studies—learn more by visiting [systembio.com/XCF-Liquid-Biopsy-Kits](http://systembio.com/XCF-Liquid-Biopsy-Kits)