Mag-Bind® cfDNA Kit

Rapid and reliable isolation of circulating DNA from 500-4,000 µL plasma or serum samples

Features and Benefits

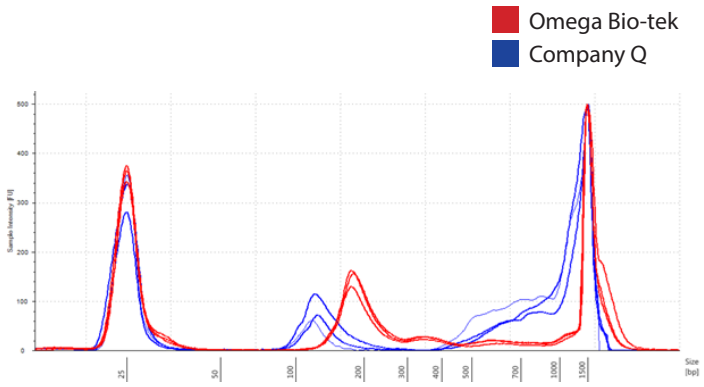
- Optimum recovery of cell-free DNA with minimal genomic DNA contamination
- Versatile sample input volumes (500-4,000 µL of serum/plasma) and low elution volumes (50 µL)
- High quality DNA suitable for a variety of downstream applications such as qPCR & NGS
- Reduced binding & lysis buffers allow for larger sample volume processing

The Mag-Bind® cfDNA Kit is designed for rapid and reliable isolation of circulating DNA from 500-4,000 µL plasma/serum samples. The Mag-Bind® cfDNA Kit can be processed manually or with automated platforms. The procedure eliminates the need for funnels and vacuum steps, providing hands-free operation in automated protocols.

The uniquely formulated binding buffer allows for large sample volumes to be processed in automated formats with 4 mL of serum or plasma being processed in 24-well plates. The magnetic properties of the Mag-Bind® particles CH enable fast magnetic separation, even when using large volumes. The high binding capacity of the beads allows for lower volume of magnetic particles needed, thus reducing the final elution volume required. 4 mL of serum or plasma can be eluted in as low as 50 µL.

The system combines the reversible nucleic acid-binding properties of Mag-Bind® paramagnetic particles with a unique binding system that targets smaller DNA fragments (150-400 bp) and minimizes the binding of larger fragments, such as gDNA.

Electropherogram Overlay of Purified DNA from 4 mL Serum



4 mL of unspiked serum was purified using kits from Omega Bio-tek and Company Q following manufacturer's recommended protocols. Purified DNA was analyzed on Agilent's TapeStation 2200.

Product Info	
Part Number	Preparations
M3298-00	5
M3298-01	50
M3298-02	200

OMEGA bio-tek

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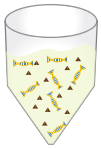
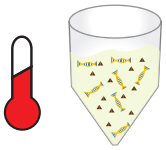
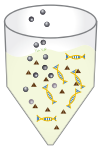
Protocol



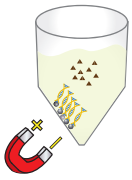
Aliquot sample and add digestion buffer



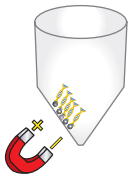
Heat for 20 minutes



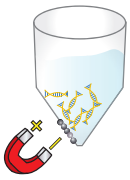
Add binding buffer and Mag-Bind® particles



Wash Mag-Bind® particles 3x



Dry



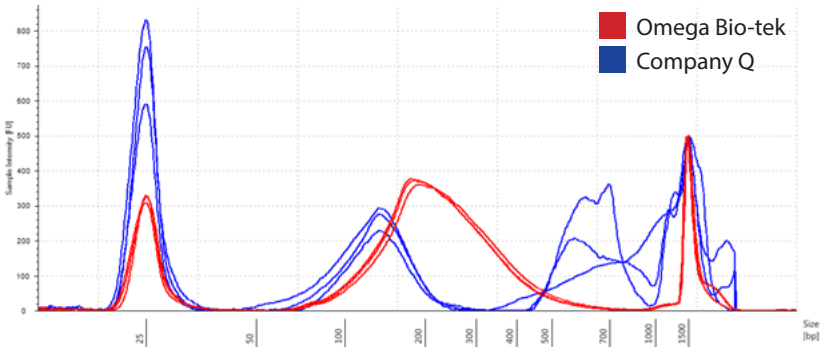
Elute

qPCR Comparison for 200 bp Fragments

Extraction Method	Average Ct	
	1X	10X
Omega Bio-tek	16.99	20.34
Company Q	17.18	20.59

Real-time PCR with human specific primers was performed on triplicates of undiluted and 10-fold dilutions of DNA isolated using Omega Bio-tek's Mag-Bind cfDNA Kit and a comparable column-based kit from Company Q.

Electropherogram Overlay of Purified DNA from 1 mL Serum



100 ng of 200 bp sheared bacterial genomic DNA was spiked into 1 mL of serum and extracted using Omega Bio-tek's Mag-Bind® cfDNA Kit and a comparable column-based kit from Company Q following manufacturer's recommended protocols. Purified DNA was analyzed on Agilent's TapeStation® 2200. The Omega Bio-tek kit was able to capture the circulating, cell-free DNA with no genomic DNA contamination. In contrast, Company Q's eluate contained high molecular weight fragments indicating the presence of genomic DNA in the circulating DNA isolation.

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