Plasma/Serum Cell-Free Circulating DNA Purification Micro Kit

This kit provides a fast, reliable and convenient spin column method for the isolation of high quality, high purity and inhibitor-free cell-free circulating DNA (cfc-DNA) from small fresh or frozen plasma/serum sample volumes ranging from 10 µL up to 200 µL.

The kit is designed to isolate all sizes of cfc-DNA from either fresh or frozen plasma/serum samples and the purified DNA is eluted into a flexible elution volume ranging from 25 µL to 50 µL. The purified plasma/serum cfc-DNA is fully compatible with all downstream applications including PCR, qPCR, methylation-sensitive PCR and Southern Blot analysis, microarrays and NGS.

Kit Specifications			
Sample Type	Plasma/ Serum	Maximum Elution Volume	50 µL
Anti-coagulant (for Plasma)	EDTA, Citrate or Heparin	Time to Complete 10 Purifications	15 - 20 minutes
Sample Volume Range	10 - 200 µL	Size of DNA Purified	≥ 50 bp
Minimum Elution Volume	25 µL	Average Yields	Variable depending on specimen

Plasma/Serum Cell-Free Circulating DNA Purification Micro Kit Benefits	
Fast and easy processing	Rapid spin-column format allows for the processing of multiple samples in less than 20 minutes.
Versatile plasma and serum input volumes	Isolate circulating DNA from 10 µL - 200 µL of plasma/serum.
Concentrate cell-free circulating DNA	Cell-free circulating DNA present in input volumes of 10 µL - 200 µL are concentrated into final elution volumes of 25 µL - 50 µL.
Isolate inhibitor-free DNA	Purified DNA can be used in a number of sensitive downstream applications including PCR, qPCR, methylation-sensitive PCR and Southern Blot analysis, microarrays and NGS.
Isolate all sizes of circulating DNA	The kit allows for the isolation of all sizes of fragmented cell-free circulating DNA, ranging from high molecular weight fragments down to fragments as small as 50bps.

Plasma/Serum Cell-Free Circulating DNA Purification Micro Kit

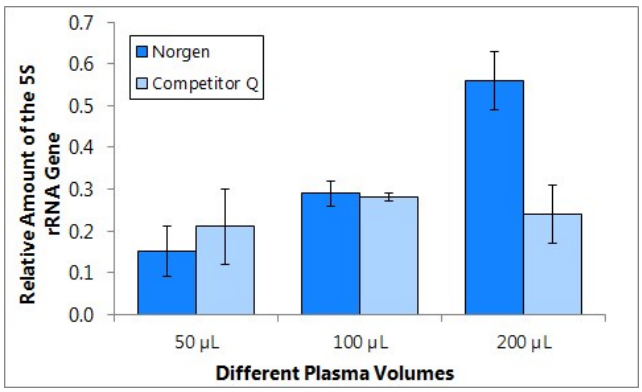

Figure 1. Purification of cell-free circulating DNA from different plasma volumes. Norgen's Plasma/Serum Cell-Free Circulating DNA Purification Micro Kit (Cat# 55500) was used to purify circulating DNA from 50 µL, 100 µL and 200 µL plasma prepared from blood collected on citrate as an anticoagulant in comparison to Competitor Q's kit. Two microlitres of the purified DNA was then used as the template in qPCR reactions to assess the relative amount of the purified housekeeping 5S rRNA gene. The relative amount of the 5S rRNA gene increases linearly with increasing the sample input volume. Norgen's kit showed the most consistent and the highest recovery of the housekeeping 5S rRNA gene as compared to the other isolation method.

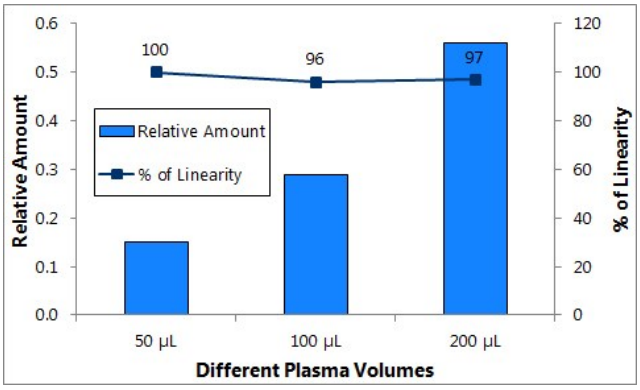

Figure 2. Linearity of DNA purified from increasing plasma volumes using Norgen's Plasma/Serum Cell-Free Circulating DNA Purification Micro Kit (Cat# 55500). Norgen's Plasma/Serum Cell-Free Circulating DNA Purification Micro Kit as used to purify circulating DNA from 50 µL, 100 µL and 200 µL plasma prepared from blood collected on citrate as an anticoagulant. Two microlitres of the purified DNA was then used as the template in qPCR reactions to assess the linearity of the purified housekeeping 5S rRNA gene from the different plasma volumes. Norgen's Plasma/Serum Cell-Free Circulating DNA Purification Micro Kit was able to recover 96% of the 5S rRNA gene from 100 µL plasma relative to the amount that is present in 50 µL plasma. Moreover, 97% of the 5S rRNA gene was recovered from 200 µL plasma relative to the amount that is present in 100 µL plasma.

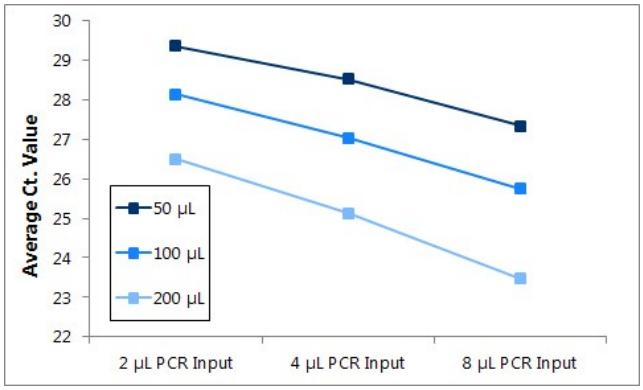

Figure 3. Determination of the amount of inhibition present in plasma cell-free circulating DNA samples when detecting the human 5S gene. DNA was isolated from 50 µL, 100 µL and 200 µL plasma using Norgen's Plasma/Serum Cell-Free Circulating DNA Purification Micro Kit (Cat# 55500). Increasing volumes of the elution (2, 4 and 8 µL) were used in a 20 µL qPCR reaction to observe any decrease in Ct value. An increase in Ct values with increasing amount of template would be a clear indication of PCR inhibitors present in the sample. An increase in elution volume used as a template in the qPCR did not affect the Ct value generated from qPCR and infact the Ct values tend to decrease with increasing the PCR input volume indicating that DNA purified from plasma using Norgen's kit is free of the common inhibitors usually present in plasma.

Plasma/Serum Cell-Free Circulating DNA Purification Micro Kit

Plasma/Serum Cell-Free Circulating DNA Purification Micro Kit Contents:

1. Number of Preps
2. Binding Buffer B
3. Proteinase K
4. Wash Solution A
5. Elution Buffer B
6. Micro Spin Columns
7. Collection Tubes
8. Elution tubes (1.7 mL)
9. Product Insert

Storage Conditions

All buffers should be kept tightly sealed and stored at room temperature (15-25°C) for up to 2 years without showing any reduction in performance.

Norgen's Plasma/Serum Cell-Free Circulating DNA Purification Kits contain ready-to-use Proteinase K solution, which is dissolved in a specially prepared storage buffer. The Proteinase K is stable for up to 2.5 years after delivery when stored at room temperature. To prolong the lifetime of Proteinase K, storage at 2–8°C is recommended.

Customer-Supplied Reagents and Equipment

- Benchtop microcentrifuge
- Micropipettors
- 96 – 100% ethanol

Shipping Conditions

The Plasma/Serum Cell-Free Circulating DNA Purification Micro Kit is shipped at room temperature.

Cat #	Description	Quantity
55500	Plasma/Serum Cell-Free Circulating DNA Purification Micro Kit	50 preps

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