Plasma/Serum Cell-Free Circulating DNA Purification Mini 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 plasma/serum sample volumes ranging from 200 µL up to 500 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 50 µL to 100 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	100 µL
Anti-coagulant (for Plasma)	EDTA, Citrate or Heparin	Time to Complete 10 Purifications	15 - 20 minutes
Sample Volume Range	200 - 500 µL	Size of DNA Purified	≥ 50 bp
Minimum Elution Volume	50 µL	Average Yields	Variable depending on specimen

Plasma/Serum Cell-Free Circulating DNA Purification Mini 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 200 µL - 400 µL of fresh or frozen plasma/serum.
Concentrate cell-free circulating DNA	Cell-free circulating DNA present in input volumes of 200 µL - 400 µL are concentrated into final elution volumes of 50 µL - 100 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 Mini Kit

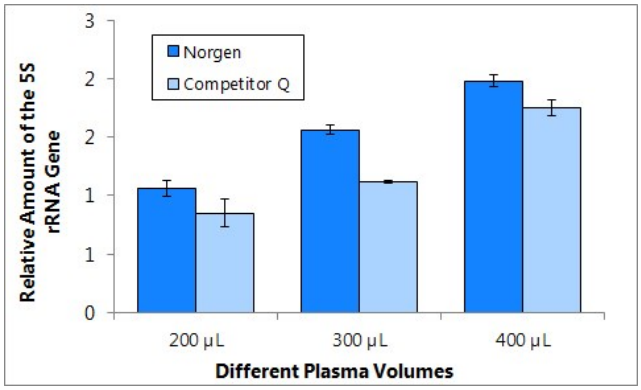

Figure 1. Purification of cell-free circulating DNA from different plasma volumes. Norgen's Plasma/Serum Cell-Free Circulating DNA Purification Mini Kit (Cat# 55100) was used to purify circulating DNA from 200 µL, 300 µL and 400 µL plasma prepared from blood collected on citrate as an anticoagulant in comparison to Competitor Q's kits. 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.

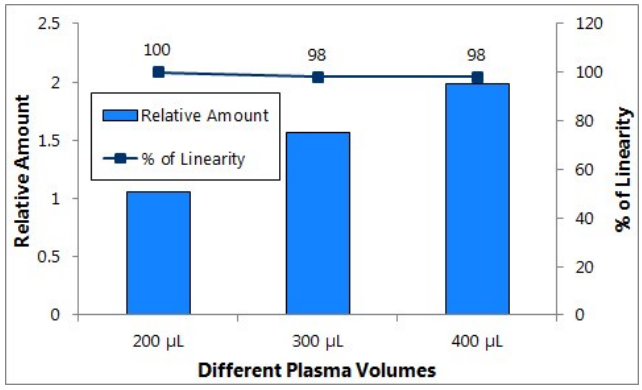

Figure 2. Linearity of DNA purified from increasing plasma volumes using Norgen's Plasma/Serum cell-free circulating DNA Purification Mini Kit (Cat# 55100). Norgen's Plasma/Serum Cell-Free Circulating DNA Purification Mini Kit was used to purify circulating DNA from 200 µL, 300 µL and 400 µL plasma prepared 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 Mini Kit was able to recover 98% of the 5S rRNA gene from 300 µL plasma relative to the amount that is present in 200 µL plasma. Moreover, 98% of the 5S rRNA gene was recovered from 400 µL plasma relative to the amount that is present in 300 µL plasma.

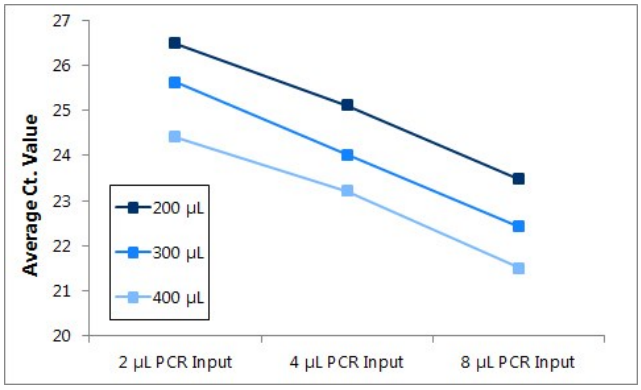

Figure 3. Determination of the amount of inhibition present in plasma cell-free circulating DNA samples when detecting the human 5S gene. DNA was isolated from 200 µL, 300 µL and 400 µL plasma using Norgen's Plasma/Serum Cell-Free Circulating DNA Purification Mini Kit (Cat# 55100). Increasing volumes 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 Mini Kit

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

1. Binding Buffer B
2. Proteinase K
3. Wash Solution A
4. Elution Buffer B
5. Mini Spin Columns
6. Collection Tubes
7. Elution tubes (1.7 mL)
8. 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 Mini Kit is shipped at room temperature.

Cat #	Description	Quantity
55100	Plasma/Serum Cell-Free Circulating DNA Purification Mini Kit	50 preps

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