

Plasma/Serum Cell-Free Circulating DNA Purification Midi Kit

Norgen's Plasma/Serum Cell-Free Circulating DNA Midi Purification Kit provide fast, reliable and simple procedures for isolating cell-free circulating DNA (cfc-DNA) from small plasma/serum volumes ranging from 1 mL up to 4 mL. Purification is based on spin column chromatography that uses Norgen's proprietary resin separation matrix. The kits are designed to isolate all sizes of cfc-DNA from either fresh or frozen plasma/serum samples. Moreover, the kit allow the user to elute the purified cfc-DNA into a flexible elution volume ranging from 50 μ L to 100 μ L. The purified plasma/serum cfc-DNA is eluted in an Elution Buffer that is 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 μ L |
| Anti-coagulant (for Plasma) | EDTA, Citrate or Heparin | Time to Complete 10 Purifica- tions | 40 - 45 minutes |
| Sample Volume Range | 1 - 4 mL | Size of DNA Purified | \geq 50 bp |
| Minimum Elution Volume | 50 μ L | Average Yields | Variable depend- ing on specimen |

Plasma/Serum Cell-Free Circulating DNA Purification Midi Kit Benefits

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|---|---|
| Fast and easy processing | Rapid spin-column format allows for the processing of multiple sam- ples in less than 45 minutes. |
| Versatile plasma and serum input volumes | Isolate circulating DNA from 1 mL - 4 mL of fresh or frozen plasma/ serum. |
| Concentrate cell-free circulat- ing DNA | Cell-free circulating DNA present in input volumes of 1 mL - 4 mL are concentrated into final elution volumes of 50 μ L - 100 μ L. |
| Isolate inhibitor-free DNA | Purified DNA can be used in a number of sensitive downstream ap- plications 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 cir- culating DNA, ranging from high molecular weight fragments down to fragments as small as 50bps. |

Plasma/Serum Cell-Free Circulating DNA Purification Midi Kit

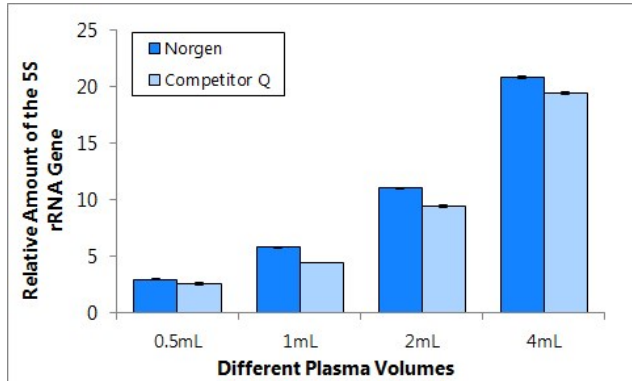


Figure 1. Purification of cell-free circulating DNA from different plasma volumes. Norgen's Plasma/Serum Cell-Free Circulating DNA Purification Midi Kit (Cat# 55600) was used to purify circulating DNA from 0.5 mL, 1 mL, 2 mL and 4 mL plasma prepared from blood collected on citrate as an anticoagulant 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.

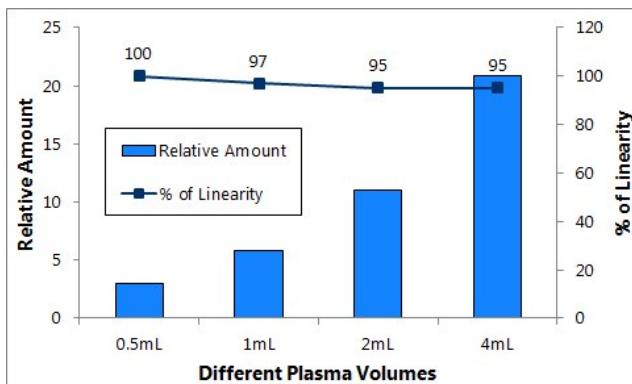


Figure 2. Linearity of DNA purified from increasing plasma volumes using Norgen's Plasma/Serum cell-free circulating DNA Purification Midi Kit (Cat# 55600). Norgen's Plasma/Serum cell-free circulating DNA Purification Midi Kit was used to purify circulating DNA from 0.5 mL, 1 mL, 2 mL and 4 mL plasma 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 Midi Kit was able to recover 97% of the 5S rRNA gene from 1 mL plasma relative to the amount that is present in 0.5 mL plasma. Moreover, 95% of the 5S rRNA gene was recovered from 2 mL plasma relative to the amount that is present in 1 mL plasma. Additionally, 95% of the 5S rRNA gene was recovered from 4 mL plasma relative to the amount that is present in 2 mL plasma.

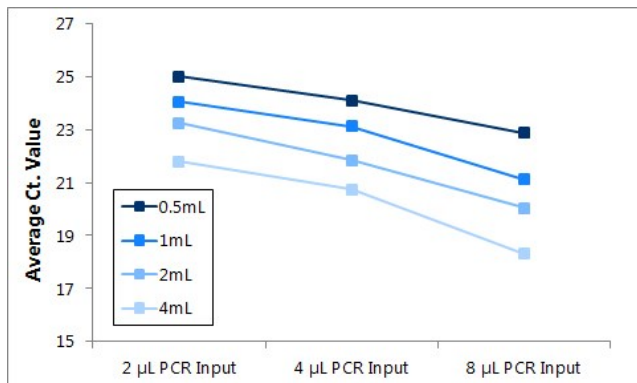
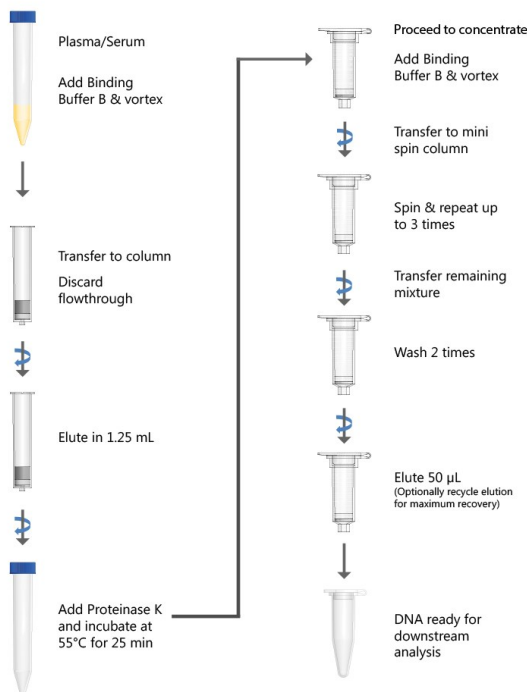


Figure 3. Determination of the amount of inhibition present in plasma cell-free circulating DNA samples when detecting the human 5S gene. DNA was isolated from 0.5 mL, 1 mL, 2 mL and 4 mL plasma using Norgen's Plasma/Serum Cell-Free Circulating DNA Purification Midi Kit (Cat# 55600). Increasing volumes 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 in fact 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 Midi Kit

Plasma/Serum Cell-Free Circulating DNA Purification Midi Kit (Cat.#55600)

1-4 mL of plasma/serum processed in a simple two-column procedure to concentrate into 50 µL



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

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

| Cat # | Description | Quantity |
|-------|--|----------|
| 55600 | Plasma/Serum Cell-Free Circulating DNA Purification Midi Kit | 20 preps |