

Plasma/Serum Circulating Nucleic Acid Purification Kit

Norgen's Plasma/Serum Circulating Nucleic Acid Purification Kit (Slurry Format) provides a fast, reliable and simple procedure for isolating circulating nucleic acids from various amounts of plasma/serum ranging from 1 mL to 5 mL. Free-circulating nucleic acids in plasma and serum have the potential to provide biomarkers for certain cancers and disease states, and include tumor-specific extracellular DNA fragments and mRNA in the blood, and fetal DNA in maternal blood. These free-circulating nucleic acids are usually present as short fragments of less than 1000 bp (DNA) or less than 1000 nt (RNA). Furthermore, free-circulating miRNA (21nt) can also be found in plasma and serum.



Norgen's Plasma/Serum Circulating Nucleic Acid Purification Kit (Slurry Format) provides an efficient method for the purification of these fragmented free-circulating nucleic acids. Purification is based on the use of Norgen's proprietary resin as the separation matrix. The kit is able to isolate all sizes of circulating DNA and RNA, including microRNA. The slurry format provides an advantage over other available kits in that it does not require extension tubes for the purification of free-circulating nucleic acids from large sample volumes. Nucleic acids can be isolated from either fresh or frozen samples using this kit. The kit also offers a flexible elution volume between 50 μ L to 200 μ L, which allows for the concentration of nucleic acids that are present in low concentrations (1-100ng/mL circulating nucleic acids in human plasma). The purified free-circulating nucleic acids are eluted in an elution solution that is compatible with PCR, qPCR, methylation-sensitive PCR, Southern Blot analysis, real time PCR, reverse transcription PCR, Northern blotting, RNase protection and primer extension, and expression array assays.

Kit Specifications			
Minimum Plasma/Serum Input	1 mL	Minimum Elution Volume	50 μ L
Maximum Plasma/Serum Input	5 mL	Maximum Elution Volume	200 μ L
Time to Complete Purification	< 30 minutes	Size of Nucleic Acids Purified	All sizes, including microRNA

Plasma/Serum Circulating Nucleic Acid Purification Kit Benefits

Isolate all sizes of circulating nucleic acids	The kit allows for the isolation of all sizes of fragmented circulating RNA and DNA, including microRNA.
Fast and easy processing	Rapid slurry-based format allows for the processing of multiple samples in 30 minutes.
Versatile plasma and serum input volume	Isolate circulating nucleic acids from 1 - 5 mL of plasma and serum samples. No requirement for extension tubes when processing larger sample volumes.
Concentrate circulating nucleic acids	Nucleic acids present in input volumes of 1 - 5 mL are concentrated into final elution volumes of 50 - 200 μ L.
Isolate inhibitor-free nucleic acids	Purified DNA and RNA can be used in a number of sensitive downstream applications including PCR, qPCR, methylation-sensitive PCR, Southern Blot analysis, real time PCR, reverse transcription PCR, Northern blotting, RNase protection and primer extension, and expression array assays.

Plasma/Serum Circulating Nucleic Acid Purification Kit

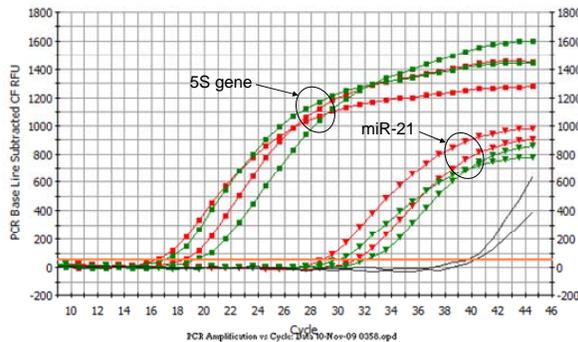


Figure 1. Isolation and Detection of Circulating RNA from 1 mL Samples of Serum and Plasma

Norgen's Plasma/Serum Circulating NA Purification Kit was used to isolate circulating RNA from 1 mL samples of serum and plasma. Five microlitres of the purified RNA was then used as the template in RT-qPCR reactions to detect the human 5S gene and the miR-21 gene. Both the 5S housekeeping gene and the miR-21 gene could be detected from plasma (red) and serum (green), indicating the high quality of the purified RNA. The black line corresponds to the no template control.

Plasma/Serum Circulating NA Kit Contents:

1. DNA Binding Solution I
2. Proteinase K
3. Pronase
4. DNA Binding Solution II
5. DNA Wash Solution I
6. DNA Wash Solution II
7. DNA Elution Buffer
8. RNA Lysis Solution
9. RNA Wash Solution
10. RNA Elution Solution
11. Mini Filter Spin Columns
12. Collection Tubes
13. Elution Tubes
14. Product Insert

Shipping Conditions

The Plasma/Serum Circulating NA Purification Kit is shipped at room temperature.

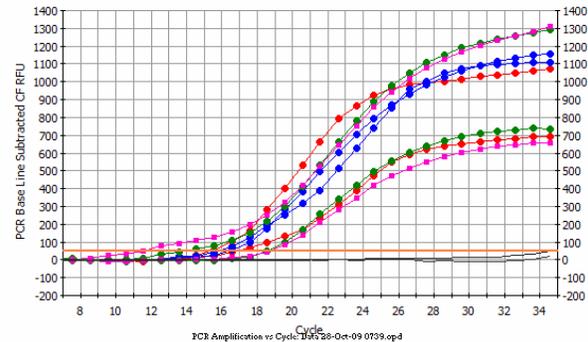


Figure 2. Isolation and Detection of Circulating DNA from 1 mL Samples of Serum and Plasma

Norgen's Plasma/Serum Circulating NA Purification Kit was used to isolate circulating DNA from 1 mL samples of serum and plasma. Five microlitres of the purified DNA was then used as the template in qPCR reactions to detect the human 5S and S15 housekeeping genes. The 5S gene could be detected from both the serum sample (green) and the plasma sample (pink), and the S15 gene could be detected from the serum sample (blue) and the plasma sample (red), indicating the successful isolation of the circulating DNA. The black line is the non template control.

Customer-Supplied Reagents and Equipment

- Swinging bucket centrifuge
- Benchtop microcentrifuge
- 96-100% ethanol
- 60°C incubator
- β - Mercaptoethanol
- 15 mL tubes

Storage Conditions

All solutions should be kept tightly sealed and stored at room temperature. These reagents should remain stable for 1 year in their unopened containers. The Proteinase K and Pronase can be stored at room temperature for up to 1 year, but to prolong the life of these reagents storage at 2-8°C is recommended.

Cat #	Description	Quantity
27800	Plasma / Serum Circulating Nucleic Acids Purification Kit	25 preps