Purilogics™
By Donaldson

Purexa™ NAEX Plus

Membrane Chromatography Products

for Supercoiled pDNA Capture

Purexa™ NAEX Plus is a novel weak anion-exchange membrane chromatography product with high binding capacity and high recovery of plasmid DNA.

How Purexa membrane chromatography works

The proprietary structure of tertiary amine ligands on NAEX Plus membrane binds plasmid DNA at selected buffer conditions. Then the DNA is released using high conductivity conditions. End users can vary buffer conditions (e.g. conductivity, pH, or buffer/salt types) to allow the membrane to bind plasmid DNA instead of RNA to achieve high purity. The membrane also has 3 µm pores allowing purification of a wide range of plasmid DNA constructs.

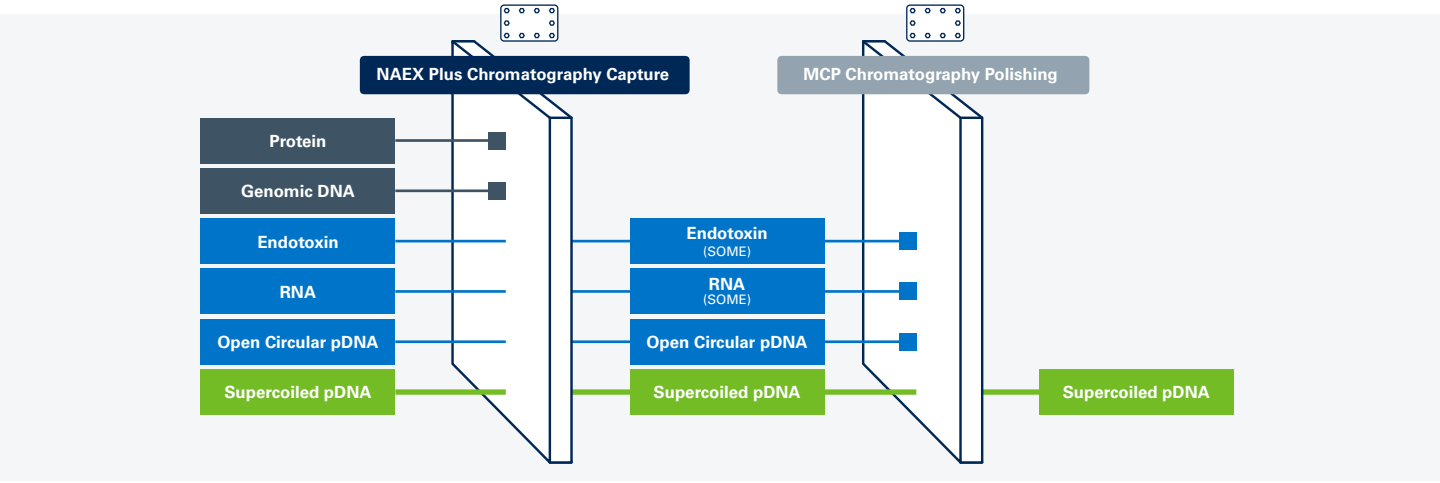
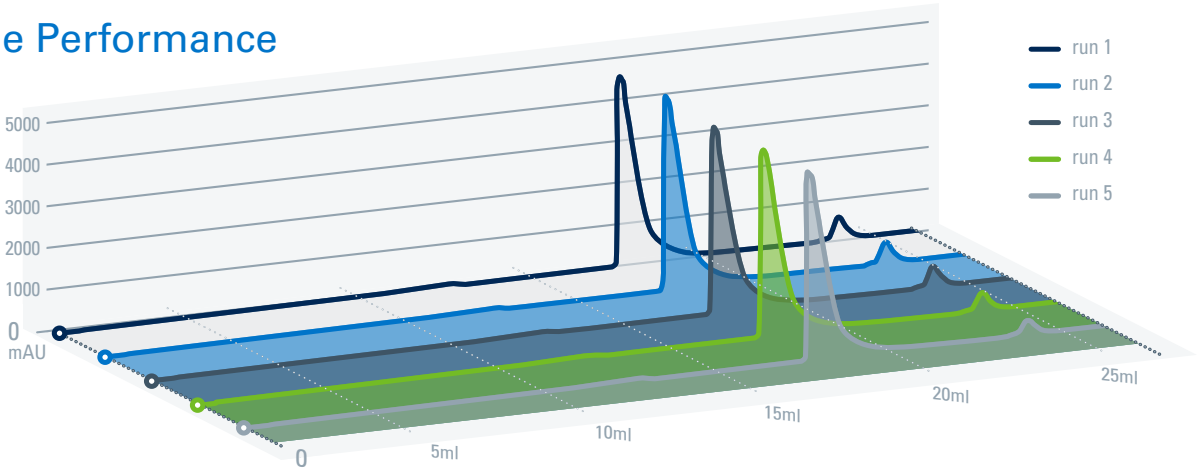


Figure 1. The plasmid DNA purification process using Purexa™ NAEX Plus. | *for pDNA it is recommended to use Purexa™ MCP as the capture step following Purexa™ NAEX Plus

Consistent Cycle Performance

Figure 2. Purexa™ NAEX Plus can be reused over multiple cycles.



Buffer Condition:
1M NaOH + 2M NaCl

Testing Agent:
0.1 mg/mL salmon sperm DNA

Performance Advantages of Purexa™ NAEX Plus

Purexa™ NAEX Plus membrane chromatography utilizes its positively charged surface to achieve high dynamic binding capacity of the target molecule. pDNA at a high conductivity have shown impressive recovery during the purification process while successfully removing unwanted impurities.

+ Fast cycle times
+ Easy setup and breakdown
+ High throughput pDNA purification
+ Can be adapted for purifying viral vectors, vaccines, DNA, and proteins

Consistent performance across flow rates

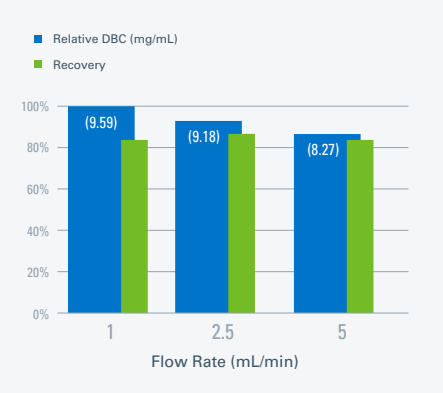


Figure 1. DBC and Recovery data was collected by utilizing Purexa™ NAEX Plus Maxi with columns at multiple flow rates, 11kbp pDNA ran with K Acetate as loading buffer.

Consistent performance across plasmid DNA sizes

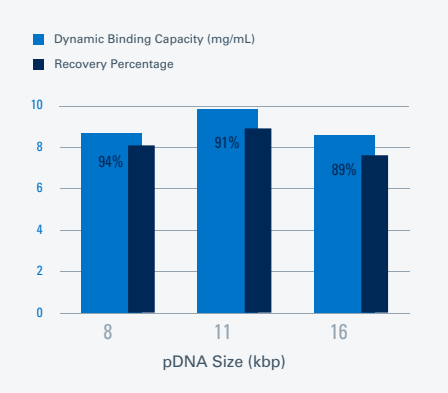


Figure 2. pDNA sizes were tested with Purexa™ NAEX Plus Maxi with K Acetate loading buffer.

Consistent performance across multiple cycles

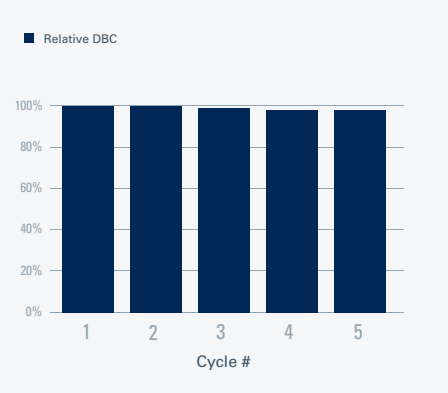


Figure 3. A Purexa™ NAEX Plus Maxi column was reused five times with a proper CIP cycle between runs to show consistent pDNA binding

Purexa NAEX Plus	Volume	Suggested Flow Rate	Typical pDNA Binding Capacity at high conductivity*
Column	Maxi: 0.22 mL	2-10 mL/min	1.7 mg/cycle
Cassette	2 ml	2-20 mL/min	16 mg/cycle
	10 ml	10-100 mL/min	80 mg/cycle
Well Plate	24 Well Plate (10 mL holding volume)	1-2 bar operating pressure	400 µg per well

Loading Buffer: 1M K Acetate, pH 5.5; conductivity ~70 mS/cm | **Elution buffer:** 20 mM Trisbase, 1.5 M NaCl, pH 7.0 | * Lower conductivity can lead to higher binding capacity.

Interested in purification solutions for mRNA, pDNA, proteins, antibodies, and more?

Contact us at purilogicsinfo@donaldson.com

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