Bioanalysis

MACHEREY-NAGEL

Automated Plasmid Midi Prep

NucleoBond® Xtra Midi / Xtra Midi EF automated on Andrew+

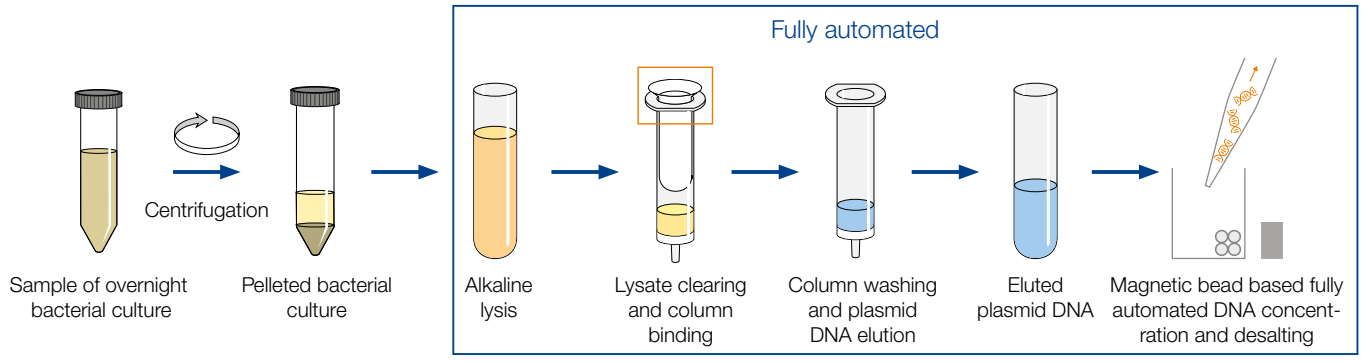
Free-up your labtime for doing actual science!

- Up to 6 NucleoBond® Xtra Midi and NucleoBond® Xtra Midi EF preps in parallel
- High reproducibility and reliability
- Desalting and concentration with NucleoMag® beads

Automated NucleoBond® Xtra Midi and NucleoBond® Xtra Midi EF

MN and Andrew Alliance – combined expertise

With our long standing experience in chromatography and nucleic acid purification, MACHEREY-NAGEL is an ideal choice for high quality plasmid preps. We have joined forces with Andrew Alliance, an expert in matters of lab automation, liquid handlers and smart lab software.Together we have developed the hardware and protocols for easy automation of up to 6 plasmid midi preps in parallel, providing you with an option for avoiding the tedious procedure of manual plasmid purification.



Labor saving procedure with Andrew+

The automated workflow of the MN NucleoBond® Xtra Midi and NucleoBond® Xtra Midi EF kits on the Andrew+ liquid handler dramatically reduces the hands-on time needed for a plasmid midi prep. The Andrew+ robot equipped with the appropriate holders (DOMINO™) performs all steps, from lysate clarification to elution and concentration of pure plasmid DNA, freeing up your valuable time for doing actual science. Andrew+ empowers scientists to get reproducible data – and the accompanying software, OneLab, offers the most intuitive solution for protocol design and experiment traceability. Andrew+ provides a seamless transition from time-consuming manual pipetting to error-free and easily programmable robotics. New or updated protocols for Andrew+ are available for download in the OneLab library.

NucleoBond® Xtra Midi and NucleoBond® Xtra Midi EF – Unmatched performance, now automated on Andrew+

An ever-growing range of biochemical applications require medium to large amounts of plasmid DNA free of contamination with salts and residual bacterial components. With NucleoBond® Xtra yields of up to 500 µg of ultrapure plasmid DNA can be obtained based on reliable and well established anion exchange chromatography. The NucleoBond® Xtra Midi EF kit has a patented endotoxin removal which allows transfection of highly sensitive cells such as primary cells or stem cells. NucleoBond® Xtra Midi kits contain enlarged columns, which lead to lower silica resin beds. This in turn enables faster flow of lysate and buffers through the columns. Specially designed column filters are included for convenient and timesaving clarification of bacterial lysates. The column filters are supplied inserted in the NucleoBond® Xtra Columns and allow parallel clarification of bacterial lysate and loading onto the column. Their large, structured surface leads to high filter flow rates and minimized risk of clogging.

Product at a glance

	NucleoBond® Xtra Midi	NucleoBond® Xtra Midi EF
Technology	Anion exchange chromatography	Anion exchange chromatography
Sample material	< 200 mL bacterial culture (high copy plasmid)	< 200 mL bacterial culture (high copy)
Vector size	< 300 kbp	< 300 kbp
Theoretical binding capacity	1000 µg	1000 µg
Typical yield	Up to 500 µg	Up to 500 µg
Endotoxin level	**1–10 EU/µg DNA**	**≤ 0.05 EU/µg DNA**
$A_{260/280}$	1.80–2.00	1.80–2.00
$A_{260/230}$	> 2.0	> 2.0

Automated NucleoBond® Xtra Midi and NucleoBond® Xtra Midi EF

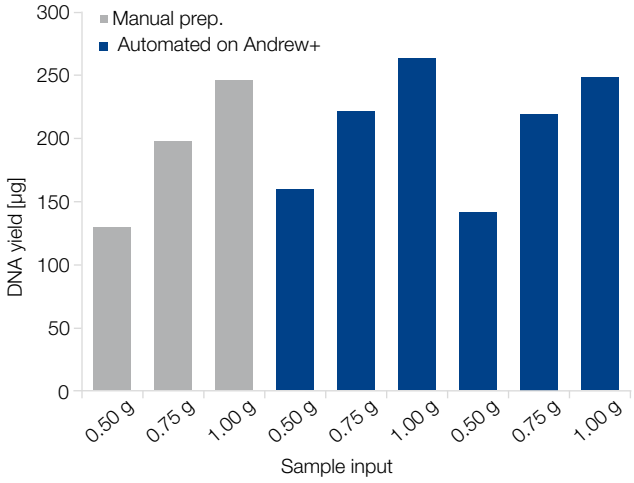
Andrew+ configuration for automated NucleoBond® Xtra Midi protocol (6 preps)

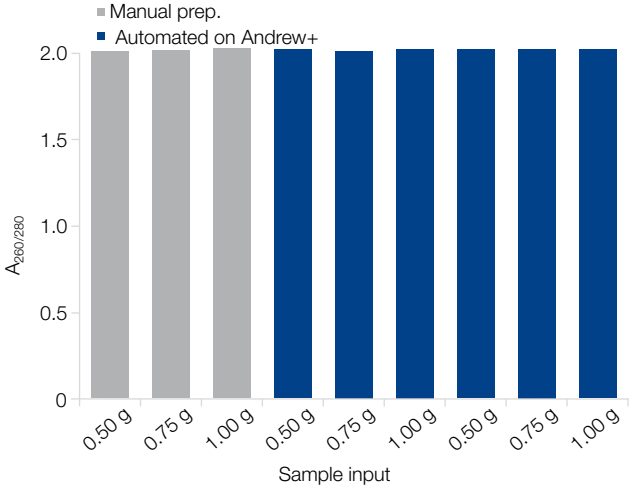
Position	Andrew+ connected devices
1	Tip Rack Holder 10 mL
2, 3	Tip Rack Holder 5 mL
4	Microtube domino
5, 6, 7	50 mL conical centrifuge tube domino
8, 11	Magnet+
9, 10	NucleoBond® Xtra Midi column domino

Reliably high quality with NucleoBond® Xtra Midi - Application data

NucleoBond® Xtra Midi and the Andrew+ combine the high purity and reliability of anion-exchange technology with the user friendliness of a fully automated system.

NucleoBond® Xtra Midi delivers a reliable yield over a span of sample amounts and is therefore ideally suited for obtaining large amounts of pure plasmid DNA suitable for transfection and in vivo experiments.





Excelling plasmid yield and purity – manual or automated preparation

Different amounts of *E. coli* culture pellets expressing a high copy plasmid were subjected to the NucleoBond® Xtra Midi procedure, manually (one set of samples) or automated on the Andrew+ robot (two sets of samples). The workflow includes automated desalting and concentration of plasmid DNA with NucleoMag® Desalting Beads. Both the manual preps and the automtated preps deliver excellent results regarding plasmid conformation, yield and purity (A260/280).

Automated NucleoBond® Xtra Midi and NucleoBond® Xtra Midi EF

Plasmid DNA free of contamination – NucleoBond® Xtra Midi EF

Pure plasmid DNA free of residual bacterial components is required for many applications. DNA purity is especially critical in experiments involving mammalian cell transfection. A particular challenge in such procedures are endotoxins – residual components of bacterial cell walls that can trigger an inflammatory response and dramatically decrease the efficiency of transfection in addition to distorting any results obtained from such experiments. NucleoBond® Xtra kits reliably deliver transfection grade DNA. The level of endotoxins is further reduced with the endotoxin-free (EF) version of the kit.

Processing	EU/µg plasmid DNA	A_{260}/A_{280}	A_{260}/A_{230}
Automated (Andrew+)	0.019 ± 0.002	1.95 ± 0.01	2.22 ± 0.02
Manual	0.006 ± 0.001	2.02 ± 0.01	2.43 ± 0.04

Table 1: Endotoxin-contents (e. g. endotoxin-units: EU) of purified Plasmid-DNA were determined using a LAL-test resulting into a comparable performance between automated (n = 5) and manual processing (n = 2). Plasmid DNA was isolated from individual *E. coli* cell pellets carrying the plasmid pCDNA3.1 using the NucleoBond® Xtra Midi EF kit. The purity was determined both by UV-spectrometry.

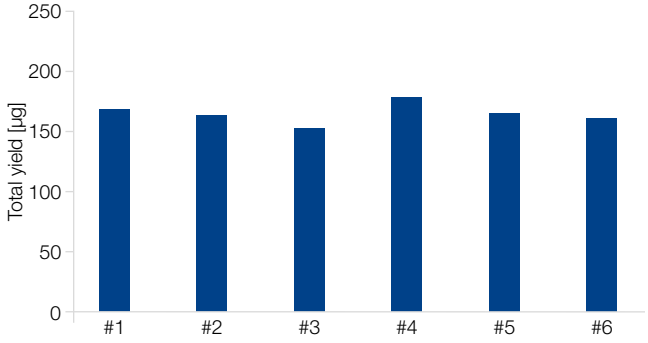


Figure 1: Plasmid DNA was isolated from 6 individual *E. coli* cell pellets carrying the plasmid pCDNA3.1 using the NucleoBond® Xtra Midi EF procedure on the Andrew+ system. The total yield was determined by UV spectrometry (dark blue bars).

Want to schedule an e-demo?
Need additional information?
Contact the MN technical support!
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MACHEREY-NAGEL
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Andrew Alliance
A WATERS COMPANY

Ordering information

Product	Specifications	Preps	REF
NucleoBond® Xtra Maxi EF	Anion-exchange plasmid midi kit for endotoxin-free DNA, ontains NucleoBond® Xtra Midi Columns with inserted Filters, buffers, RNase A	10 50	740420.10 740420.50
NucleoBond® Xtra Midi	Anion-exchange plasmid midi prep; contains NucleoBond® Xtra Midi Columns with inserted Filters, buffers, RNase A	10 50 100	740410.10 740410.50 740410.100
NucleoMag® Desalting Beads	Magnetic beads for desalting of anion exchange plasmid preparation eluates (e. g. NucleoBond® Xtra Midi); contains NucleoMag® beads, Elution Buffer TRIS	50 (scalable)	744410.50

www.mn-net.com

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