

# Aurora - Nucleic Acid Extraction

**A revolutionary platform for nucleic acid extraction from the most challenging samples based on our powerful electrophoretic technology.**

Boreal Genomics' Aurora nucleic acid extraction system allows researchers to recover high purity nucleic acids from heavily inhibited and extremely low abundance samples, eliminating issues of low yield, persistent PCR inhibition, or limitations in high molecular weight DNA recovery.

**The Aurora system uniquely provides:**

- Unparalleled nucleic acid purity
- The highest yield from low abundance samples
- Extraction of intact DNA molecules from 100kb to over 1Mb
- *New* convenient reusable agarose gel cartridges



## System overview

### Electrophoretic purification

The Aurora system incorporates our proprietary SCODA electrophoretic purification technology to simultaneously purify and concentrate nucleic acids.

SCODA purification operates on the unique physical properties of nucleic acids and is consequently able to efficiently remove contaminants that co-extract in conventional solid-phase purification kits.

### Low biomass and heavily inhibited samples

The Aurora enables you to extract nucleic acids from up to 5 mL of dilute lysate or eluates, achieving exceptional recovery of trace nucleic acids from low biomass samples including sediments, soils, tundra, and water samples.

The Aurora also allows clean-up of contaminated eluates from commercial kits, rescuing previously unusable samples, and integrating seamlessly into existing workflows.

### High molecular weight DNA extraction

The Aurora concentrates and purifies nucleic acids in a non-mechanical process enabling recovery of intact DNA over 1 Mb directly from environmental samples, cell extracts, or agarose including PFGE plugs.

Extracted DNA can be provided either in buffer or gel plug for subsequent cloning, archiving, optical mapping or other genetic analysis including PCR and sequencing.

### Simple workflow

- Minimal sample handling including lysis and optional desalting simplifies your existing processes – load sample and the Aurora automates nucleic acid extraction
- Reusable agarose gel cartridges allow up to 5 mL of sample input, providing the output in 60 uL of buffer
- Typical run times of 2 - 4 hours, depending on amount of purification required

## Instrument specification

The complete Aurora system comprises the instrument, an external chiller, and laptop all provided by Boreal Genomics.

### Instrument

Weight	46 lbs	21 kg
Dimensions	20" H x 11" W x 15" D	50 cm x 28 cm x 38 cm
Power Requirement	120-240 VAC, 450 W, 50-60 Hz	

### Chiller

Weight	28 lbs	12.7 kg
Dimensions	13" H x 11" W x 13" D	33 cm x 28 cm x 33 cm
Power Requirement	120-240 VAC, 700 W, 50-60 Hz	

### Laptop

Weight	3.3 lbs	1.5 kg
Dimensions	10" H x 12" W x 10" D	25 cm x 30 cm x 25 cm
Power Requirement	120-240 VAC, 180 W, 50-60 Hz	

### Cartridge

Dimensions	Microtiter plate footprint
Input Volume	5 mL
Maximum Sample Salinity	<200 uS/cm
DNA/RNA Capacity	40 ug
Output Volume	60 uL
Buffer	0.25x TBE (400 uS/cm), pH 6-8

### Instrument Performance

Run Time	2 - 4 hours with sample salinity <100 uS/cm, 0.25x TBE buffer
Yield	>60% of available nucleic acids within size range
DNA/RNA Fragment Size	>500 nt RNA, 300 bp – 50 kb DNA, extendable up to 1Mb <sup>1</sup>
Contaminant Rejection	10-50,000X <sup>2</sup>
Output Volume	60 uL

<sup>1</sup> High Molecular Weight DNA above 50 kb can be recovered with longer run times, up to 48 hrs for 1 Mb DNA.

<sup>2</sup> Contaminant rejection is specified as fold-increase in the ratio of DNA to contaminant concentration. Data quoted is measured with respect to humic acids and range corresponds to run time.

#### To learn more

Visit [www.borealgenomics.com](http://www.borealgenomics.com)

For system pricing and availability contact [sales@borealgenomics.com](mailto:sales@borealgenomics.com) or (650) 316-8620