



ILLUMINATING SOLUTIONS

# ADNAP 20 SERIES

## NUCLEIC ACID EXTRACTION SYSTEM

- Increase throughput and speed
- Minimize contamination with disposable tip comb
- Ensure sample integrity-the beads move, not the samples!



ADNap 20 is a fully automated bench top system for high-throughput extraction of nucleic acids from a variety of sources. The system relies on an automated 96-channel magnetic head for reliable and rapid extraction of high-quality nucleic acids. Like all of Aurora's liquid handlers, this system is open and flexible.

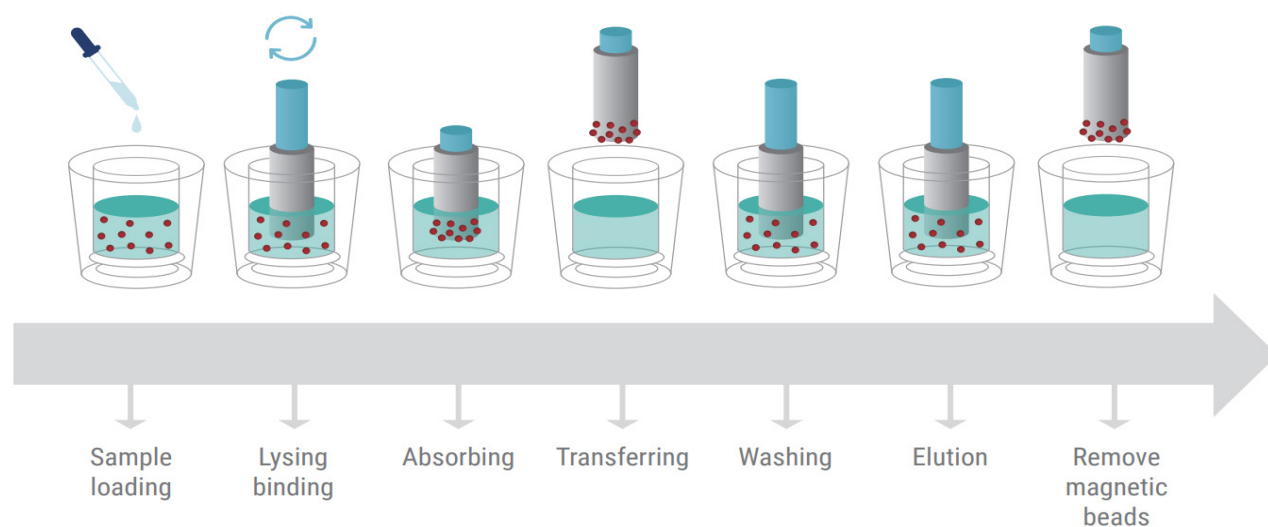
## How does it work?

The system relies on an automated 96-channel magnetic head for reliable and rapid extraction of high-quality nucleic acids. ADNap 20 uses a 96-channel head of magnetic bars combined with disposable tip combs to mix and transfer magnetic beads. As the magnetic bars move up and down, reagents and beads are mixed following lysis. Once the magnetic beads collect at the bottom of the tip comb (that surrounds the magnetic rods) the magnetic head moves to a different plate and the beads are released into the new plate by moving the magnetic head.

ADNap 20 is a fully automated and versatile bench top system for high-throughput extraction of nucleic acids from a variety of sources including blood, saliva, and nasopharyngeal/nasal/oropharyngeal swab specimens.

## Features

- **High-throughput automation**  
Automated nucleic acid extraction allowing rapid processing of multiple samples, saving time and labor
- **User-Friendly interface**  
Easy to operate with a user-friendly display panel showing run parameters
- **Customization of protocols**  
Users can create, modify or edit programs as needed using the touch-screen interface
- **Reduces risk of contamination**  
Disposable extraction tubes, magnetic bar tip comb and UV lamp minimizes the risk of contamination.
- **Open system**  
Customizable with most magnetic bead based extraction kits available in the market



**FIGURE 1.** Workflow of magnetic bead based nucleic acid purification

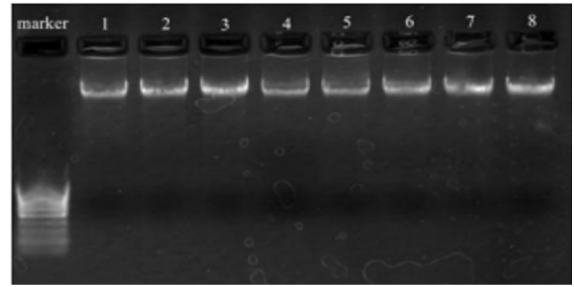
## Validation

Positive COVID-19 samples were extracted by three different methods (reagents), and the positivity detection rates were compared. Saliva samples were diluted with normal saline at 1:9 dilution and made up to 50 and 30 copies/mL of the viral culture.

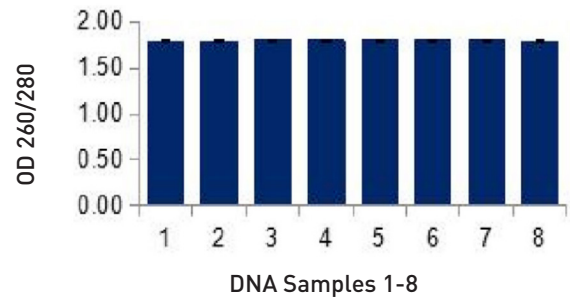
COVID-19 viral target gene sequence		Orf1ab	N
50 copies/mL	Detection rate	100%	100%
	Positive rate	100%	
30 copies/mL	Detection rate	95%	80%
	Positive rate	95%	



Gel electrophoresis and nanodrop readings of DNA extracted from whole blood



**FIGURE 2.** Agarose gel electrophoresis of gDNA samples from blood shows high yield of genomic DNA using ADNap 20. The bands are clear with-out smearing indicating pure and undegraded gDNA



**FIGURE 3.** Nanodrop readings of DNA extracted from whole blood. The readings are around the 1.8 value indicating pure gDNA

## Typical extraction workflow on the ADNap 20

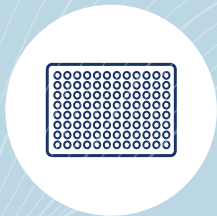


Plate prep  
~15 min



Program  
selection 1 min

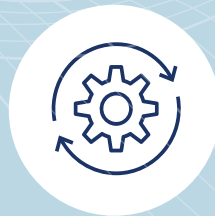


Plate loading  
1 min



Start run



Run time  
15-30 min

## Technical Specifications

MODELS	ADNAP 20 (96)	ADNAP 20 (32)	ADNAP 20 (16)
Samples per run	96	32	16
Processing volume	20-1000 µL	30-1000 µL	30-1000 µL
Sample volume	≤500 µL	≤500 µL	≤500 µL
Deep well disc	96 well	96 well	96 well
Magnetic rods	96 pieces	32 pieces	16 pieces
Consumables	SBS Standard 2.2mL Square 96-deep well plate + 96 Tip comb	SBS Standard 2.2mL Square 96-deep well plate + 96 Tip comb	SBS Standard 2.2mL Square 96-deep well plate + 96 Tip comb
Purification sensitivity	>95% positivity detection at 100 copies/mL sample	>95% positivity detection at 100 copies/mL sample	>95% positivity detection at 100 copies/mL sample
CV	<1%	<3%	<3%
Heating blocks	up to 90°C	up to 120°C	up to 120°C
Mixing	speed adjustable	speed adjustable	speed adjustable
Processed bead size	>100nm	>100nm	>100nm
Reagent type	Magnetic bead-based reagents	Magnetic bead-based reagents	Magnetic bead-based reagents
Operation interface	7-inch touch screen display	10-inch touch screen display	7-inch touch screen display
Internal procedure	It can store more than 1000 programs, and each program can store more than 1000 steps	It can store more than 1000 programs, and each program can store more than 1000 steps	It can store more than 1000 programs, and each program can store more than 1000 steps
Program management	Create, edit, delete, copy programs using touch screen display	Create, edit, delete, copy programs using touch screen display	Create, edit, delete, copy programs using touch screen display
UV light	Yes	Yes	Yes
Exhaust mode	Negative pressure	Negative pressure	Negative pressure
Run time	15-30 minutes/run (time depends on specific kits/reagents used)	15-30 minutes/run (time depends on specific kits/reagents used)	15-30 minutes/run (time depends on specific kits/reagents used)
Weight	55 Kg	35 Kg	12 Kg
Dimension (L * W * H)	60 cm x 50 cm x 50 cm	40 cm x 40 cm x 45 cm	25 cm x 32 cm x 27.5 cm

