Nucleic Acid Extraction System

LText1

User Manual

Version: 1.0

For Research Use Only. Not for use in diagnostic purpose.

Please read this manual carefully before using the instrument and fully understand the precautions.

CONTENTS

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SAFETY INFORMATION

- Please read and fully understand the following safety precautions.
- Please operate the instrument strictly in accordance with the operating instructions of this user manual to ensure safety.
- The safety instructions in the user manual are explained. The operations or matters shown in "***WARNING***","***CAUTION***"and "***NOTE***"may cause danger or problems to the experiment, so be sure to pay attention to the operations.
- Please do not operate the instrument in any manner that is not instructed or described in the operation manual. If you have any problems with use, please contact the supplier.
- The descriptions in this manual try to cover all possible operational risk indications. But beware of the unexpected. Please proceed with caution.

WARNING

- *Never operate the instrument without the ground connected.*
- *End users are not allowed to disassemble the plastic casing of the instrument, replace components or adjust the instrument, and it is strictly forbidden to disassemble the instrument under power-on conditions. If necessary, please contact professional after-sales engineers for instrument maintenance and repair.*
- *The instrument should be installed in a place with low humidity, less dust and away from water sources (pools, water pipes, etc.). The laboratory should be well ventilated and free from corrosive gases or strong magnetic fields. The workbench or laboratory table on which the instrument is placed should be stable.*
- *When the instrument is not in use for a long time, please cut off the power.*

CAUTION

*This **CAUTION** indicates that any operation or use, if not strictly followed by the user manual, may result in damage of the instrument or wrong results.*

If the following situations occur, please cut off the power immediately, unplug the power cord, and contact the Service Support of supplier:

- *Liquid spilled/dropped into instrument.*
- *The instrument has been accidentally dropped or the casing has been damaged.*
- *Consumables, reagents and other waste used in the experiment should be properly disposed of in accordance with relevant requirements, and should not be discarded or dumped at will.*

- *After the run, the consumables should be removed from the instrument. Consumables should not be left in the instrument for a long time.*

NOTE：

*This **NOTE** indicates a section or content of special concern, emphasizing common errors in the functionality, operation, or maintenance of the product.*

If the following situations occur, please cut off the power immediately, unplug the power cord, and contact the Service Support of supplier:

- *Liquid spilled/dropped into instrument.*
- *Any abnormal sound or smell appears after the instrument is powered on.*
- *The instrument has been accidentally dropped or the casing has been damaged.*
- *Instrument performance has changed significantly.*

CHAPTER1 PRODUCT INTRODUCTION

1.1 Instrument Introduction

1.1.1 Description of the Instrument

The LTex1 nucleic acid extraction system is an automatic extraction method based on magnetic bead adsorption separation. This instrument is a simple, portable, efficient and stable nucleic acid extraction and purification instrument, which can realize rapid and efficient preparation of 1-16 samples at a time. With the corresponding nucleic acid Extraction reagents can automatically purify nucleic acids from animal and plant tissues, whole blood, swabs, viruses, cells and other samples.

1.1.2 Principle

The instrument uses the magnetic bead method for nucleic acid extraction.This method is to transfer magnetic beads between deep-well plates containing specific reagents. The separation of rods and magnetic rod sleeve realize the collection, release, transfer and incubation of magnetic beads. This method has the advantages of high degree automation, fast extraction speed, stable results and easy operation. Using a dedicated 96-well deep-well plate, 1-16 samples can be operated at the same time.

Utilize the magnetic rod to move the magnetic beads adsorbed with nucleic acid to different reagent wells, and then use the magnetic rod sleeve to stir the liquid repeatedly and rapidly to make liquid and magnetic beads evenly mixed. After cell lysis, nucleic acid adsorption, washing and elution, high-purity nucleic acid is obtained.

1.1.3 Specification of the Instrument

Specification	Parameter
Model	LTex1
Sample Capacity	1-16
CV between wells	CV < 3%
Mixing Speed	Adjustable
Magnetic Beads Recovery rate	> 95%
Working Volume	100-1000ul
Sample Elution Volume	50-100ul
Consumables	96-well 2.2mL Deep-well plate, 8-well magnetic rod

	sleeve
Plate Number	1
Temperature Range	Room Temp to 100℃
Reagents	Mangetic Beads method Open platform
Display	5-Inch Touch Screen
Operation Method	Touch Screen or PC software control
Computer Connect Port	RS-485
Data Storage	Built-in SD card
Program Transfer	USB Disk write in
Automation	Can be integrated with robotic arm to realize automatic operation
Pollution Control	HEPA filter and UV light
Protection	Self-test , Over-temperature Protection
Power	AC 100-240V,50/60Hz，100W
Working Environment	15-30℃，≤80%
Dimension	295.5mm*173mm*300mm,6KG

1.1.4 Features of the Instrument

1) Fast: short operation time, as fast as 10 min to complete the nucleic acid extraction operation.

2) Accuracy: Fitted heating module to improve temperature rise speed and temperature accuracy.

3) High efficiency: Using high quality material and process, low loss rate of magnetic beads and high efficiency of magnetic bead recovery.

4) Innovation: uniquely designed magnetic adsorption device compatible with a minimum of 50ul of Elution.

5) Flexible: compact design, flexible application scenarios, magnetic sleeve placed in the deep well plate on the machine, the tray can be controlled in and out of the warehouse, easy to automate the process through robotics.

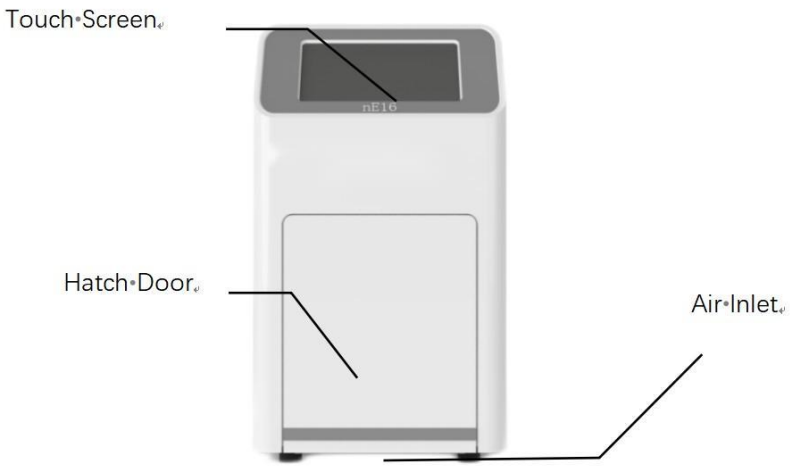
6) Humanized operation: color touch screen, stand-alone independent operation, easy to use.

CHAPTER 2 HARDWARE OF THE INSTRUMENT

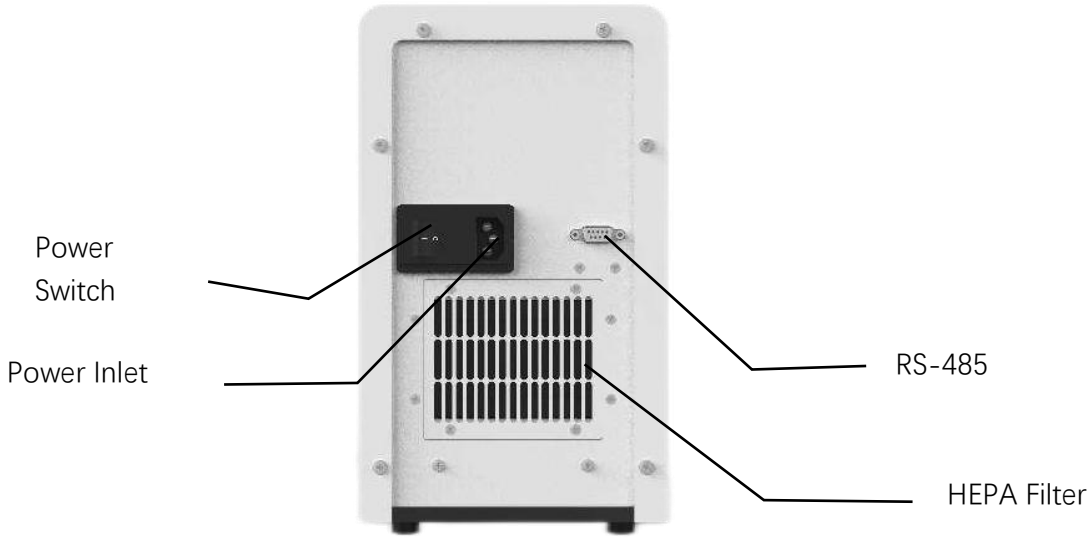
2.1 Overview of the Instrument

2.1.1Front View

NOTE: *The air inlet is under the instrument bottom plate,please do not be block or cover it.*



2.1.2 Back View

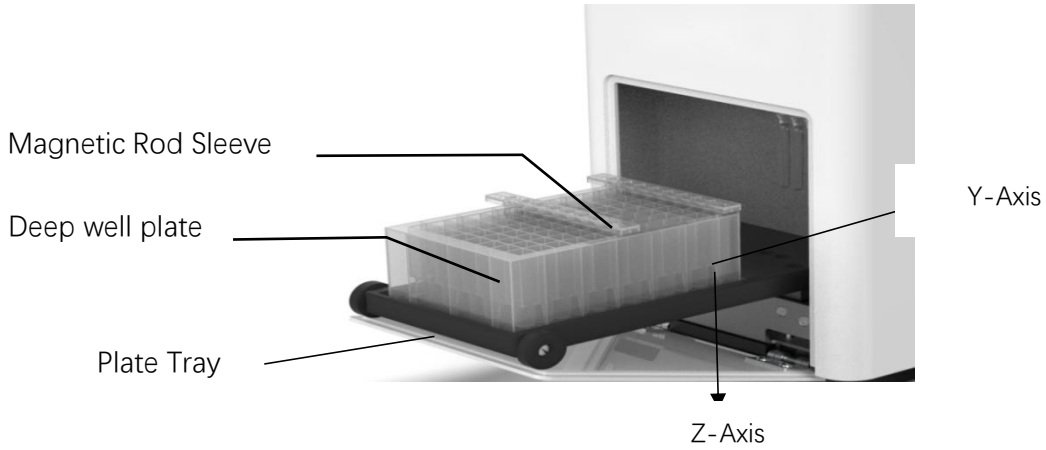


Power Inlet: Connect to 110V~220V power, grounding capability required.

Power Switch: Press “I” for ON, and “O” for OFF.

RS485 Port: Support parallel control of multiple instrument through PC.

2.1.3 Reaction Chamber



Self-locking hatch door,plate in and plate out are automatic controlled by the program which is easily integrated in automation.

2.2 Consumables

2.2ml 96 deep-well plate,V bottom	8-well magnetic rod sleeve
	

Every run needs one piece of 96 deep well plate and maximum two pieces of 8-well magnetic rod sleeve.

During the experiment, the deep-well plate can be driven by the tray in the Y-axis direction, and the lance module with magnetic sleeves and rods can be moved in the Z-axis direction to perform the pick-and-place, mixing and bead transfer operations required for nucleic acid extraction. The lance module consists of two vertically moving platforms, one for controlling the movement of the magnetic rods and the other for controlling the movement of the magnetic sleeves. 2 x 8-linked magnetic sleeves with 1 deep-well plate can support up to 16 samples at a time for nucleic acid extraction.

To prepare the experiment, the sample and reagents are dispensed into a deep well plate with the magnetic sleeve mounted inside the plate, which can be automatically removed by the lance module. During operation, the reaction chamber door must be closed to protect the sample from environmental contaminants.

CHAPTER 3 INSTRUMENT INSTALLATION

The instrument can be installed by end user with basic training, if you encounter problem when install the instrument, please contact supplier for help.

3.1Preparation and Inspection

Please check carefully before unpacking, and pay attention to the following conditions:

1.Deformation of outer packaging or obvious signs of damage.

2.The outer packaging contains obvious traces of water immersion.

3.The outer packaging contains signs that it has been opened.

The box includes below items:

Item	Description	Unit	Quantity
1	Nucleic Acid Extraction System	1	Unit
2	Power Cord	1	Piece
3	Quick Operation Manual	1	Piece
4	Fuse（1A）	2	Piece
5	USB disk (User Manual)	1	Piece
6	Packing List	1	Copy

3.1.1 Appearance Inspection

After unpack the outer box, please inspect the appearance of instrument as following items:

1.The instrument plastic shell has no obvious damage.

2.The visible metal parts of the instrument are free from scratches and rust.

3.The instrument and accessories are not damaged or lost.

CAUTION： If there is damage or item lost, please contact to the supplier and do not install the instrument.

Please keep the original packaging and packaging materials for future transportation. This packaging is designed to ensure safe transportation and reduce damage during transportation. Using alternative packaging materials may not be able to reach the same

goal. At the same time, keep all instrument-related documents provided by the manufacturer for future user use.

3.2 Install the Instrument

3.2.1 Environmental Requirements

Parameters	Specifications
Environment	Indoor use only
Operating altitude	Up to 3,000 meters above sea level
Ambient room temperature	10°C ~ 30°C
Transport and storage temperature	-20°C ~ 60°C
Relative humidity	20% ~ 80%

1.The instrument must be installed on a solid and flat table, and the four corners of the instrument must be in contact with the table.

2.It is strictly forbidden to expose the instrument to direct sunlight.

3.The instrument should be kept away from heat sources and liquids.

4.Keep certain space around the instrument, and the back of the instrument is required to be ≥300mm away from the wall.

CAUTION: Operation of the instrument beyond the environmental conditions described above will not guarantee the reliability of the data. If the temperature and humidity exceed the above ranges, please use indoor air conditioning equipment and avoid direct airflow to the instrument.

3.2.2 Electrical Requirements

1.Power voltage: 100V ~ 220V AC, 50/60Hz.

2.Maximum power usage 100W.

3.Grounding capability required.

WARNING: *Improper grounding may cause electric shock to personnel or damage to the instrument.*

3.2.3 Power On the Instrument

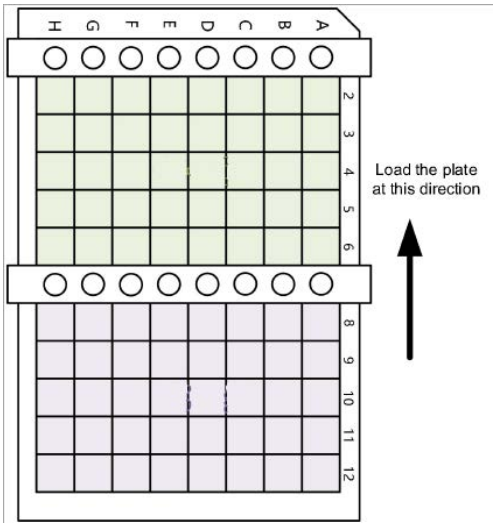
1）Connect the power supply to a properly installed, grounded electrical outlet.

2）Turn on the power switch to “|” end.

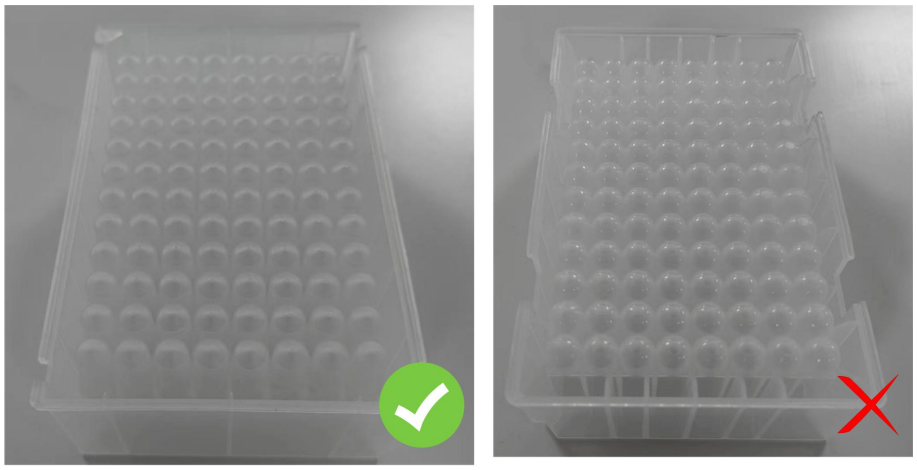
3.2.4 Load the Consumables

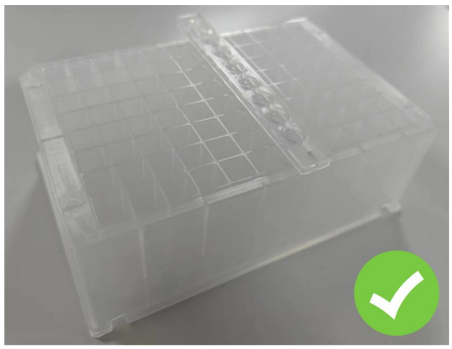
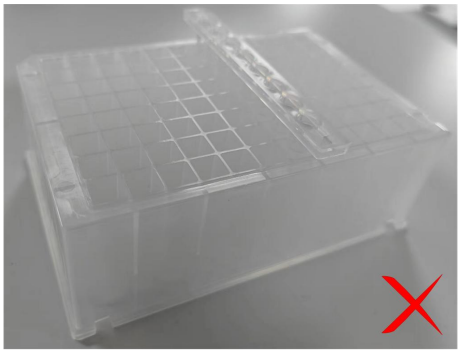
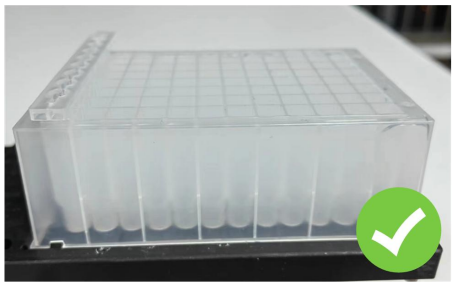
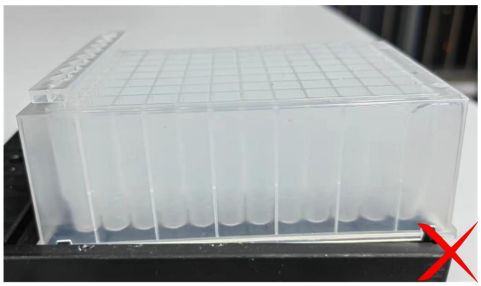
Please use the suitable consumables described in 2.2.

Please follow by below guidance to install the consumables.

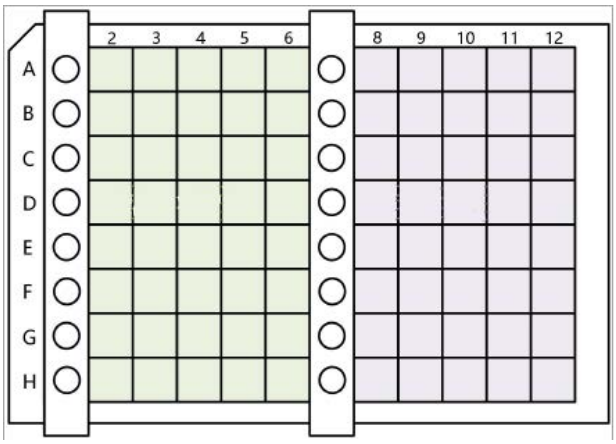
Image	Remark
	Please load the plate according to the direction shown in the left image.

NOTE：

	Only V-bottom 96 deep-well plate can be used, Round-bottom is forbidden.

 	The magnetic rod sleeve must be inserted into the bottom of the plate.
 	Please make sure the deep well plate is well placed in the plate tray.

3.2.5 Add the Reagents



As shown in the figure above, 16 samples extraction can be done in the 96 deep well plate.Column1-6 are for one group- 8samples and column 7-12 are for another group-8 samples .

Beveled end is column 1,the magnetic rod sleeve of two groups sample shall be placed at column 1 and 7. If the sample number are less than 8,either group position can be selected to do the test.

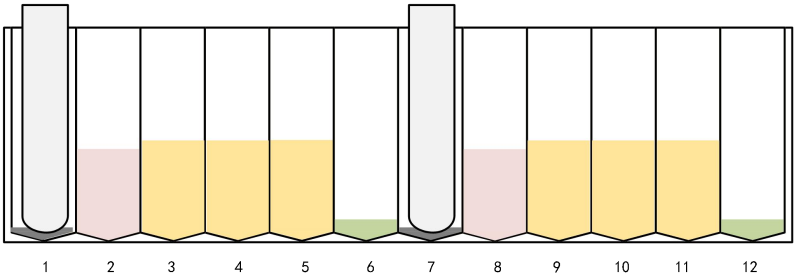
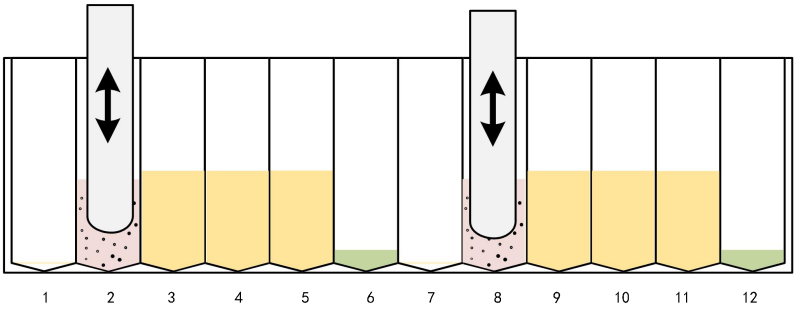
Add the sample in column 2 and 8, please refer to below table for the liquid volume.

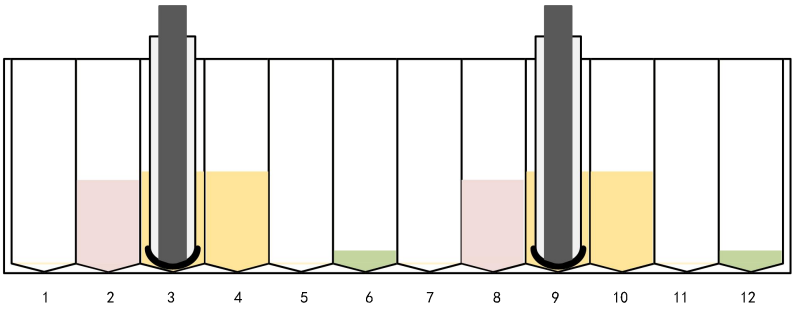
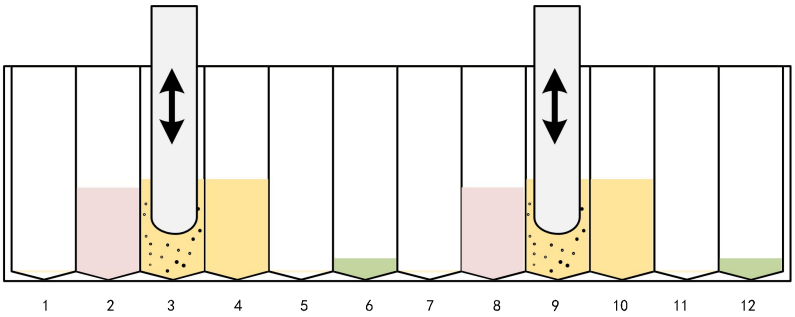
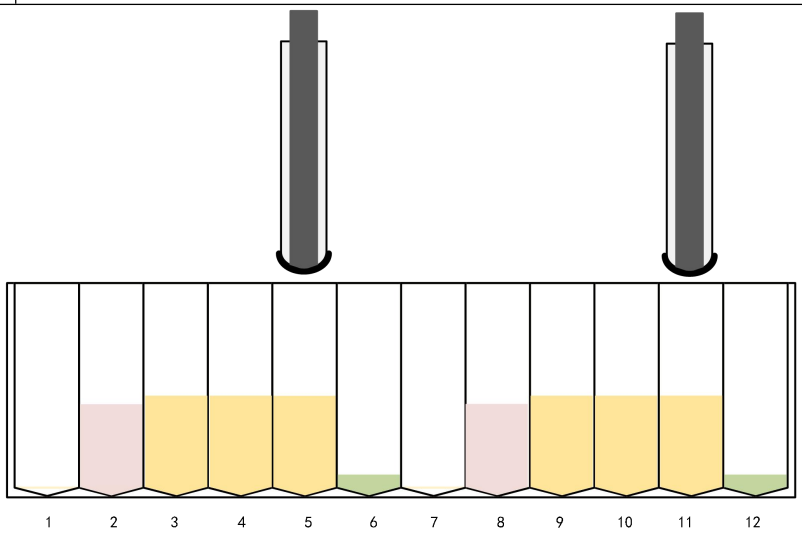
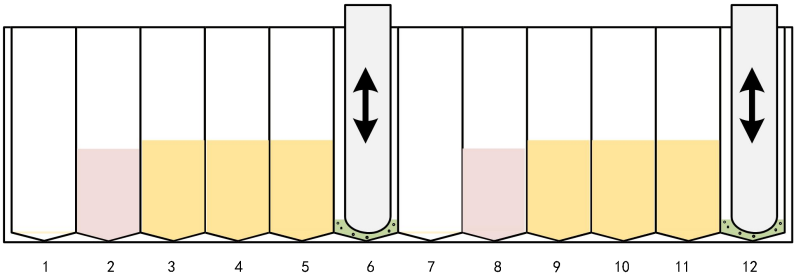
Position/Column	1/7	2/8	3/9	4/10	5/11	6/12
Function	Magnetic Rod	Lysis and	Washing 1	Washing 2	Washing 3	Elution

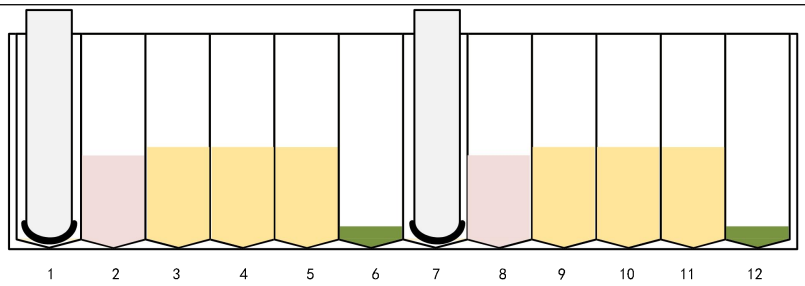
	Sleeve	binding			/beads	
Content	Magnetic Rod Sleeve Magnetic Beads	Lysis Solution Binding Solution Protease k	Washing solution 1	Washing solution 2	Washing solution 3	Eluent
Reagents Volume (ul)	>40	100-1000 (include sample volume)	100-1000	100-1000	100-1000	50-200

NOTE: *Depending on the washing times, magnetic beads position can be adjusted in the program.*

3.2.6 Sample Operation Principle

Item	Step	Operation
		
1	Load the plate	Add sample , reagents and magnetic rod sleeve in the deep well plate and load the plate in the machine.
2	Take magnetic rod sleeve	Pipette head go down to column 1and 7 to take the magnetic rod sleeve.
3	Take magnetic beads	Magnetic rod and sleeve take magnetic beads to column 2/8 for reaction.
		
4	Binding	Magnetic rod hold up, rod sleeve go up and down to mix the reagents,lysis and binding is carried out. The heating module under the plate will heat up to the set temperature.

<table>
<tr><td colspan="3"> 
</td></tr>
<tr><td>5</td><td>Take beads</td><td>Magnetic rod go down to the bottom to take the beads and move the beads in column 2/8 to column 3/9 washing position.</td></tr>
<tr><td colspan="3"> 
</td></tr>
<tr><td>6</td><td>Washing</td><td>Magnetic rod holdup, rod sleeve go up and down to mix the solution and wash the beads..</td></tr>
<tr><td colspan="3"> 
</td></tr>
<tr><td>7</td><td>Drying</td><td>Magnetic rod and rod sleeve rise up, magnetic beads will be held in the air to dry.</td></tr>
<tr><td colspan="3"> 
</td></tr>
<tr><td>8</td><td>Elution</td><td>Move the dried magnetic beads column 6/12 to eluting beads.The heating module under the plate will heat up to the set temperature.</td></tr>
</table>

		
9	Eject rod sleeve	After elution,take the beads in column 6/12, and move to column 1/7 to recover the beads.The purified product are in column 6/12.

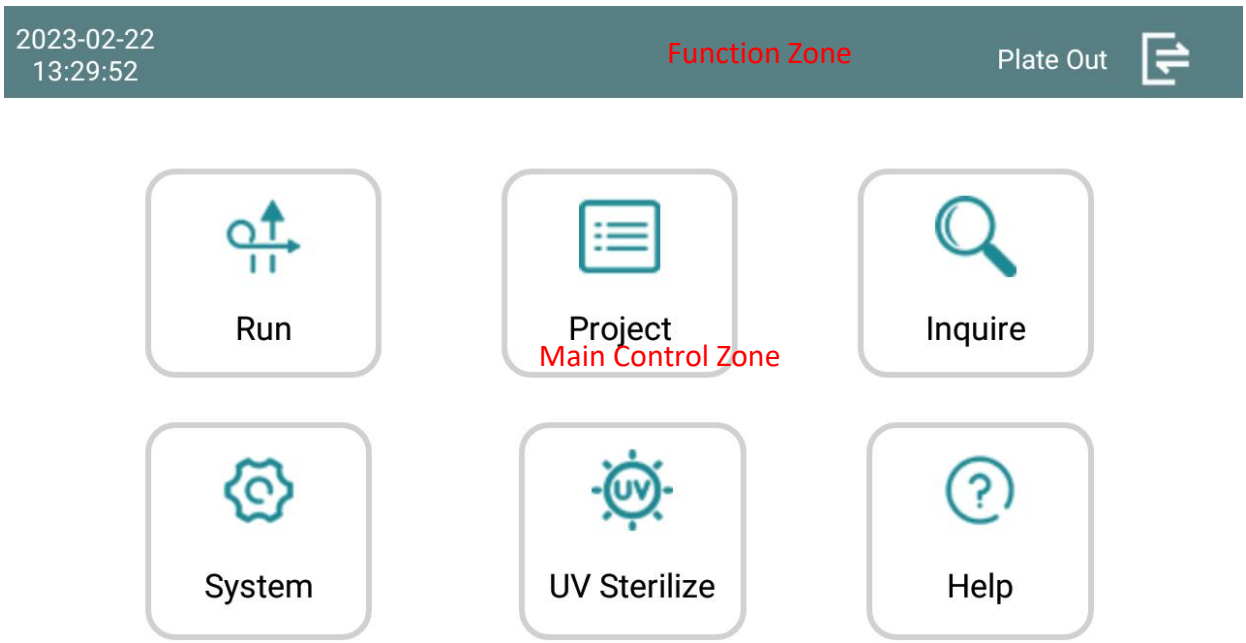
CHAPTER 4 OPERATION INSTRUCTION

4.1 Operation Screen Startup

1.LTex1 Nucleic Acid Extractor will automatically turn on when the power cord is properly connected.

2.When the instrument is turned on, the instrument will first perform a self-test, and enter the main interface after the self-test is finished.

4.2 UI Introduction

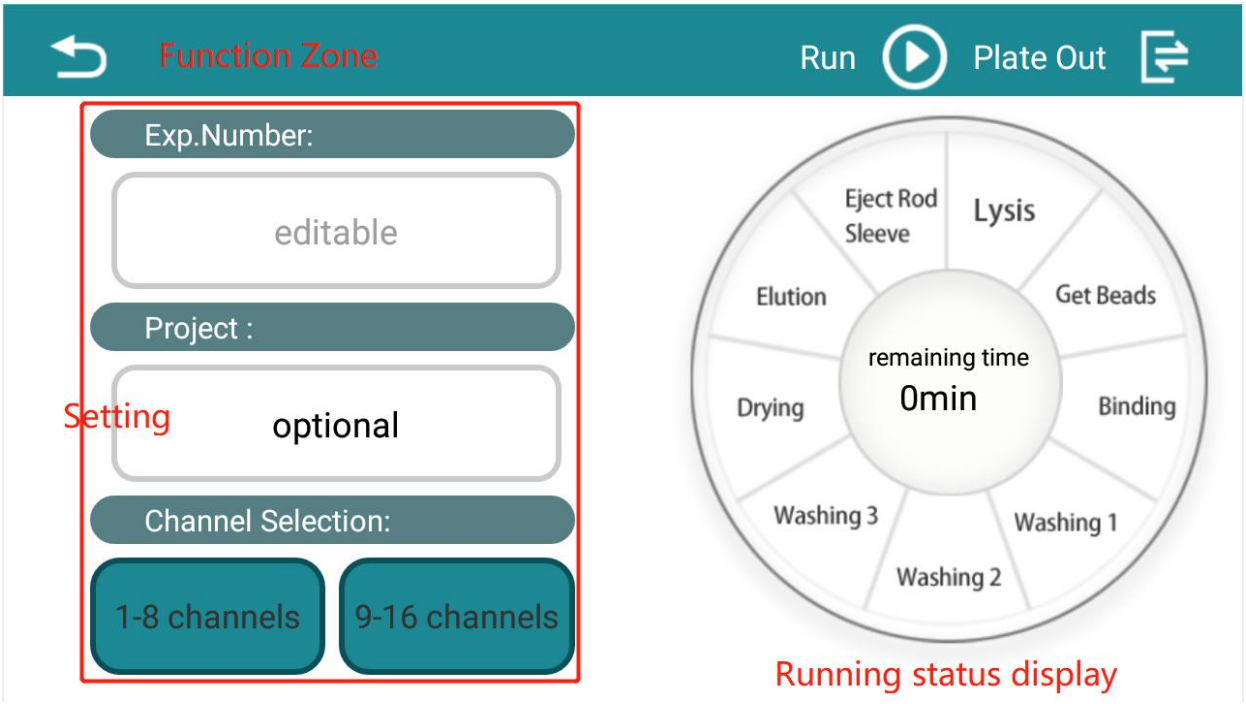


The main interface includes function zone and main control zone.

Function Zone	
Time	Located in the upper left corner of the screen, showing the system time.
	Plate in/out button.When clicking it , the plate will perform the action of In and Out.
Main Control Zone	
Run	Run the specific experiment. Click "Run" to enter the experiment interface.You can select the existed project to start a run.
Project	Manage the project. Click "Project" to enter the project setting interface. If you run the experiment procedure for the first time, please create a new project first in the 'Project' interface.
Inquire	Display the historical experiment data. You can find specified test information in Inquire interface.
System	System setting.You can set System time, system upgrade and language.
UV Sterilize	Utilize UV light to sterilize the system after run a experiment to avoid contamination
Help	Quick guide of the experiment procedure and reagents setup.

4.2.1 Run

After clicking "Run" on the main screen, you will enter the following screen:



'Run' interface includes function zone, setting and running status display.

Function Zone	
	Return to the main interface.
	Start/Pause button.
 	Plate in/out button.When clicking it , the plate will perform the action of In and Out.After clicking, the instrument will go out of the cabin, and a prompt box showing the direction of the orifice plate installation will pop up on the screen. Click "Enter" in the prompt box, and the instrument will enter the cabin. Please follow the direction and position prompted on the screen to install the well plate and load the reagents. As shown on the left.
Setting	
Exp.Number	Experiment number can be set in this area, and the experiment number can be used to quickly query the experiment. The experiment number is repeatable, the uniqueness of the experiment is characterized by the experiment number and the experiment time when querying.
Project	Select the existed project to run the test.If there is no existed project, please go to 'Project' interface first to create the project first.
channel selection	Please click to select the corresponding reagent reaction position. The green background is selected, and the gray background is unselected. As shown in the above figure, channels 1-8 and channels 9-16 are all selected. For extraction of 1-8 samples, the user can select 1-8 or 9-16 wells as the reaction position. If channel 1-8 is selected, the reagent system needs to be loaded in the

	second column, the 3/4/5 is the washing position, and the 6th is the elution position; if the channel 9-16 is selected, the reagent system needs to be loaded in the 8th column, Column 9//10/11 is the cleaning position, and column 12 is the elution position;
Running Status Display	
Remaining time	When you click 'Run', the time remaining for the experiment is displayed.
Pie chart	The pie chart area displays the running status of the experiment. The yellow background indicates the completed steps and the step being executed in a clockwise manner. When all areas are yellow background, that means the experiment is completed.

NOTE: Before the start of the experiment, the deep-well plate with the sample,reagents and magnetic rod sleeve needs to be installed in the plate try of reaction chamber. After the experiment is completed, the deep-well plate should be removed from tray and the purified product in the 6th/12th column should be taken out .

4.2.2 Project

After clicking "Project" on the main screen, you will enter the following screen:

Function Zone	
	Return to the main interface.
Project Display Zone	
project name	The **P**roject Display Zone displays the currently set item name. Select the project name that has been set, and the operations of "edit" and "delete" can be performed. If you do not select the project that has already been set, you can click "New" to recreate the experimental project;
Set button area	
New	Re-create the experiment, click "New" to enter the project setting window, save the settings and complete the creation of the experiment project;
Edit	Select the project name in the project display area, click "Edit" to edit and modify the experimental settings in the currently created project, and click Save to complete the editing of the project;

Del	Select the project name in the project display area, click "Delete" to delete the currently created project;

The initial project screen includes function zone, project list and editing zone.

NOTE: When using the instrument for the first time, you need to set up the project first and then enter "Run" to start the experiment. For new experimental procedures, you need to create a project first and then perform the experiment.

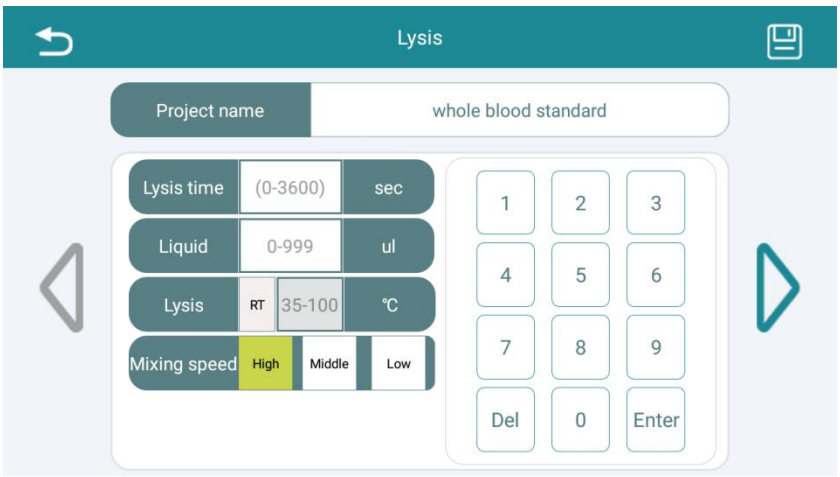
4.2.2.1 Create a Project

After clicking on the "New" button, you can create a project by referring to the following table:

NOTE：

The nucleic acid extraction process supports a one-step method (lysis and combination are performed simultaneously) and a two-step method (lysis and combination are performed in separate steps). For one-step lysis, the lysis time was set to 0. The two-step method requires a lysis program.

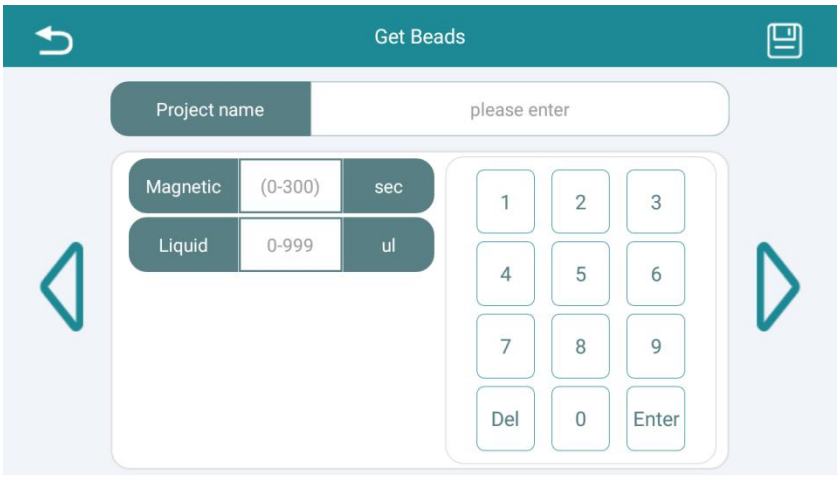
1. Lysis: this step is carried out in the 2/8 column of the deep well plate;



Project name	Set the project name, the project name can be set as a combination of English and numbers. After setting the project name in this step, you can omit the project name setting in the subsequent steps, and the system will automatically bring in the information in the same window set in the previous steps;
Lysis time	This step sets the time for the cleavage reaction to take place. The unit is seconds. If the lysis time is set to 0, it means skip this step and go to the next step;
Liquid volume	This step sets the volume of the lysis reaction system added by the user, including lysate (if any), proteinase k (if any), and samples. The unit is uL;
Lysis temperature	The temperature for the cracking reaction can be set, the temperature setting range is from room temperature (RT) to 100°C, and the unit is °C;
Mixing speed	The mixing speed of cleavage reaction can be set, and the system provides three mixing speeds of "high", "medium" and "low";

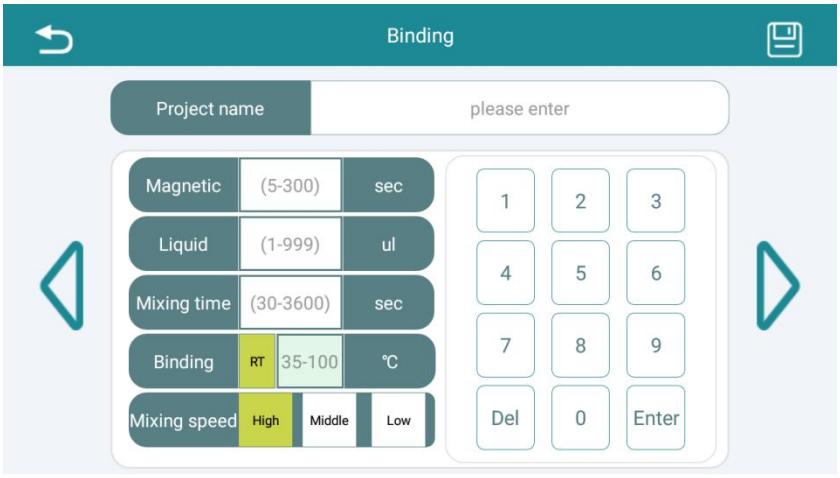
	Go to the previous page.The color of the icon shows gray, indicating that the current step is the first step of the experiment.
	Go to the next page.The color of this icon shows gray, indicating that the current step is the last step of the experiment.

2. Get beads：This step is performed in column 1/7 of the deep well plate；



Project Name	Perform the project name setting, the project name can be set to a combination of English and numbers. After setting the project name in this step, the subsequent steps can omit the project name setting and the system automatically brings in the information of the same window set in the previous steps.
Magnetic	Magnetic attraction time. .**If the magnetic attraction time is set to 0, it indicates that the step is skipped to the next step.**The magnetic attraction time for this step can be set to 0 if you add the beads manually to the 2nd/8th column reaction position.
Liquid	Set the volume of magnetic beads.

3.Binding: this step is performed in column 2/8 of the deep-well plate.



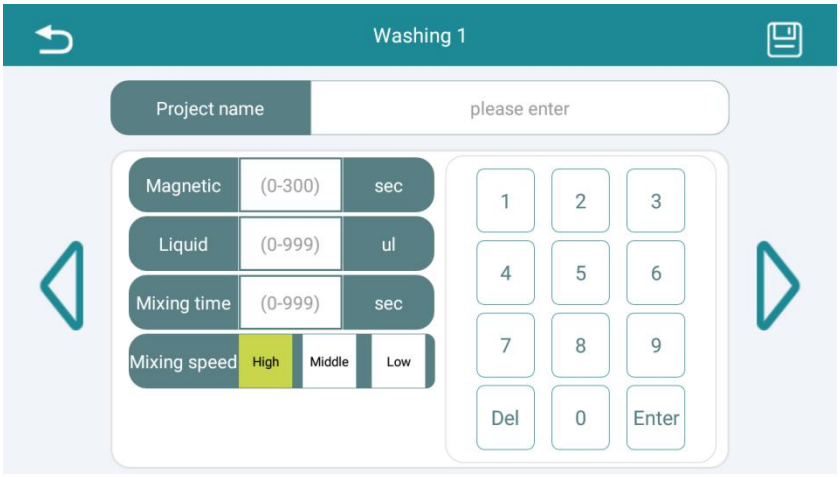
Project Name	Click the project name setting area, the soft keyboard will pop up. You can use

	letters, numbers for the name combination.
Magnetic	Magnetic attraction time.Set ’0’ will skip current step and go to next step.
Liquid	The total volume of all reagents in the well.
Mixing time	Mixing time of the reagents.
Binding	Binding temperature setting. If you do not need heating function, you can click’ RT’ for maintain at room temperature.’RT’ will turn to yellow color when it is selected. Or if you need to set heating temperature, please fill in the temperature at the blank area.
Mixing	Mixing speed setting. Variable speed can be selected: "high", "Middle" or "low’’. Yellow color means selected.

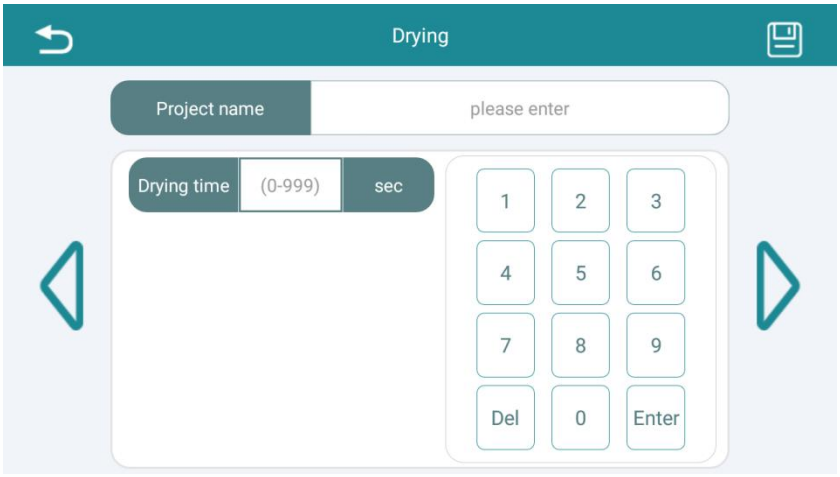
4.Cleaning 1: This step is performed in column 3/9 of the deep-well plate.

5.Cleaning 2: This step is performed in column 4/10 of the deep-well plate.

6.Cleaning 3: This step is performed in column 5/11 of the deep-well plate, and you can set whether to skip this step according to the system cleaning step regulations.

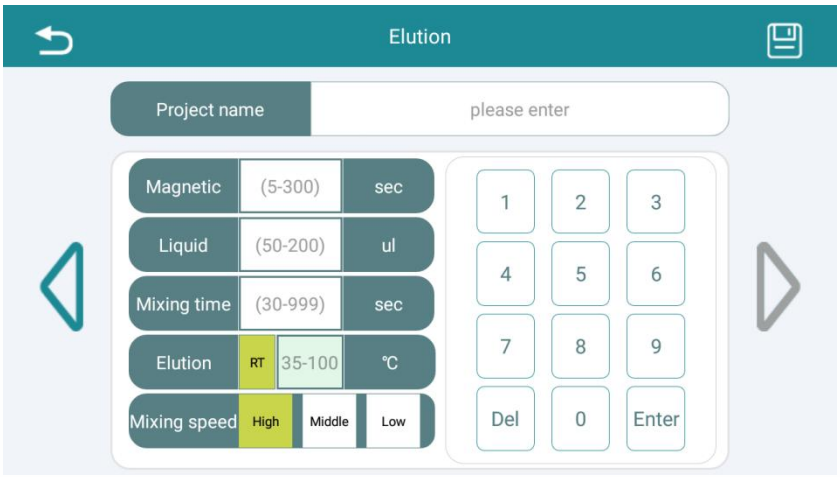


7、Drying: this step is performed at the top of last washing position(unskippable step), where the magnetic rod sleeve is raised above plate and wait in air to perform the drying of the beads and reduce interfering substances.

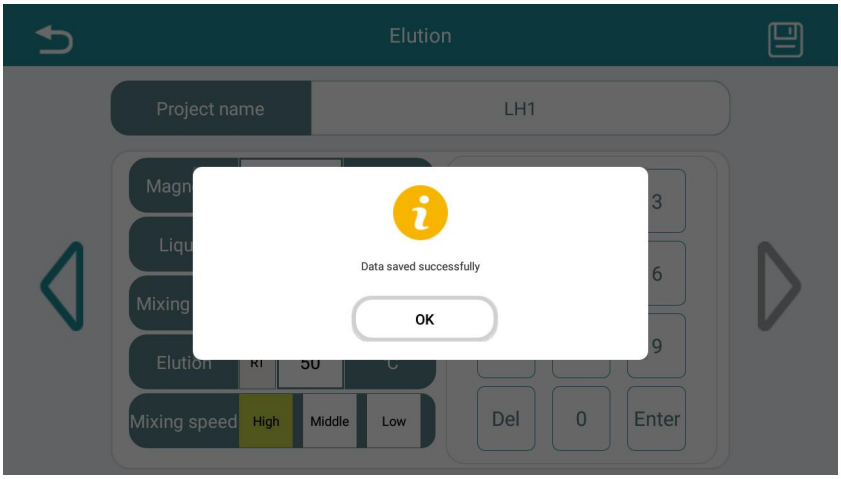


Drying time	Set the drying time. Drying is a must step in the operation,please do not set 0. Set 0 will skip this step.

8、Elution: this step is performed in columns 6/12 of the deep well plate.

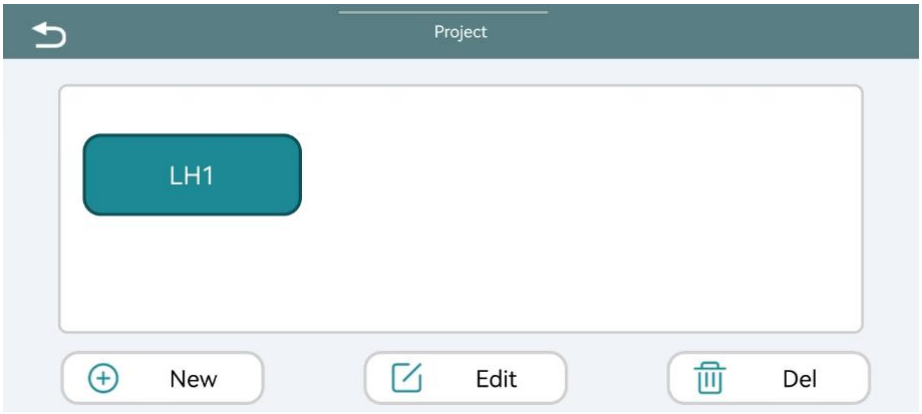


9、Save : click  **to save the set information.**



After successful saving, a window will pop up, click "OK" to confirm.

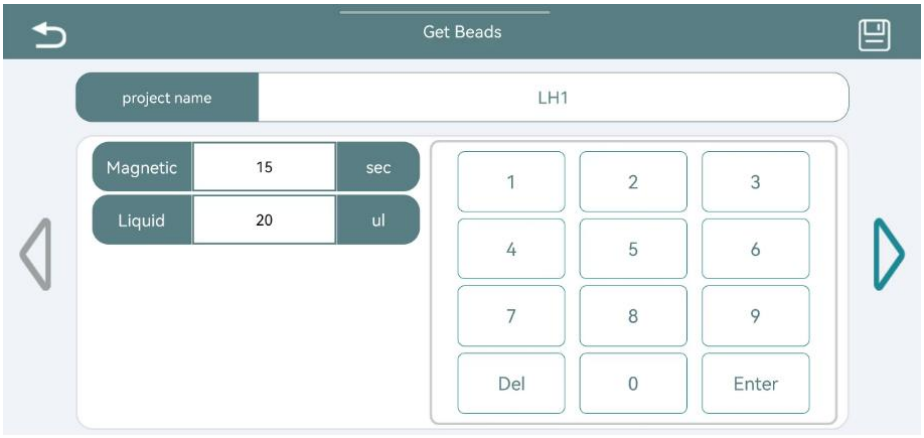
4.2.2.2 Edit



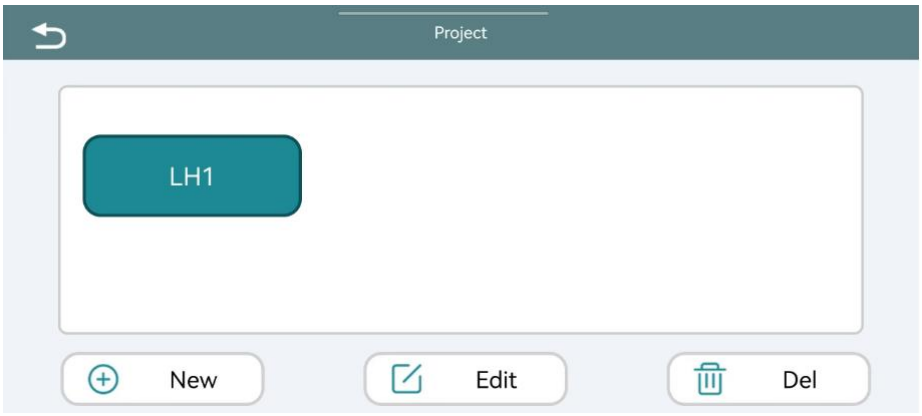
Select the item you have set in the display area to edit or view, and click "Edit" to enter the settings page. Please refer to section 4.2.2.1 Create a Project to edit.

If you make a change to the name of an existing project, it is saved as a file with the new

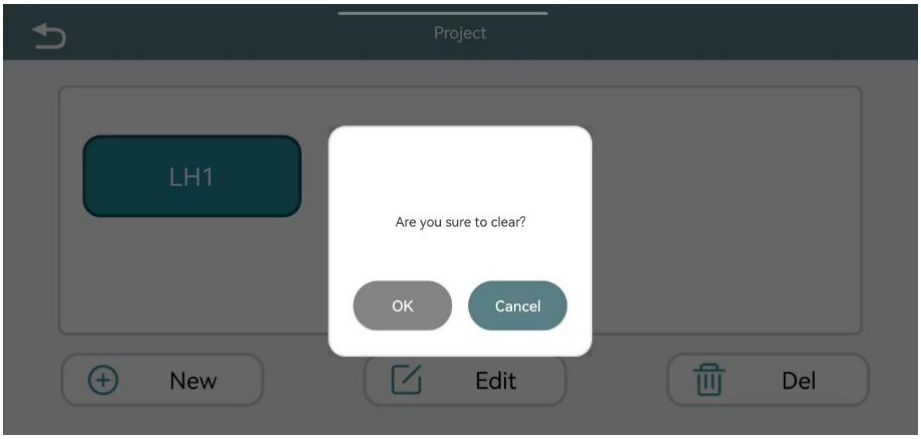
project name.



4.2.2.3 Delete

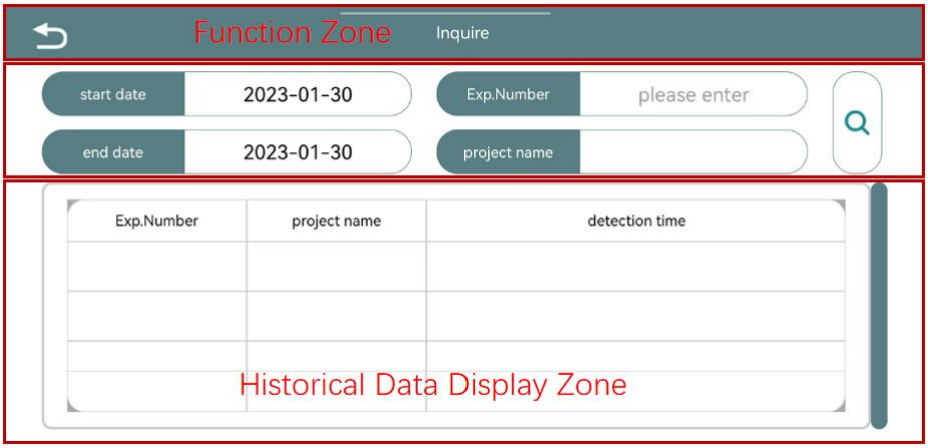


In the project display area, select the project and click "Del", a window will pop-up, click "OK" to confirm the deletion, click "Cancel" to cancel the deletion operation.



4.2.3 Inquire

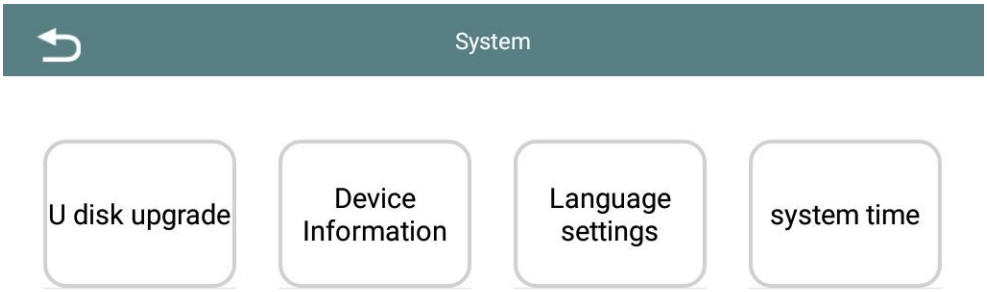
After clicking ‘Inquire’ on the main screen, you will enter the following screen:

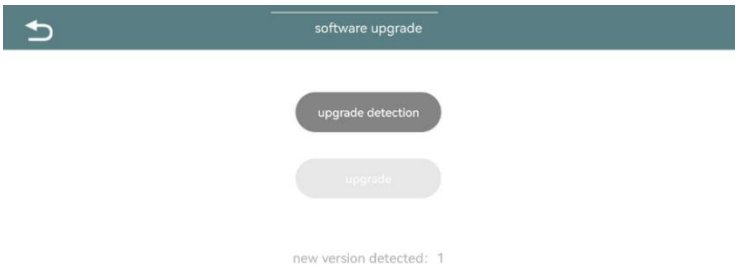


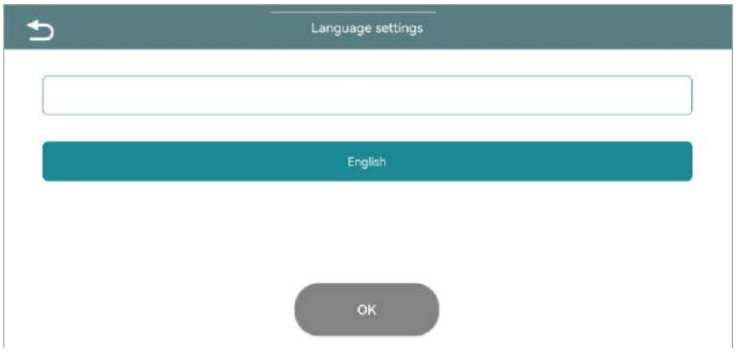
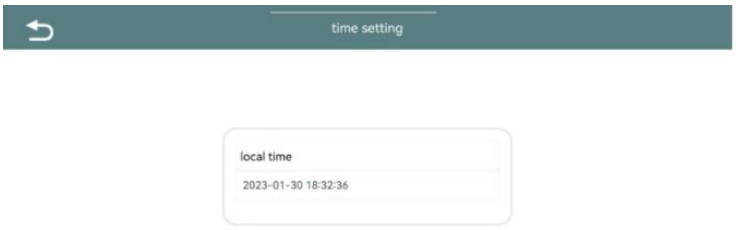
Function Zone	
	Located in the upper left corner of the screen, click to return to the main screen.
Inquire condition Zone	
Start date/end date	you can select a start date and an end date,Click the search button， the system retrieves experiments within this time frame and displays them.
Exp.Number	You can enter the experiment number to quick search the data.Click button， the system will retrieve the experiments for this experiment number and display all of them.
Project Name	You can enter the Project name to quick search the data. Click button，the system retrieves all the test under this project.
Query Display Zone	
Query display content	After setting the search conditions and clicking button, the system will display the experiments that meet the search conditions in the query display area, and the displayed information includes the experiment number, project name and detection time.

4.2.4 System

Click "System" on the main screen and then enter the following screen:



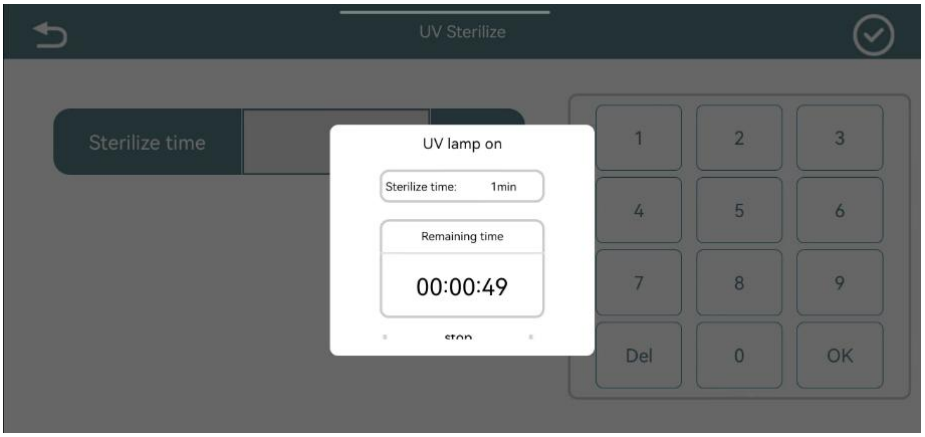
System Setting	
U disk upgrade	Click on "U disk upgrade", you can retrieve whether there is an updated software version in the inserted USB flash drive by using the "Upgrade Detection" button.If the software version is higher than the current software version in the instrument, the "Upgrade" button will be unlocked and turn dark gray, and you can upgrade the software by clicking the "Upgrade" button.If no USB disk is inserted, or if the software version in the U disk is lower or same as the existing software version, the "Upgrade" button is still locked in light gray and cannot be clicked. 
Device Information	Click on "Device Information" and the window will display the current instrument model, software version, hardware version and instrument serial number. 
Language Settings	Click "Language Settings" to enter the language setting interface, the system supports switching between English and Chinese, select the language you need to

	display, and click "OK". 
System time	Click "system time", you can set the system time 

4.2.5 UV Sterilize

After clicking on the "UV Sterilize" in the main interface, you will enter the following interface:

Set the Sterilize time and click button to start the sterilization. After click , a window will pop up to show the remaining time of the sterilization. UV lamp on, the system enters the countdown, until the countdown ends to exit this interface.



4.2.6 Help

Click "Help" on the main interface to check the reagents position and plate installation.

（1）Prepare reagents and sample into the deep well plate:

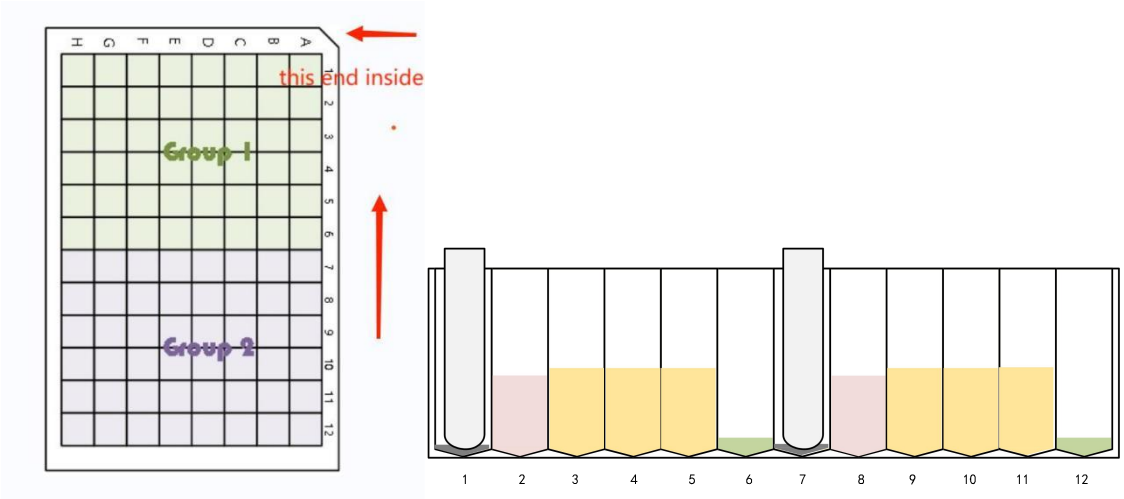
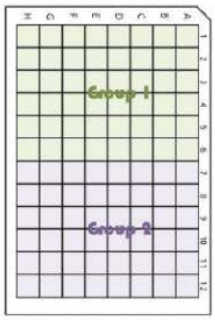


Table 1 Reagents position and supported reagents volume

Position/Column	1/7	2/8	3/9	4/10	5/11	6/12
Function	Magnetic Rod Sleeve/ beads	Lysis and binding	Washing 1	Washing 2	Washing 3	Elution
Content	Magnetic Rod Sleeve/ Beads	Lysis Solution Binding Solution Protease k **sample**	Washing solution 1	Washing solution 2	Washing solution 3	Eluent
Reagents Volume (ul)	0-200	100-1000	100-1000	100-1000	100-1000	50-200

Add reagents and samples in the corresponding position.

2.Install the magnetic rod sleeve in column 1/7.
You can operate the test at either group if the samples less than 8.



3. Click Plate out' icon to loadtheplate. After loading, 'clickPlate In' icon.

4. Create a new project or select the existed project to set the test protocol. Click Run to start.

5. After test complete, click Plate out icon to take out the plate.
The purified product is in column 6/12

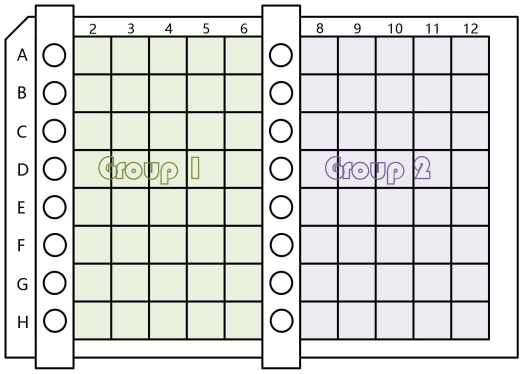
CHAPTER 5 APPICATIONS

5.1 Preparation of Consumables

2.2ml 96 deep well plate V-bottom	8-well strip magnetic rod sleeve
	

One 96 deep-well plate with 2*8-well strip magnetic rod sleeve can complete the nucleic acid extraction of 16 samples.

1-8 samples extraction can be performed by 1* 96 deep well plate and 1*8-well strip magnetic rod sleeve, you can place reagents in either group1 or group2.



5.2 Preparation of the Reagents

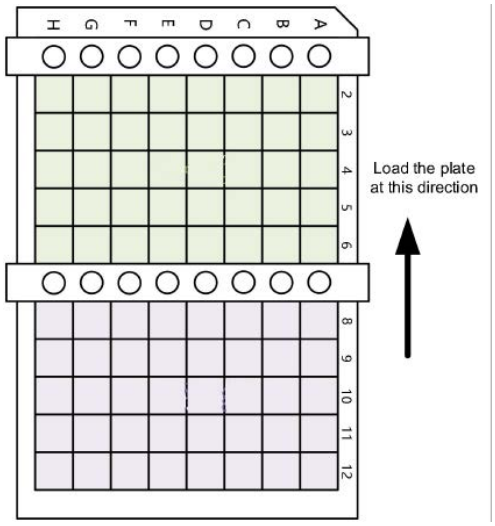
Add samples and reagents according to the following table:

Position/column	1/7	2/8	3/9	4/10	5/11	6/12
Function Description	Magnetic sleeve position /	Lysis and Binding	Washing1	Washing 2	Washing3	Eluent

	magnetic bead position					
Add reagent	Magnetic rod Sleeve& magnetic bead 40uL	Lysis binding solution 600uL ProteinaseK-10uL Sample 200uL	Washing1 buffer 800uL	Washing2 buffer 800uL	Washing3 buffer 800uL	Elution solution 100uL

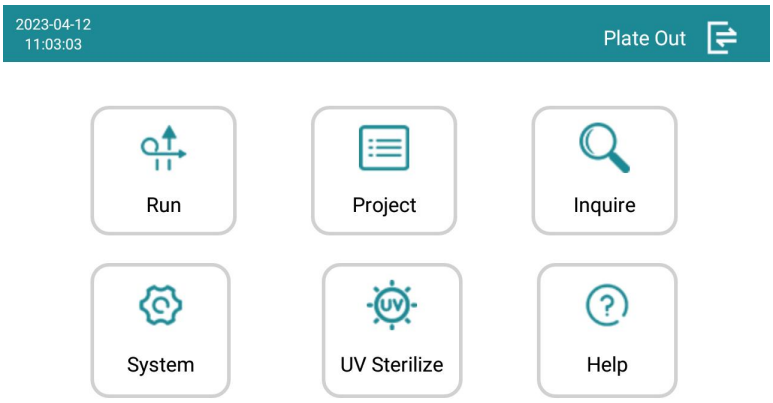
5.3 Install the Consumables

The deep-well plate with the sample reagent magnetic sleeve added (note that the magnetic sleeve is in column 1/7) is placed on top of the tray out of the bin in the orientation shown in the figure.

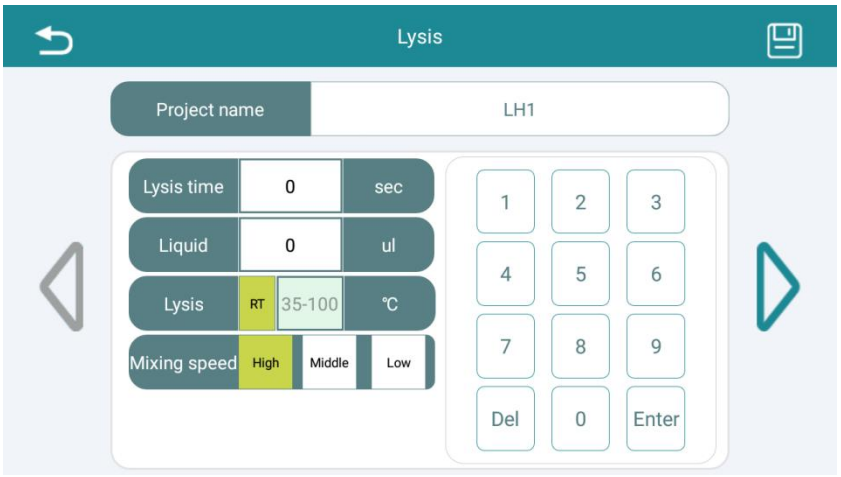


5.4 Create Project

1.Select "Project" on the main screen to enter the project settings page.

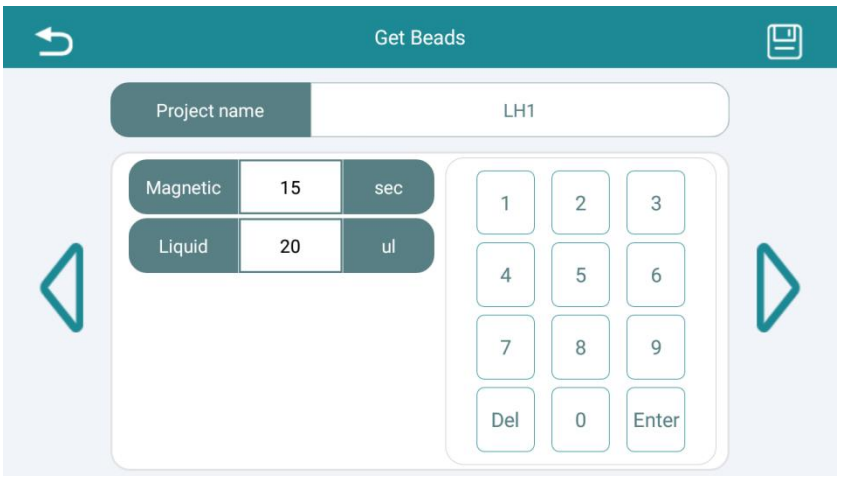


2. Set lysising information.

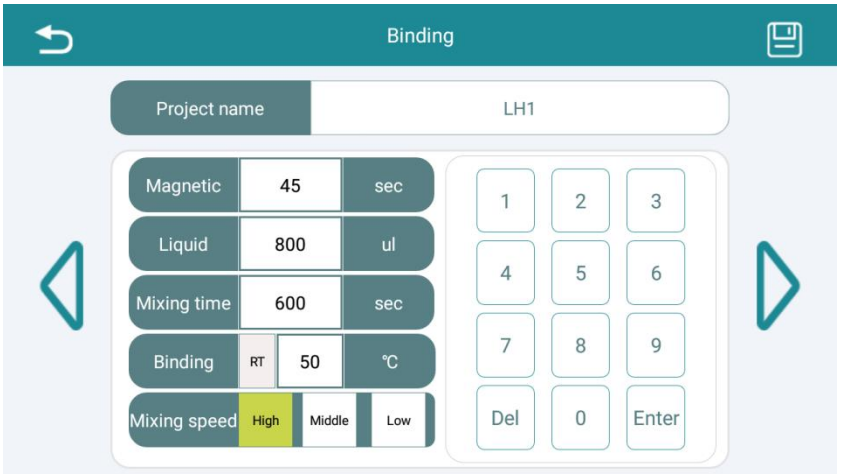


This experimental process does not require a separate lysis process, so the lysis time is set to 0, and this step is skipped.

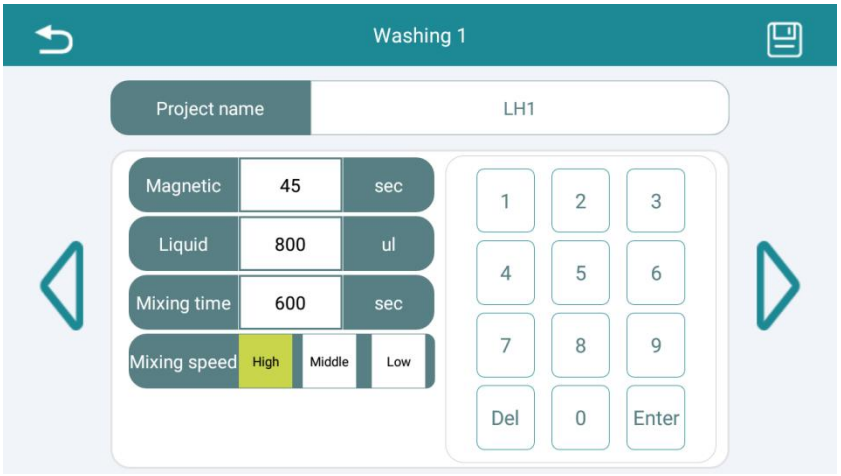
3.Get beads: set the magnetic attraction time and beads volume.

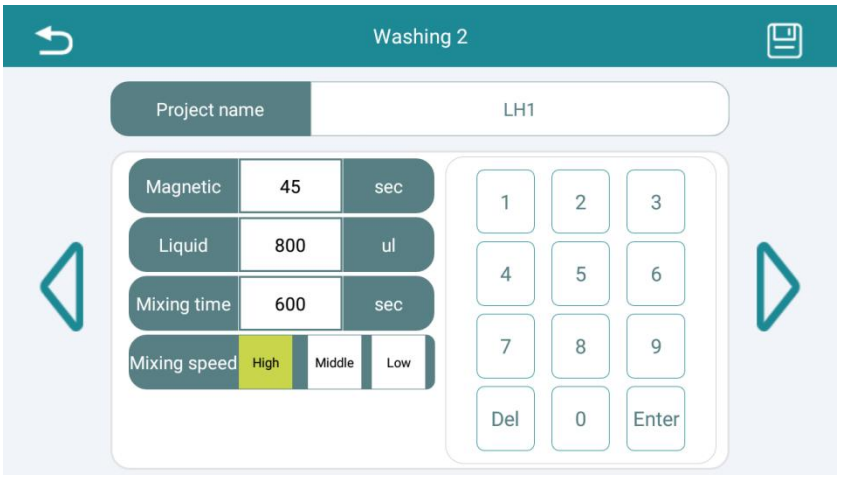


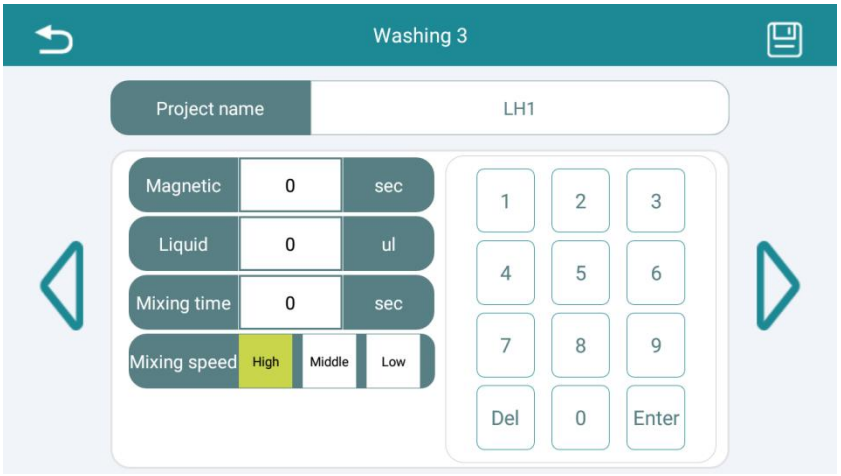
4.Set the binding information.



5.Setting the washing1/2/3 information.

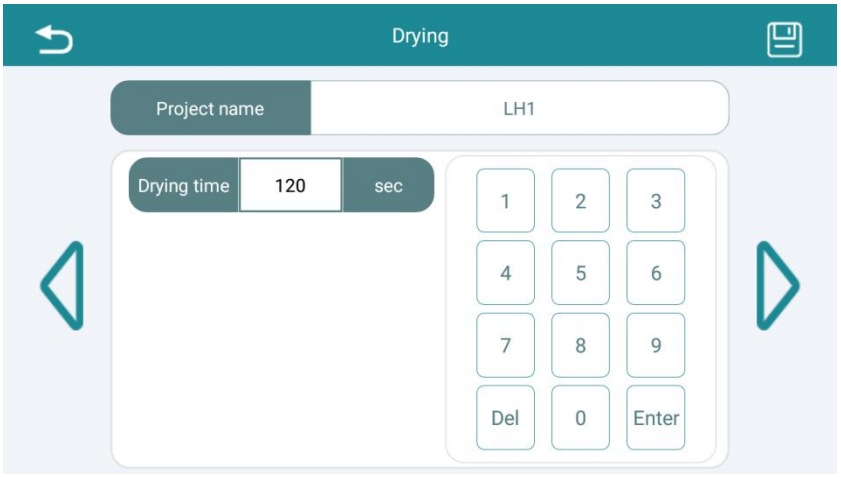




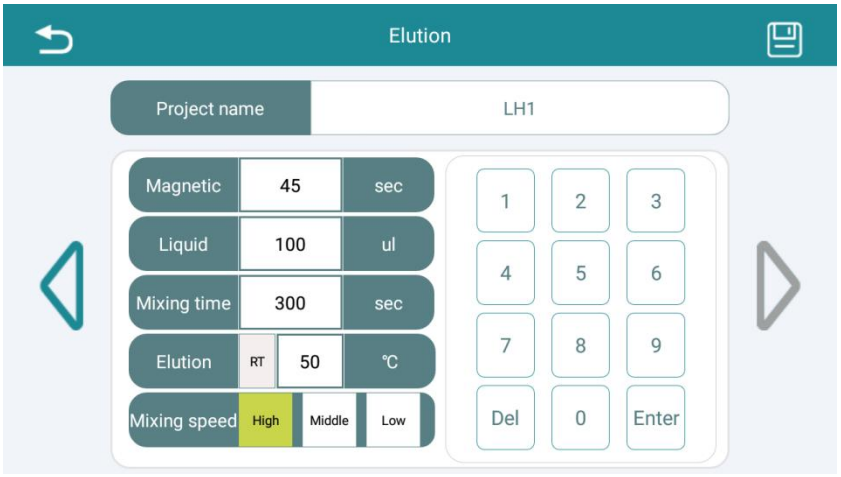


As shown in the Washing 3 image,the process will skip washing3 step because of the magnetic attraction time is 0 (liquid volume of 0 will also skip this step).

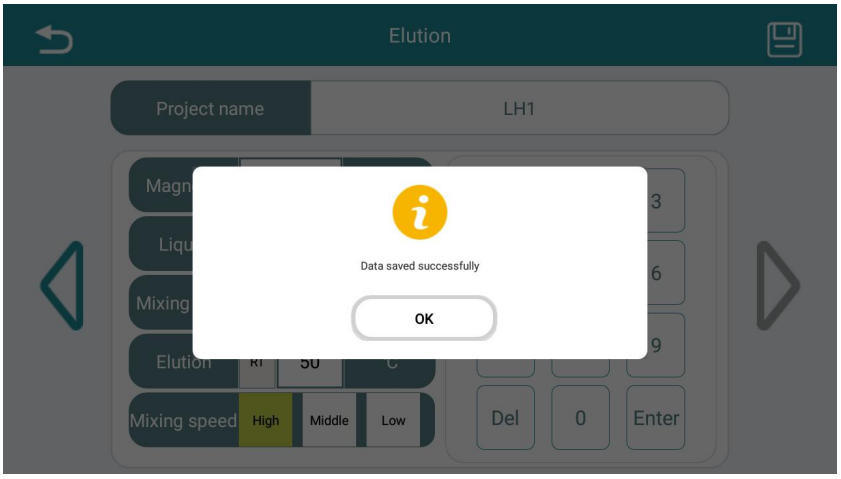
6. Set drying information.



7. Set Elution information.



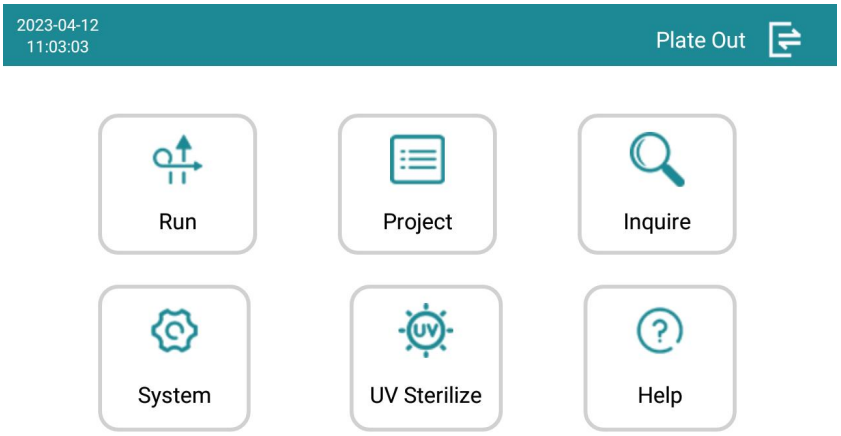
8. Saving the settings.



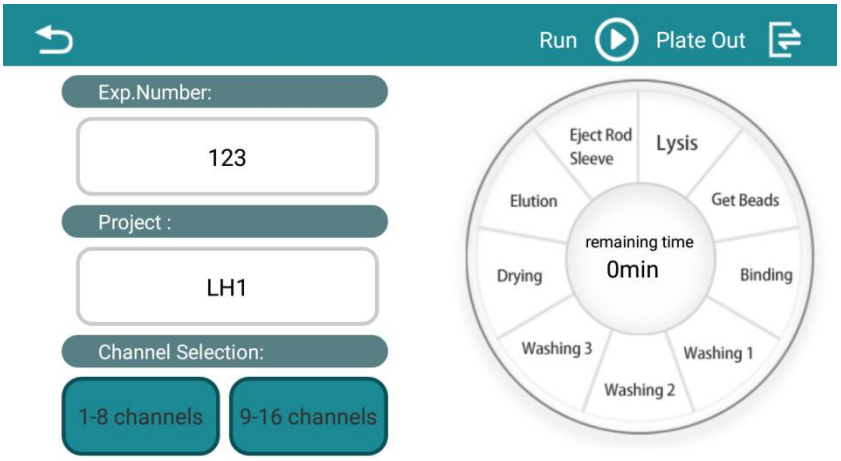
Click ,and the software prompts to save successfully.

5.5 Run the Test

1、Click "Run" on the main screen to enter the run page.



2、Set the experiment number and select the project ,click to run the test



5.6 Experiment Complete

After the experiment,click to take out the deep-well plate, and the purified products is in column 6/12 for further experiment use.

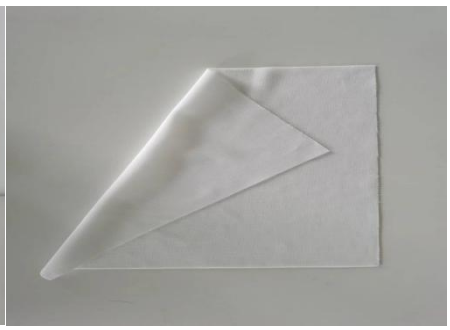
CHAPTER 6 MAINTENANCE

6.1 Instrument Maintenance and Cleaning

To ensure the performance of the instrument and reduce contamination, the instrument requires regular weekly cleaning.

Contamination occurs	Wipe all accessible parts with a clean rag of 70% ethanol, wait for the ethanol to evaporate completely, wipe the parts again with a new rag of pure water, and dry naturally
Salt solutions, chemical solvents, acid or alkaline solutions spilling onto the instrument surface	Remove immediately to prevent damage to the instrument

Ethanol/pure water



Cleaning rag

CAUTION:

Painted surfaces can be cleaned with most laboratory cleaners. Dilute the cleaner according to the manufacturer's recommendations. Do not expose the surface to concentrated acids or concentrated ethanol for long time to avoid damage. Clean the screen with a mild laboratory cleaner.

NOTE:

1. If any surface is contaminated with Biological Materials, it should be cleaned immediately with a mild disinfectant solution.

2. Do not spray detergents, cleaners or other liquids directly onto the surface of the instrument, and do not use abrasive cleaning agents which may damage the surface.

6.2 Fuse

Remove the fuse socket with a screwdriver and remove the fuse, then replace it with a new fuse of the same size (0218001.T1AL250VP).

CHAPTER 7 TROUBLE SHOOTING

Number	Failure	Possible causes	Processing method
1	Instrument power switch on, instrument not start	Power cord not properly connected	Reconnect the instrument power cord
		Power supply is not energized	Using energized power
		Fuse blown or burst	Fuse replacement
		Others	Contact the manufacturer or supplier
2	Abnormal sound from the instrument	Whether the magnetic rod sleeve is inserted well or not	Re-install the magnetic rod sleeve
		Whether deep well plate is installed correctly	Re-install the deep well plate
		Wrong consumables	Use the recommended consumables
		Others	Contact the manufacturer or supplier