

Chapter 1 General description

This chapter mainly describes the intended use, principle, characteristics, specifications, performance parameters and software functions of the instrument.

1. Intended use

The Fluorescent Quantitative Detection System is an automated instrument for quantitative analyses the related DNA/RNA in human sample using the polymerase chain reaction fluorescent quantitative detection. The instrument is for in vitro diagnostic only. Application areas include research into the human genome, forensics, cancer, tissue, population biology, paleontology, zoology and botany and in clinical diagnosis of virus, cancer and research.

The Fluorescent Quantitative Detection System is intended for use by professional user trained in molecular biological techniques and the operation of The Fluorescent Quantitative Detection System.

2. Principle

The Fluorescent Quantitative Detection System is based on the Polymerase chain reaction. Its principle is based on the use of DNA polymerase which is an in vitro replication of specific DNA sequences. This method can generate tens of billions of copies of a particular DNA fragment (the sequence of interest, DNA of interest, or target DNA) from a DNA extract (DNA template). We can therefore amplify nucleotide sequences from infinitesimal amounts of DNA extract. PCR is therefore a technique of purification or cloning.

The principle of the PCR is based on the temperature variations of heating and cooling-thermocycling reaction divided into three steps:

Denaturation: The dsDNA becomes single-stranded at a higher temperature during denaturation. Here hydrogen bonds between two DNA strands break.

Annealing: in The primer binds or anneals to its exact complementary sequence on a DNA during the annealing step. The primer provides a site for the initiation of synthesis.

Extension: Taq DNA polymerase uses the 3' end of the primer and starts DNA synthesis by adding nucleotides to the growing DNA strand.

All three steps are repeated for 25 to 40 cycles and in each cycle the DNA becomes double.

The PCR machine is known as a thermocycler. This machine is simply a heating block (just like





our iron) which provides the constant temperature and even rapidly changes between two temperature states.

The machine has a lower block of metal having deep wells for putting PCR tubes. Also, the temperature of the inner environment is maintained by the heating block present on the upper side of the lead. Further, the machine contains the display, power on and off switch, and cooling assembly. The machine has the ability to heat and cool the PCR tube in a short period of time.

Real-time fluorescent quantitative PCR technology refers to the method of adding fluorescent groups to the PCR reaction system, using the accumulation of fluorescent signals to monitor the entire PCR process in real time, and finally quantitatively analyzing the unknown template through the standard curve.

3. Features

- New, user-friendly operation, operation interface, smooth operation
- Fluorescence real-time detection method is adopted to realize simultaneous amplification and detection in the same tube without post-processing
- Advanced thermoelectric refrigeration technology ensures super high speed heat cycle system heating, fast and stable refrigeration
- Multi-point temperature control ensures higher temperature uniformity of 96 sample wells
- 6 partition temperature control function
- Stable and accurate gradient functions of 1 ~ 36°C ensure optimized PCR conditions
- the thermostatic function of SOAK allows the PCR reagent to be stored at low temperature
- Long life LED excitation light source requries no maintenance
- Advanced fiber conduction technology makes photoelectric detection system more sensitive and reliable
- Real-time dynamic monitoring of the whole process of PCR amplification was carried out
 Real-time dynamic monitoring of the whole process of PCR amplification was carried out
- Wide linear range, initial DNA copy Numbers up to 10 orders of magnitude do not require gradient dilution
- There is no need to turn on the PCR reaction tube, which can avoid product contamination during and after PCR and ensure the accuracy of the results
- Multi-color fluorescence detection in a single reaction obtains more information
- The application of thermal cover technology has realized the oil-free operation of PCR
- Chinese language interface, flexible program setting, comprehensive analysis and





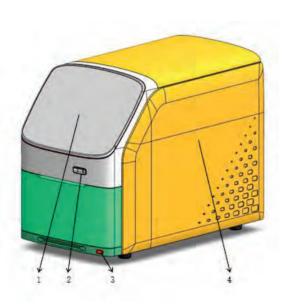
reporting functions, all parameters can be stored

- Multiple or single sample reports can be printed
- The automatic, accurate and timely service of remote network provides the most advanced technical support for the 96-well quantitative PCR analyzer

4. Product Structure and Composition

This product is mainly composed of control parts, thermal cover parts, thermal cycle parts, photoelectric parts, transmission parts, power parts and software (V1).

The external appearance of the Fluorescent Quantitative Detection System is described as below:





Front view

Indication of the items

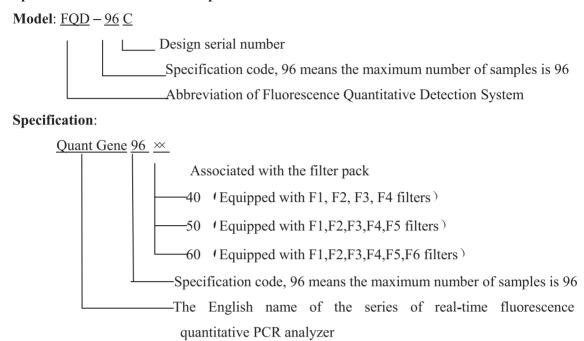
- 1. Display
- 2. USB interface
- 3. Start switch
- 4. Case body
- 5. Network interface
- 6. USB interface
- 7. Standard power outlet
- 8. Power switch

Back view





5. Specification and Model Description



6. Performance Parameters

Model	FQD-96C					
Sample size	96×0.2ml (Suitable for single tube, 8 row tube and 96-well plate (no skirt board, half skirt board))					
Detection channel	F1 F2 F3 F4 F5 F6					
Applicable dye	FAM, SYBR Green I	VIC, HEX, TET, JOE,	ROX, TEXAS -RED	Cy5 Quasar - 670	Cy5.5 Quasar - 705	Optional
Module operating temperature range	4°C∼99.9°C(Minimum setting scale:0.1°C)					
Average heating rate	When rising from 50°C to 90°C, it should be no less than 3.5°C/s					
Average cooling rate	From 90°C to 50°C, should not be less than 3.0°C/s					
Module temperature control accuracy	Should be no greater than 0.1 °C					
Temperature uniformity	The temperature difference is within ±0.3°C					
Temperature control accuracy of hot cover	105°C±5°C					
Fluorescence intensity test repeatability	CV≤3¼					
Mode of operation	Continuous operation					
Operating system	Windows XP/Windows Vista/Windows 7/Windows 8					





Input power	100-240V∼ 50Hz 1000VA		
Overall dimensions	490mm×290mm×391mm		
Weight	28kg		

7. Production Date and Service Life

Production date: see label for details.

Product life: 5 years

8. Function Overview of Supporting Software

- a) Parameter setting function (including temperature, time, cycle number, rise and drop rate, detection channel selection);
- b) Note function of text content;
- c) Sample data recording function (sample number, sample name, sample data);
- d) File operation display function (PCR thermal cycle data display, fluorescence detection data display, real-time display of various data during the operation of the instrument);
- e) Test data analysis function (analysis function can be used alone without instrument connection);
- f) Analysis results output function (one can output the analysis results to other types of files, such as :EXCEL, TXT files; be able to query and print the analysis results; one can change the print format and select the print item);
- g) File storage function (setting data, running data, analysis results);
- h) Fault protection and alarm function.

Caution: The above software functions are for reference only, without prior notice to the change of software functions.

9. Product Software Version

Release version of this product software: V1





Chapter 2 Preparations

This chapter mainly introduces the use, transportation and storage conditions, structure composition, software installation/unloading, and preparation before starting up the Quant Gene 96xx series fluorescence quantitative PCR analyzer.

1. Transportation and Storage Conditions of the Instrument

Ambient temperature: -20°C ~ 55°C

Relative humidity:≤80 \%

Atmospheric pressure:75kPa~106kPa.

2. Normal Working Condition

Ambient temperature:10°C~30°C

Relative humidity:≤70 %

Atmospheric pressure: 100-240V ~ 50Hz 1000VA

Caution:

Before using the instrument, please confirm whether the Working Conditions meet the above requirements. Note that the power socket is a 3-hole socket with reliable grounding.

3. Preparation before the Instrument is Switched on

Power cord connection: the power cord attached to the instrument should be used. When connected, the instrument power switch should be in the closed state; After connecting, check whether the power cord and the instrument socket are too loose, if too loose, it should be replaced.

Caution:

The attached power cord is reliable, but may cause the connection to be too loose after several unplugging. In this case, the power cord should be replaced.

The power cord should be replaced with the same specification.

4. Installation Procedure

4.1 Installation of the instrument

4.1.1 Scope of Delivery

Caution: Fluorescent Quantitative Detection System is heavy (28kg), It needs two persons moved out from the case carefully!

The components listed in the below packing list will be delivery together with the instrument.





Packing List

No.	Title	Model and Specification	Unit	Amount	Remarks
1	Fluorescent Quantitative Detection System	FQD-96C	Set	1	The instrument
2	Power cable	250V 10A	Piece	1	Accessory (optional)
3	Power cable	125V 12A	Piece	1	Accessory (optional)
4	Fuse	250V 12A	Piece	2	Accessory
5	Wireless mouse and keyboard kit	Logitech MK270 Black	set	1	Accessory
6	USB flash disk (BIOER)	Quant Gene 9600	Piece	1	Accessory
7	Touch Screen Software User Manual	/	Copy	1	Following file
8	Instruction for use	/	Сору	1	Following file
9	Performance test table	/	Copy	1	Following file
10	Packing List	/	Сору	1	Following file
11	Precautions of Using QuantGene 9600	/	Copy	1	Following file
12	Pressure balance plate	/	Piece	1	Accessory
13	Finished network cable	/	Piece	1	Accessory
14	Silicone pad	/	Piece	1	Accessory

4.1.2 Transportation

Please observe the following Safety Notes when transporting and storage the Fluorescent Quantitative Detection System:

The Fluorescent Quantitative Detection System is supplied in an aluminium case. Visually inspect the box for damage before delivery.

- Ensure that transport and storage temperatures conform to the technical data.
- Always place the device on a stable surface.
- Check product information on the box.
- Visually inspect the box for loose or broken parts.





If the package had been damaged in transit, it is particularly important that you retain it for inspection by the carrier in case there has also been damaged to the instrument.

Neither the manufacturer nor its agents can be held responsible for any damage incurred intransit, but the manufacturer will make every effort to help obtain restitution from the carrier.

If any parts are damaged, contact Bioer or the distributer(s).

4.2 Unpacking Procedure

Please observe the following safety notes when unpacking, storing the Fluorescent Quantitative Detection System:

- The Fluorescent Quantitative Detection System is supplied in an aluminum case. Visually inspect the container for damage before opening.
- Move the packed instrument to its site of operation. Unpack Fluorescent Quantitative
 Detection System and accessories carefully with the arrows on the transport package
 pointing upwards. Remove the instrument from the package and place it on a level surface.
- Check if all system components are presents using the delivery note.
- Ensure that transport and storage temperatures conform to the technical data.
- Place the device on a stable work surface.
- Compare the serial number on the rear panel of the device with the serial number on the delivery note.
- Visually inspect the instrument for loose, bent or broken parts.
- Retain the packaging for use when storing for long periods or to return the device to the manufacturer.

Caution: When unpacking, use Packing list described in Chapter 4.1.1 to ensure that all components are present.

4.3 Installation of Supporting Software

4.3.1 Selection of a Computer System

System environment

Operating system: Windows XP/Windows Vista/Windows7/Windows8

Operating environment: Net Framework 4.0

Other software: PDF reader **Minimum configuration:** Processor: Intel Core i3





Memory: 2GB Hard disk:10GB

4.3.2 LineGene96xx Software Installation

Double click PcrServer installation file 'PcrServerSetup.exe') ► Display the installation interface (select the installation language) ► Set installation path ► install

Double click LineGene96xx installation file 'LineGene96xxDiagnosisSetup.exe') ► Display the installation interface (select the installation language) ► Set installation path ► install

4.3.3 LineGene96xx Software Uninstall

Control panel ► Add/remove programs ► PcrServer ► uninstall

Control panel ► Add/remove programs ► LineGene96xx ► uninstall





Chapter 3 Start

1. Check before Starting

Before putting in the power plug and powering up the detection system, the following contents should be confirmed:

- Whether the power supply is consistent with the voltage required by the system;
- Make sure the power cord plug is correctly and reliably plugged into the power socket;
- Whether the surrounding working environment and equipment placement conditions meet the requirements.

2. Boot

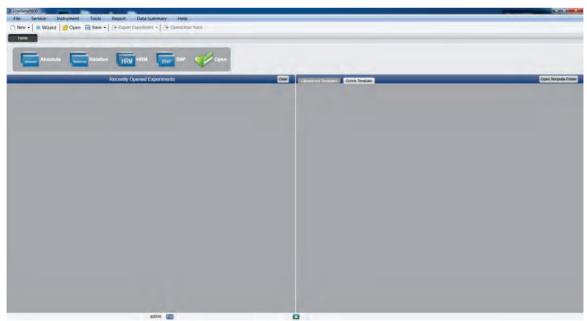
Step 1: turn on the power switch of the backboard of the instrument;

Step 2: after entering the operating system, start the Quant Gene 96xx series real-time fluorescence quantitative PCR analyzer.

To start the software, click "LineGene 96xx" on the start/program menu or double click on the shortcut icon on the desktop.

3. Software Startup Interface

Double click any software shortcut icon of the LineGene 9600 series real-time quantitative PCR analyzer on the desktop, the corresponding startup screen will appear.



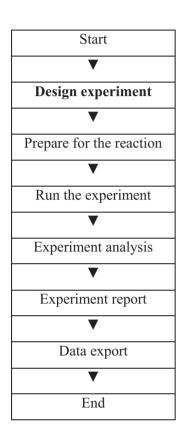
The system window consists of the menu bar, the toolbar and the main page.





Chapter 4 Absolute Quantification

1. Design Experiment



This section describes how to design a new absolute quantification experiment and covers inspection item setting, sample information setting, reaction plate setting and programme setting.

1.1 Create New Absolute Quantitative Experiment

1. Click build **Absolute** on the **Home** interface and this will open the absolute quantitative experiment window.

NOTE: The Absolute quantitative experiment can be also created by:

- a. Clicking File ightharpoonup New ightharpoonup Absolute on the menu bar
- b. Clicking **New** ▶ **Absolute** on the toolbar







1.2 Detector Setting

1. Click **Setup** ▶ **Detector**



2. Input experiment properties

Input the experiment name, user name and any comments in the experiment properties column.



3. Detector Setting

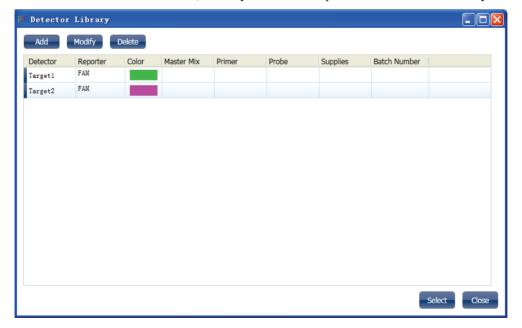
Set up the Detector, Assay, Dye and Colour.

If necessary, the user can also:

- a. Add detector
- b. Add assay
- c. Delete detector
- d. Delete assay
- e. Add the detector in the Detector Library: click Add Detector From Library ▶ the Detector

Library window will pop up ▶ select the Detector in the window to be added

The user can also conduct Add, Modify and Delete operations in the item library.







f. Set up the detector, set up the assay, set up the dye name and set up the colour



4. Set up reference dye

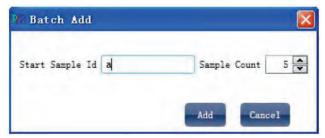


1.3 Sample Information Setting

1. Click **Setup** ▶ **Sample**



- 2. Add sample information
- a. Itemized addition: input ID in **Sample ID** ▶ press **Enter** ▶ add information for one sample
- b. Batch addition: click **Batch Add** ▶ the Batch Add window will pop up



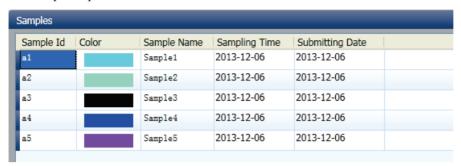
- 3. Delete sample information
- a. Itemized deletion: select one sample ▶ click **Delete** ▶ delete the selected sample information
- b. Delete all: click **Clear All** ▶ deletes all sample information
- 4. Import/Export sample information
- a. Click **Import Sample Info** ► the File Import window will pop up ► import sample information file in CSV format
- b. Click **Export Sample Info** ► the Save As window will pop up ► the sample information will be exported in CSV file format







5. Set up sample information



1.4 Reaction Plate Setting

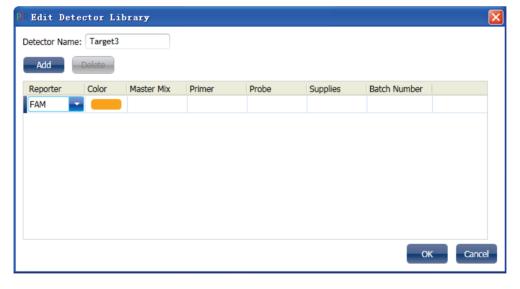
1. Click Setup ▶ Plate



- 2. Set up the inspection criteria of the reaction plate
- a. Select reaction plate well site: click Reaction Plate well Site

The user can also right click the reaction plate well site to Copy, Paste and Add New Detector.

Adding a new detector will open the Edit Detector Library window.



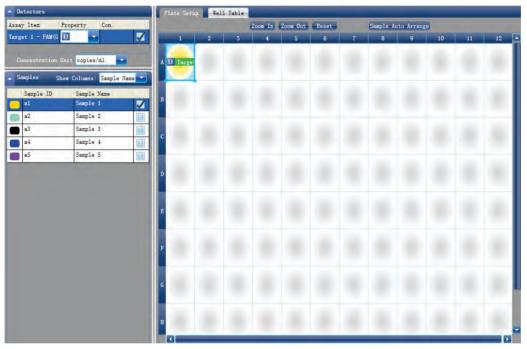




b. Select Assay item and modify the property, concentration and concentration unit.

Property	Name	Concentration	Concentration unit
U	Unknown	NO	Copies/ml
S	Standard	YES	IU/ml
N	Negative	NO	Fg/ml
P	Positive	NO	Pg/ml

- c. Select a sample and the list displayed will change
- d. Zoom-In, Zoom-Out and reset the reaction plate.
- e. Sample Auto Arrange
- f. Check Well Table









1.5 Programme Setting

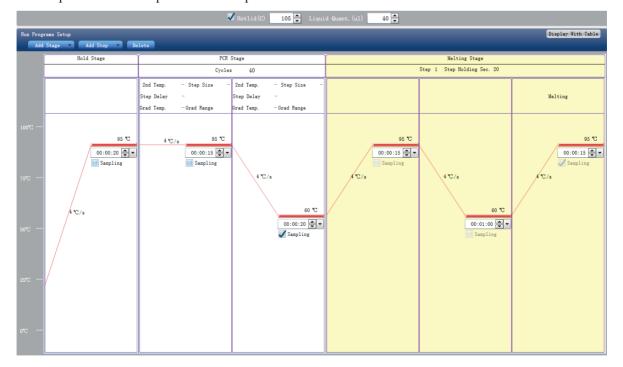
1. Click **Setup** ▶ **Programme**



2. Run Programme Setup

- a. Create new stage: the user can create a new **Hold Stage**, **Cycling Stage** or **Melting Stage**The user can also click **Add Stage** directly and the default will be creating a new **Cycling Stage**.
- b. Create new step: the user can create a new step **Before** or **After** the currently selected step.

 The user can also click **Add Step** and the default will be adding a new Step at the end of the currently selected stage or after the currently selected step.
- c. Delete: the user can delete the currently selected step or stage
- d. Display form: click **Display With Table** ▶ new window will pop up ▶ the details of the current experiment will be displayed in a table.
- e. Set up the experimental data of the hold stage, cycling stage and melting stage melting section
- f. Set up the hot-lid temperature and liquid volume







2. Prepare for Reaction

Start
▼
Design experiment
▼
Prepare for the
reaction
▼
Run the experiment
▼
Experiment analysis
▼
Experiment report
▼
Data export
▼
End

The user should make full preparations prior to the experiment:

- Ensure appropriate materials are used.
- Ensure the arrangement of the PCR reaction plate is consistent with the setting layout of the reaction plate in Section 1.4.





3. Run the Experiment

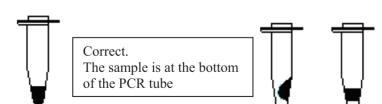
Start
▼
Design experiment
▼
Prepare for the reaction
▼
Run the experiment
▼
Experiment analysis
▼
Experiment report
▼
Data export
▼
End

This section describes how to run/operate the experiment after loading the reaction plate and includes how to operate the fluorescence curve, the temperature curve and programming

Caution: Before starting the machine, please confirm that you have completed the inspection before starting the machine, and carry out the correct operation according to the starting steps. Turn on the system, and the system is in running state.

3.1 Preparation for reagent sample

- Prepare reagent: Quant Gene 9600 series real-time fluorescence quantitative PCR analyzer adopts 0.2ml centrifuge tube to place reagent samples, and 10μ l $\sim 50\mu$ l is recommended for the best reaction system for samples.
- The instrument allows the use of standard single tube, rack tube, skirt-free plate and other types of top optical transparent tube.
- Centrifugal operation: Before placing reactions into the instrument, it is recommended that a short centrifugal spin is used to ensure that the reagent is at the bottom of the reaction tube and the reagent/sample mix is free from bubbles.
- Placement of test tubes: if the number of samples is less than the number of holes in the module, try to distribute the sample tubes evenly in the holes of the module during the placement of test tubes, so as to ensure the smooth pressure of hot cover on the top of the tube during operation. Meanwhile, the load of the module is uniform, and the temperature change of each test tube is uniform.



Incorrect

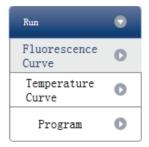
- 1. Requires a greater spin speed
- 2. Requires a longer spin time





3.2 Run Fluorescence Curve

1. Click Run ▶ Fluorescence Curve

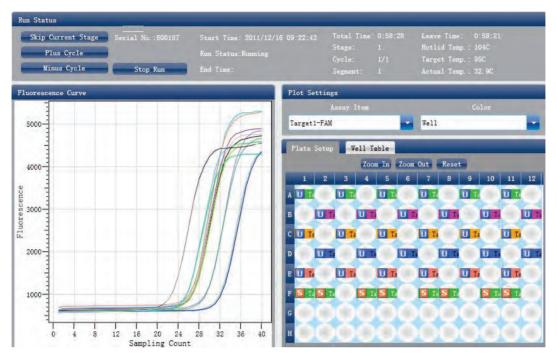


2. Click Start Run



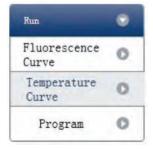
- 3. Operating confirmation
 - a. Modify hot-lid temperature and liquid quantity (sample volume).
- 4. After it starts operating, the user can:
 - a. Skip the current stage
 - b. Add a cycle
 - c. Delete a cycle
 - d. Stop run
- 5. Plot display setting
 - a. Assay item
 - b. Plot colour





3.3 Run Temperature Curve

1. Click Run ▶ Temperature Curve



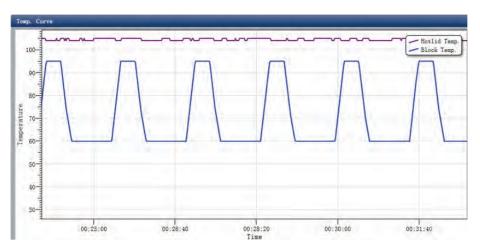
2. Click Start Run



- 3. Operating confirmation
 - a. Modify hot-lid temperature and liquid quantity (sample volume).
- 4. After it starts running, the user can:
 - a. Skip the current stage
 - b. Add a cycle
 - c. Delete a cycle
 - d. Stop run







3.4 Programme Setting

The user can only check the programme setting but cannot make modifications.

3.5 Prompts which may occur during running

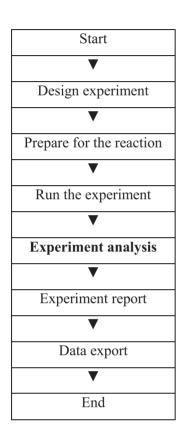
- Hot-lid temperature sensor alarm prompt
- Sink temperature sensor alarm prompt
- Environmental temperature sensor alarm prompt
- Module temperature sensor alarm prompt
- Module sensor short-circuit or short-circuit alarm prompt

Caution: In case the temperature alarm displays during the running of a programme, the PCR detection system will terminate the current programme. The instrument should be switched off and then re-started.





4. Experiment Analysis



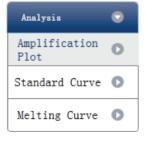
This section describes how to view the experiment analysis results after running an experiment and adjusting parameters for re-analysis.

This section covers the analysis of amplification curves and standard curves, adjusting parameters for re-analysis and importing parameters.

4.1 Check Results

4.1.1 Check the Amplification Plot

1. Click Analysis ► Amplification Plot

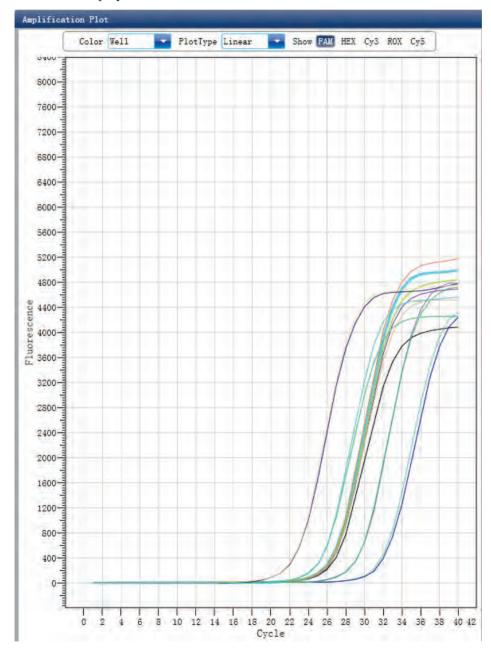






- 2. Check the amplification curve
 - a. Set up colour
 - b. Set up plot type
 - c. Set up show dye

When the background colour of a dye name is blue, it will be displayed; while white indicates it will not be displayed.

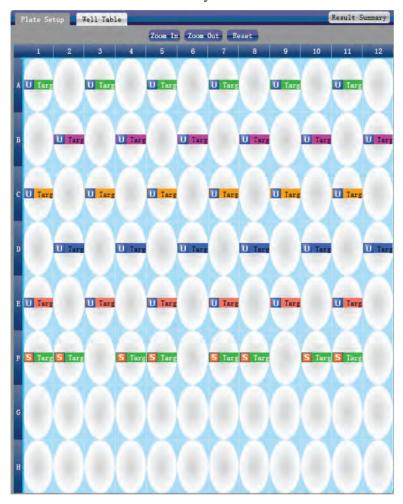






3. Check the reaction plate

- a. Select reaction plate well site and check corresponding well site curve
- The default is all wells are selected
- b. Zoom-In, Zoom-Out and reset the reaction plate
- c. Check well table
- d. Check results summary



4. Set up assay

- a. Set up assay
- b. Set up threshold
- c. Set up automatic baseline

When the threshold value is not automatic, the user cannot set up the automatic baseline







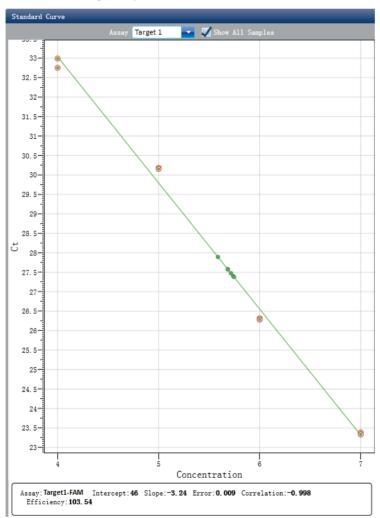
4.1.2 Check Standard Curve

1. Click Analysis ► Standard Curve



2. Check standard curve

a. Set up assay

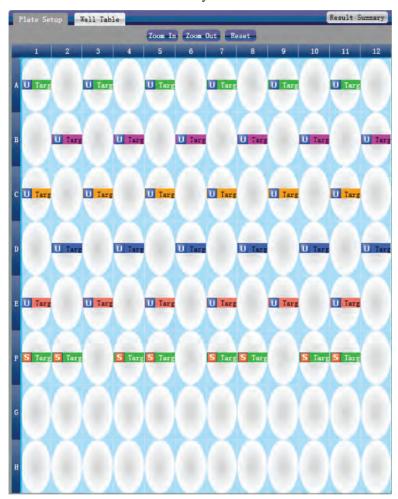






3. Check the reaction plate

- a. Select reaction plate well site and check corresponding well site curve
- The default is all wells are selected
- b. Zoom-In, Zoom-Out and reset the reaction plate
- c. Check well table information
- d. Check results summary



4.1.3 Check Melting Curve

1. Click Analysis ► Melting Curve

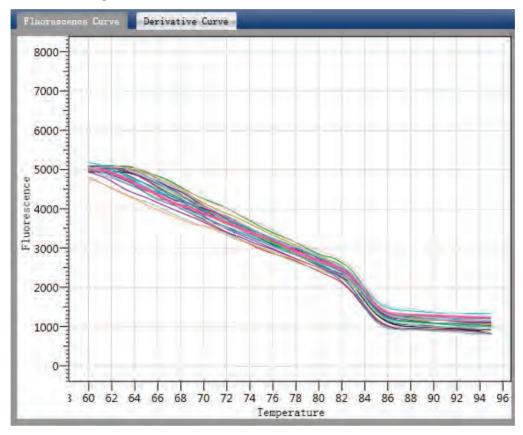






2. Check the melting curve

- a. Check the fluorescence curve
- b. Check the derivative curve
- c. Set up colour

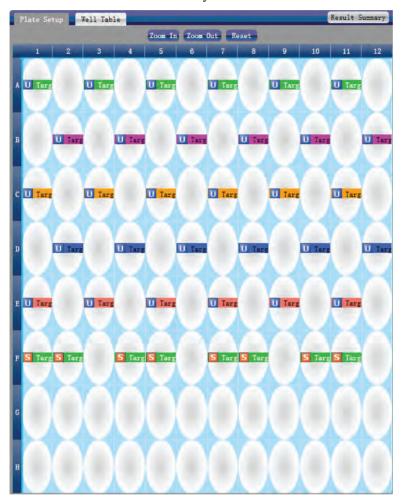






3. Check the reaction plate

- a. Select reaction plate well site and check corresponding well site curve
- The default is all wells are selected
- b. Zoom-In, Zoom-Out and reset the reaction plate
- c. Check well table information
- d. Check results summary



4. Set up assay

- a. Set up assay
- b. Set up colour

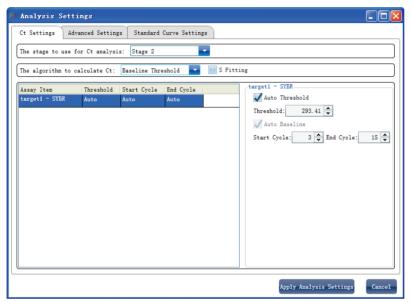






4.2 Adjusting Parameters and Re-analysis

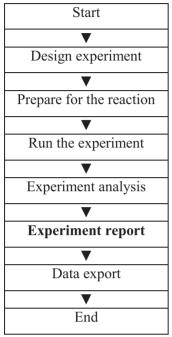
- 1. Click **Analysis Settings** ▶ the Analysis Settings dialog box will pop up
 - a. Adjust the start cycle and end cycle of the baseline
 - b. Adjust Ct analysis algorithm
 - c. Set up the use of S fitting
 - d. Set up the stage to use for Ct analysis
 - e. Set up the automatic threshold value
 - f. Advanced setting
 - g. Standard curve setting







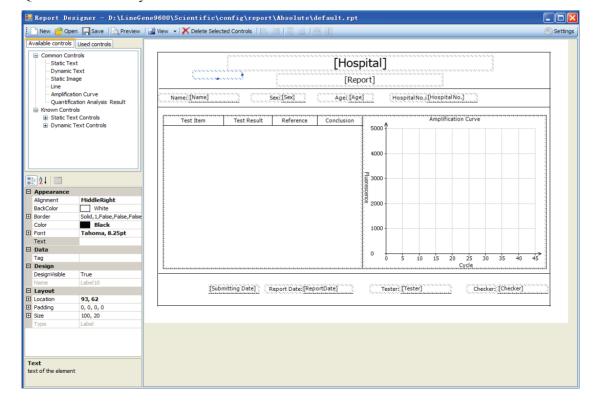
5. Experiment Report



This section describes how to print an experiment report and covers designing of a report template and print settings.

5.1 Designing a Report Template

1. Click **Report** ▶ **Report Template Editor** ▶ the Report Designer window will pop up
The report consists of controls and the user can add, modify and delete controls. Available controls include Static Text, Dynamic Text, Line, Static Image, Amplification curve and Quantification Analysis Results.

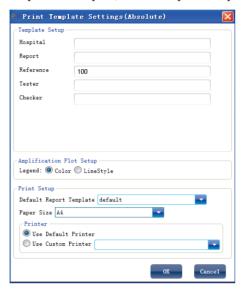






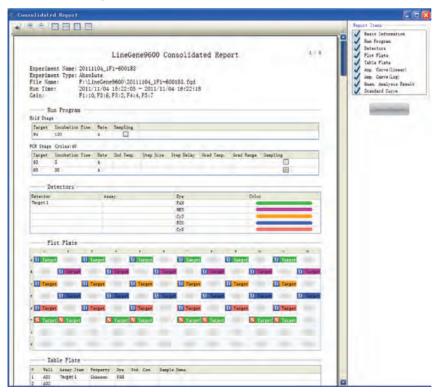
5.2 Print Setting

1. Click **Report** ▶ **Print Template Setting** ▶ the Print Template Setting window will open
The user can set up the laboratory name, report name, reference value, tester, checker, amplification plot, default report template and paper size.



5.3 Comprehensive Report

1. Click **Report** ➤ **Consolidated Reports** ➤ the Consolidated Report window will pop up
The Consolidated Report includes the basic information, sample information, amplification curve, standard curve, plate information, etc..







5.4 Report Printing



- 1. Click **Report** ▶ **Report Print**
- 2. Report print setting
 - a. Set up report template
 - b. Print setting (please refer to Section 5.2)
 - c. Select items to print
 - d. Print preview
 - e. Print the report

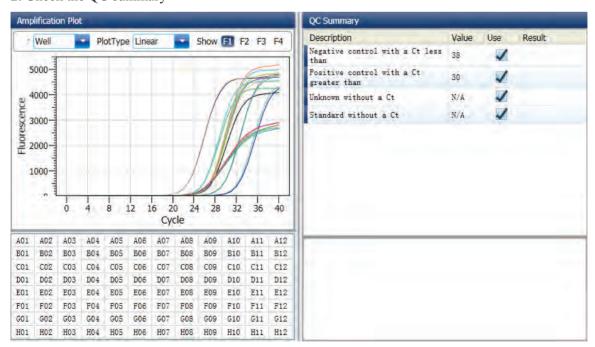


5.5 QC Summary

1. Click **Report** ▶ **QC** Summary



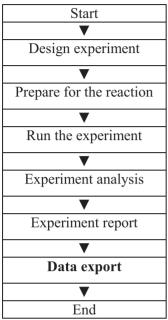
2. Check the QC summary







6. Data Export



This section describes how to export data and covers exporting to a database, experiment filing and exporting the experiment data to EXCEL.

6.1 Export to Database

Click **Data Summary** ► **Export to Database** ► the Save File dialog box will pop up ► save the exported database file

6.2 Experiment Filing

1. Click **Data Summary** ► **Archived Experiment Directory** ► the Experimental archive storage directory window will pop up ► set up the storage path of file.



2. Experiment filing

Click **Data Summary** ► **Archived Experiment** ► export the filed experiment file The suffix of the filed experiment file is .fqh

6.3 Export Experiment Data to EXCEL

Click **Data Summary** ► **Export Experiment** ► **Export Experiment to Excle** ► the exported experiment data will generate EXCEL file

6.4 Export Experiment Data to TEXT

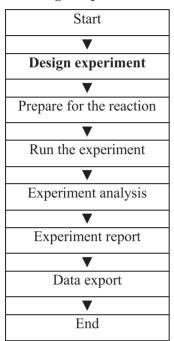
Click **Data Summary** ▶ **Export Experiment** ▶ **Export Experiment to Text** ▶ the exported experiment data will generate TEXT file





Chapter 5 Relative Quantitative

1. Design Experiment



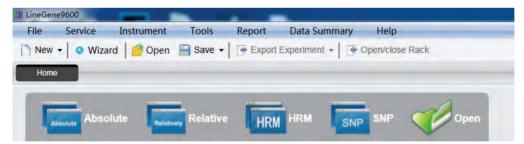
This section describes how to design a relative quantitative experiment and covers creating new relative quantitative experiment, inspection item setting, sample information setting, reaction plate setting and programme setting.

1.1 Create New Relative Quantitative Experiment

1. Click **Relative** on **Home** interface and create Relative Quantitative Experiment window.

Relative quantitative experiment can be also created by:

- a. Clicking **New** ▶ **Relative** on the toolbar
- b. Clicking **File** ▶ **New** ▶ **Relative** on the menu bar



1.2 Detector Setting

1. Click **Setup** ▶ **Detector**





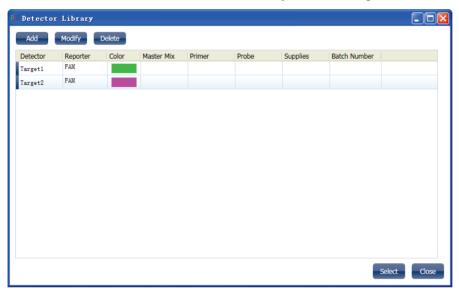


2. Input Experiment Properties

Input the Experiment name, User name and Comment in the basic information column.

- 3. Inspection Item Setting
 - a. Set up the Detector, Assay, Dye and Colour.
 - b. Add detector
 - c. Delete detector
 - d. Add detector from library

The user can also conduct Add, Modify and Delete operations in the item library.





4. Set up reference dye



- 1.3 Sample Information Setting
- 1. Click **Setup** ▶ **Sample**







2. Add sample information

- a. Itemized addition: input ID in **Sample ID** ▶ press **Enter** ▶ add information for one sample.
- b. Batch addition: click **Batch Add** ▶ the Batch Add window will pop up

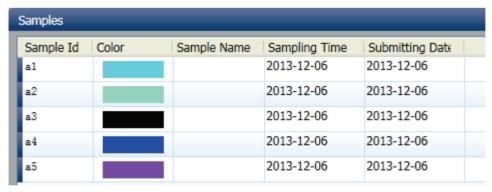


3. Delete sample information

- a. Itemized deletion: select one sample \blacktriangleright click **Delete** \blacktriangleright delete the selected sample information
 - b. Delete all: click **Clear All** ▶ delete all sample information
- 4. Import/Export sample information
 - a. Click **Import Sample Info** ► the File Import window will pop up ► import sample information file in CSV format
 - b. Click **Export Sample Info** ► the Save As window will pop up ► the sample information will be exported in CSV file format



5. Set up sample information







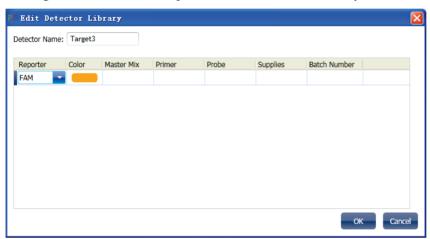
1.4 Reaction Plate Setting

1. Click Setup ▶ Plate



- 2. Set up the inspection criteria of the reaction plate
 - a. Select reaction plate well site: click Reaction Plate well Site

The user can also right click the reaction plate well site to Copy, Paste and Add New Detector. Adding a new detector will open the **Edit Detector Library** window.



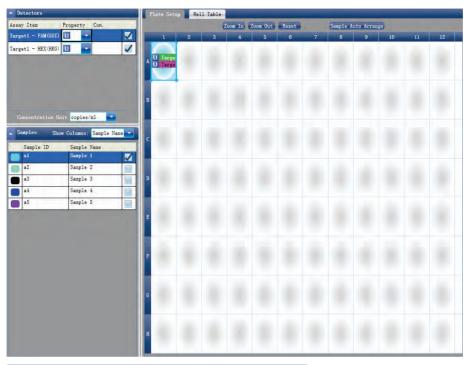
b. Select inspection item and modify the property, concentration and concentration unit.

Property	Name	Concentration	Concentration unit
U	Unknown	NO	Copies/ml
S	Standard	YES	IU/ml
N	Negative	NO	Fg/ml Pg/ml
			1 g/1111

- c. Select a sample and the list displayed will change
- d. Zoom-In, Zoom-Out and reset the reaction plate.
- e. Sample Auto Arrange
- f. Check Well Table









1.5 Programme Setting

1. Click **Setup** ▶ **Programme**



2. Run Programme Setup

a. Create new stage: the user can create a new **Hold Stage**, **Cycling Stage** or **Melting Stage**

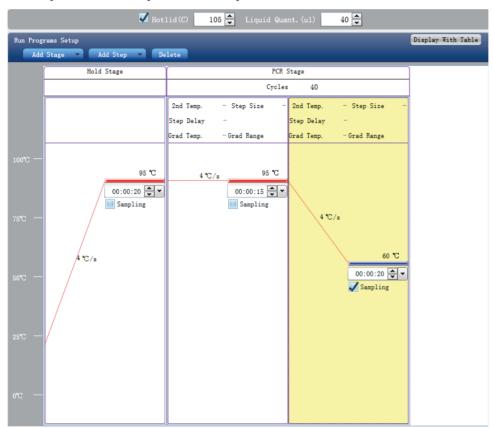




The user can also click **Add Stage** directly and the default will be creating a new **Cycling Stage**.

- b. Create new step: the user can create a new step **Before** or **After** the currently selected step.

 The user can also click **Add Step** and the default will be adding a new Step at the end of the currently selected stage or after the currently selected step.
- c. Delete: the user can delete the currently selected step or stage
- d. Display form: click **Display With Table** ▶ new window will pop up ▶ the details of the current experiment will be displayed in a table.
- e. Set up the experimental data of the hold stage, cycling stage and melting stage melting section
- f. Set up the hot-lid temperature and liquid volume







2. Prepare for Reaction

2.11
Start
▼
Design experiment
▼
Prepare for the
reaction
▼
Run the experiment
▼
Experiment analysis
▼
Experiment report
▼
Data export
▼
End

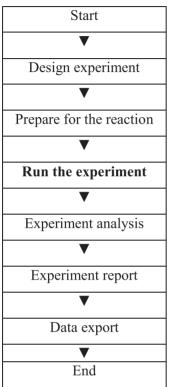
The user should make full preparations prior to the experiment

- Ensure appropriate materials are used.
- Ensure the arrangement of the PCR reaction plate is consistent with the setting layout of the reaction plate in Section 1.4.





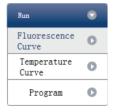
3. Run the Experiment



This section describes how to run/operate the experiment after loading the reaction plate and includes how to operate the fluorescence curve, the temperature curve and programming

3.1 Run Fluorescence Curve

1. Click Run ▶ Fluorescence Curve



2. Click Start Run

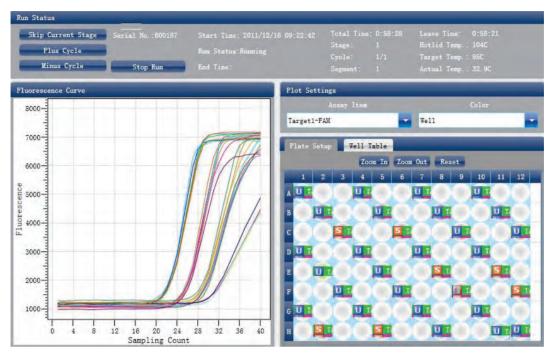


- 3. Operating confirmation
 - a. Modify hot-lid temperature and liquid quantity (sample volume)
- 4. After it starts running, the user can:
 - a. Skip the current stage
 - b. Add a cycle
 - c. Delete a cycle
 - d. Stop run
- 5. Plot display setting



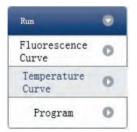


- a. Assay item
- b. Plot colour



3.2 Run Temperature Curve

1. Click Run ▶ Temperature Curve



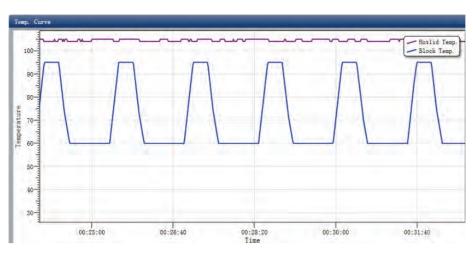
2. Click Run ▶ Start



- 3. Operating confirmation
 - a. Modify hot-lid temperature and liquid quantity (sample volume)
- 4. After it starts running, the user can:
 - a. Skip the current stage
 - b. Add a cycle
 - c. Delete a cycle
 - d. Stop run



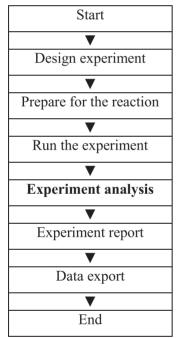




3.3 Programme Setting

The user can only check the programme setting but cannot make modifications.

4. Experiment Analysis



This section describes how to view the experiment analysis results after running an experiment and adjusting parameters for re-analysis.

This section covers the analysis of amplification curves and standard curves, the analysis of relative quantification, adjusting parameters for re-analysis and importing parameters.

4.1 Check Results

4.1.1 Check the Amplification Plot

1. Click Analysis ► Amplification Plot



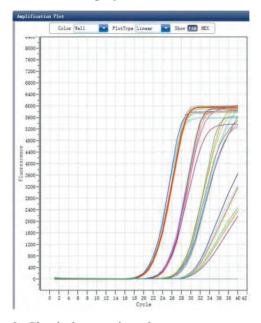
2. Check the amplification curve





- a. Set up colour
- b. Set up plot type
- c. Set up show dye

When the background colour of a dye name is blue, it will be displayed; while white indicates it will not be displayed.



- 3. Check the reaction plate
 - a. Select reaction plate well site and check corresponding well site curve

The default is all wells are selected

- b. Zoom-In, Zoom-Out and reset the reaction plate
- c. Check well table
- d. Check results summary







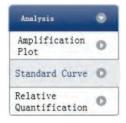
- 4. Set up assay
 - a. Set up assay
 - b. Set up threshold
 - c. Set up automatic baseline

When the threshold value is not automatic, the user cannot set up the automatic Baseline



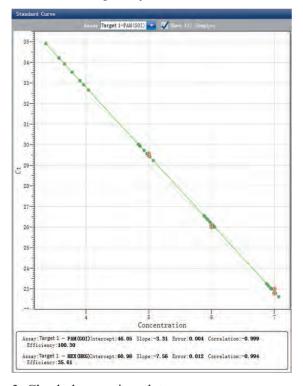
4.1.2 Check Standard Curve

1. Click Analysis ► Standard Curve



2. Check standard curve

a. Set up assay



3. Check the reaction plate

a. Select reaction plate well site and check corresponding well site curve The default is all wells are selected

> GENTECH BIOSCIENCES