Operation Manual

Version 1.0



NB-12-0035-27 Microplate Reader PC Software



I

Thanks for purchasing our Microplate reader. This Operation manual describes PC software functions and how to operate. Please read it carefully before operation and keep this operation manual for later use.

Initial Inspection

Please check the instrument, as well as all included accessories according to the packing list when you first open the packaging, if you find any damaged or missing, please contact distributor or manufacturer.

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Chapter 1 Introduction

This microplate reader is an instrument for EIA test, measuring concentration, absorbance,

measuring positive or negative reaction between antibody and antigen in samples by reading

enzymatic color change – Enzyme Linked Immunosorbent Assay (ELISA).

Key Features and Benefits:

1) Easy-to-use controls: 7 inch, color touch screen and 3 external keys.

2) Operating system allows acquisition, editing and saving of data.

3) Can be used independently from a computer, data can be saved and transferred by USB drive.

4) 8 position optical filter wheel; 4 standard optical filters are included, additional optional filters are available.

5) 8 channel vertical optical path, zero dispersion single mode fiber measurement system,

automatic plate well center position function.

6) 96-well visual layout allows easy setting of blank, sample, positive/negative control, quality

control and multi-value control.

- 7) Multi-choice tests on single plate.
- 8) Single or double wavelength measurement.
- 9) Self-checking optical path, top reading, mechanical motion.
- 10) Adjustable Plate shaking function, time and speed.
- 11) Quartz Halogen, energy saving light source.
- 12) Multiple ports for data export.
- 13) Measurement results can be exported as .CSV file, compatible with MS Excel.

Chapter 2 Features

Operating conditions:

Ambient operating temperature: $4^\circ C \sim 45^\circ C$

Relative humidity: \leq 70%

Input power: AC100~240V 50/60Hz 2A

Model Parameter	Microplate reader
Light source	6V, 10W, Quartz-Halogen lamp
Light source est. life	300 hours
Wavelength	400~750nm
Optical filter	Four standard filters included: 405,450,492,630nm. Filter wheel holds up to 8 filters.
Detector Type	Silicon photodetector
Read-out range	0.000-4.000 Abs
Resolution	0.001Abs
Linearity	±1% (0~2.000A) , ±2% (2.000~4.000A)
Precision	CV≤0.2% (0-3Abs); CV≤1% (3-4Abs)
Accuracy (450nm)	±0.005Abs (0 ~2.0 Abs),±1% (2.0~3.0 Abs),±1.5% (3.0~4.0 Abs)
Channel deviation	<0.01Abs at 450nm
Massurament Speed	Single wavelength <15s/96well plate, double wavelength
measurement speed	<28s/96well plate (Normal speed setting)
Dimension (WXDXH)	295x440x225mm / 11.5x17x9 inches
Weight (kg)	10kg

Chapter 3 Instrument Overview

Before first use of this instrument, please read this chapter carefully.

Structure



There are three input buttons: "Start" "Stop" and "Plate in/out"

USB Ports: For connection of keyboard, mouse and USB drive. (the upper port is for printer connection) Data port: for PC connection. (contact Neo Biotech or distributor for updated software and features) Internet port: for PC connection. (contact Neo Biotech or distributor for updated software and features) Rear door panel: can opened to replace light source and access optical filter wheel. Knob: To lock and unlock the rear door.

Chapter 4 Software Installation

Section 1 Installation Environment

Operation system: Windows7, 64byte, as Fig 1.

Control Panel +	System and Security System		+ 4+	Search Control Panel	0
Control Panel Home Control Panel Home Control Panel Home Remote settings System protection Advanced system settings	View basic information Windows edition Windows 7 Home Basic Copyright © 2009 Microso Service Pack 1 Get more features with a n	about your computer ft Corporation. All rights reserved. ew edition of Windows 7	• • • •		•
	System Rating: Processor: Installed memory (RAM): System type: Pen and Touch:	Windows Experience Index Intel(R) Pentium(R) CPU G3220 @ 3.00GHz 4.00 GB 64-bit Operating System No Pen or Touch Input is available for this Display			
See also Action Center Windows Update Performance Information and Tools	Computer name, domain, and Computer name: Full computer name: Computer description: Workgroup:	workgroup settings yeqi-PC yeqi-PC WORKGROUP		😵 Change settini	gs.

Fig 1

Section 2 Installation Procedures

2.1 Software Installation

- 1. Click icon B AMR-100.exe
- 2. Choose installation path way, then click "Next", as Fig 2.

Setup - AMR-100	
Select Destination Location Where should AMR-100 be installed?	
Setup will install AMR-100 into the following	folder. Jifferent folder, click Browse.
C:\AMR-100	Browse
At least 95.1 MB of free disk space is required.	
	Next > Cancel

Fig 2

3. Please choose "Create a desktop shortcut" if needed, as Fig 3.

B Setup - AMR-100	
Select Additional Tasks Which additional tasks should be performed?	
Select the additional tasks you would like Setup to perf then dick Next.	orm while installing AMR-100,
Additional shortcuts:	
Create a <u>d</u> esktop shortcut	
	Next > Cancel

Fig 3

4. Then "Next" to installation interface as Fig 4 and 5.

Ready to Install		
Setup is now ready to begin installing	AMR-100 on your computer.	Ċ
Click Install to continue with the insta change any settings.	illation, or click Back if you want to review or	
Destination location: C:\AMR-100		*
Start Menu folder: AMR-100		
Additional tasks: Additional shortcuts: Create a desktop shortcut		
		Ŧ
*	F	

Fig 4

Setup is now ready to begin installing	AMR-100 on your computer.
Click Install to continue with the instal change any settings.	lation, or click Back if you want to review or
Destination location: C:\AMR-100 Start Menu folder: AMR-100 Additional tasks: Additional shortcuts: Create a desktop shortcut	
4	F

Fig 5

2.2 Environment Installation

1. Interface of environment installation will pop out after the above installation finished,

choose "I agree to the license terms and conditions" then click "Install" to next step, as Fig 6.





2. Then click "Install " to enter interface as Fig 7 and Fig 8 below.





Fig 8

3. Please confirm if the installation is successful in "Control Panel" which path is "control

board" \rightarrow "Programs" \rightarrow "Programs and Features " as highlighted in Fig 9.

Control Panel Home View installed updates Turn Windows features on or off	Uninstall or change a program To uninstall a program, select it from the list and then o	lick Uninstall, Change, or Repair.	•7 Search	Programs and P	eotores
	Organize 🕶				
	Name	Publisher	Installed On	Size	Version
	 ★ Microsoft Visual C++ 2017 Redistributable (x64) - 14.1 ★ Microsoft Visual C++ 2017 Redistributable (x86) - 14.1 ■ DNA1701 版本 V1.00 ● 360安全浏览課 ● 数約課序版本 1.5 	Microsoft Corporation Microsoft Corporation 遠思生物 這思生物 360安全中心 我的公司 遠思生物	7/27/2017 7/27/2017 4/3/2018 7/27/2017 9/27/2018 7/27/2017 7/27/2017	191 MB 68.1 MB 3.68 MB 127 MB	10.3.0.2001 8.1.1.152 1.00 1.0.0.1200 1.0 2.3 1.0.16.1114
	Microsoft Visual C++ 2017 x64 Additional Runtime - 14. Microsoft Visual C++ 2017 x64 Minimum Runtime - 14. Microsoft Visual Studio 2010 Tools for Office Runtime (. Microsoft Visual C++ 2017 x86 Additional Runtime - 14. Microsoft Visual C++ 2017 x86 Additional Runtime - 14. Microsoft Visual C++ 2017 x86 Additional Runtime - 14. Microsoft Visual C++ 2013 Redistributable (x64) - 12.0.	Microsoft Corporation Microsoft Corporation Microsoft Corporation Microsoft Corporation Microsoft Corporation Microsoft Corporation Microsoft Corporation	4/3/2018 4/3/2018 9/27/2018 9/27/2018 12/20/2017 7/27/2017	38.8 MB 280 KB 552 KB 77.6 MB	1.0.0.0 4.6.01590 8.0.61187 8.0.61186 1.00 1.0.16.1114



2.3 DriverSetup Installation

1. DriverSetup(X64) will pop out once the above installation finished, as Fig 10.

Select INF File :	CH341SER.INF
INSTALL	WCH.CN
UNINSTALL	11/04/2011, 3.3.2011.11
HELP	

Fig 10

2. Click "INSTALL" and then the interface will pop out as Fig 11.

elect INF	File : CH341SER.INF	
DriverSetup	ρ	×
	The drive is successfully Pre-installed in adv	ance:

Fig 11

*Attention: This software maybe can not work properly if there is any Chinese character in the path or

the path is too long.

Chapter 5 Operation Instruction

Section 1 Startup Interface

Startup interface as below Fig 12.



Fig 12

- 1. Load and verify required resource files.
- 2. Animations presentation.
- 3. Check the connection and acquire basic information.
- 4. Automatically match the proper port during the connection.
- 5. Jump to the next interface.

Section 2 Main Interface

	Edit		_ 🗆 ≥
Shortcut Start	Layout Step Results Report	2	
Endpoint Kinetic Step			Connect
T Demoi* 🖾 T Demo2*	🛛 🔽 Demo3* 🔄 🕘		
Step setup			Info
Wavelength	6 Shake Settings:	Step	🖌 📷 Layout
Shake	The second	WL1: NO WL2: NO	Plate1 🕖
	Shake Time: 00:00:01 HH:MM:SS	Meas. Standard	🖌 🔝 Step
		Shake: Close	🕞 Endpoint
	Shake Rate:		🔺 🐖 Results
	💿 High 🔿 Medium	Low	🖌 🔂 Endpoint
	Shake Type:		🕒 🎹 Platel
	Continue.		🚺 Standard_O 🖌 🖷 Report
			Plate Run
			<u> </u>

Detecting interface as Fig 13 which is composed by 8 parts, please see below table.

Fig 13

No.	Name	Function
1	Title	Including three functions: minimization, maximization and shut off.
	Menu	Switching among "Shortcut", "Start", "Layout", "Step", "Results" and
2		"Report"
3	Toolbar	Sub-bar of the Menu
4	Protocol	Switching among protocols
5	Status	Control connection with Microplate Reader
6	Parameter info.	Displays setting information and results
7	Protocol tree	Including "Info", "Layout", "Step", "Results" and "Report".
8	Control bar	Controlling plate in/out and protocol running

2.1 Title

This part including three functions : minimize, maximum and shut off.

2.2 Menu

Please see below table:

Content	Function
Shortcut	Including "New", "Open", "Save" and "Export".
Start	Including "New", "Open", "Save", "Save as", "Settings", "Language"and "Help".
Layout	Click to Layout interface
Step	Click to Step interface
Results	Click to Result interface
Report	Can export report in excel format.

2.3 Toolbar

For protocols operation, like "Demo1" "Demo2" "Demo3" etc.

2.4 Protocol

Displays opened protocols, Demo1, Demo2 and Demo3 are three default protocols.

2.5 Status

Two buttons included: "Connect/Disconnect" and "Logout", if click "Connect" in the main interface, it will connect to the Microplate Reader.

* Remark: If connected, both "Disconnect" button in the upper-right corner and in the lower-left corner will appear, or "Connect" and will appear when instrument disconnected.

2.6 Parameter info.

Including setting information and results.

2.7 Protocol tree

Displays the current protocol and newly added steps.

Click protocol tree can switch to selected steps quickly.

2.8 Control bar

Including two buttons "Plate in/out" and "Run".

Section 3 Information

It will enter into detection interface which including "Info", "Layout", "Step", "Results" and "Report"

after the software started, "Info" is the default interface as Fig 14.

AMR	Edit		_ 🗆 🔼
Shortcut Start L	ayout Step Resul	ts Report	
New Open Save Expor Procedure	t Folder		Connect Logout
🔽 Demol* 🖾 🔽 Demo2* 🖾	Demo3* 🚳		
genaral situation			🖌 😇 Info
message			File Execution state :: Non-execution

Fig 14

Info interface is composed by two parts: shortcut and start, mainly includes "New", "Open", "Save",

"Export", "Path" "System" etc.

3.1 Document Management

3.1.1 New

Click "New" in "Shortcut" or "Start" to create a new protocol as Fig 15 below. Only protocol that without

test data is with icon T, protocol that with test data is without icon T.

AMR	Edit			_ 🗆 🔀
Shortcut Start	Layout Step Re	sults Report		
New Open Save E	ixport Path			
Procedure	Folder			Connect Logout
Demoi 🛛 🖬 Demo2	🛛 🚺 Demo3 🛛	New Protocol4		
genaral situation				
message			File Execution state : Non-execution	A III Layout
			*	A Results
				🖌 🥅 Report
Auto Sending				Carlandor y and Carlador - Code and
				4 [III] }
				Plate In/out Run
-				

Fig 15

3.1.2 Open

Click "Open" in "Shortcut" or "Start", default path is "Pro_Save" file under installation directory as Fig 16.

AMR	E	dit			_ 8 🔰
Shortcut Start	Layout Step	Results Report			
New Open Save	Export Path				
💮 Open]	Corney
() () () () () () () () () () () () () (Pro_save	▼ ¥• Search /	Pro_save		
Organize 🔻 New folder			II • 0		🔺 🚃 Info
 ★ Favorites ➡ Desktop ➡ Downloads ➡ Recent Places ➡ Libraries ➡ Documents ➡ Music ➡ Pictures ➡ Videos 	Name	01/1	e modified Type	n state : Non-execution	 ▲ ■ Layout ■ Plate 1 ▲ ■ Step Sep Sendpoint ▲ ♥ Results ▲ ♥ Endpoint ▲ ■ Plate 1 ♥ Standard_0
File name: Demo:		m	-		A 🖶 Report
Save as type: xis (*.xis)		Oper	a Cancel		

Fig 16

3.1.3 Save

• Save files by "Save" or "Save as" button, default path is "Pro_Save" file under installation directory

which is also can be changed as Fig 17.

Shortcut Start					
	Layout Step	Results Report			
New Open Save	ixport Path				
😡 Save As					
AMR-100 •	Pro_save	★ ★ Search Pr	o_save		
Organize 👻 New folder			II • 0		at 📟 Info
 ➢ Favorites ➢ Desktop ➢ Downloads Recent Places ➢ Libraries ➢ Documents ➢ Music ➢ Pictures Videos 	lame	Date: 01/11	modified Type pn I/2018 16:33 MTH 文件	state : Non-execution	Im Layout Im Plate1 Im Plate1 Im Findpoint Im Plate1 Im Plate1 Im Plate1 Im Plate1 Im Standard_0
🖳 Computer 👻 🗧		III	•		4 📻 Report
File name: Demo3 Save as type: xls (*.xls)			•		
😸 Hide Folders		Save	Cancel		

Fig 17

• Click "Save" in "Start" menu, protocol saved in "Pro_Save" file in installation director, then click

"OK" to finish. Please note: the saving path can not be changed.

AMR	Edit		_ 🗆 🔀
Shortcut Start Lay	yout Step Results Report		
New Open Save Save as Procedure	s Settings Language Help System		Connect
Demo1* 🖾 🗊 Demo2* 😣	Demo3*		
genaral si Iessage:			A 📰 Info
message Sure to s To the de C:\Users\hn Auto Sendi	save it:Demo3 :fault protocol path: ujr\Desktop\AS112_AS_20180917_ST h OK	ation state : Non-execution	Layout Elatel Layout Elatel Step Endpoint Results MEndpoint MEndpoint MEndpoint MEndpoint MEndpoint MENDPOINT Flatel Elatel MENDPOINT Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Results Resul
—			

Fig 18

3.1.4 Export

Click "Export" in "Shortcut" menu, default export path is "EXCEL_save" file in installation directory, the

path can be changed as Fig 19.

AMR	Edit				_ 🗗 🔀
Shortcut Start	Layout Step Results	Report			
New Open Save	Export Path				
O Save As					
OO - 😹 « AMR-100)	► EXCEL_save 🗸 🖌	Search EXCEL_so	ive P		
Organize 👻 New folder			8⊞ ▼ @		A 📟 lofo
 ★ Favorites ➡ Desktop ➡ Downloads ➡ Recent Places ➡ Libraries ➡ Documents ➡ Music ➡ Pictures ➡ Videos 	Name Demo3_20180925_155411.xls Demo3_20180925_155503.xls	Date modifi 9/25/2018 4 9/25/2018 4	ed Type pri 54 PM XLS File 555 PM XLS File	state : Non-execution	▲ ■ Layout ■ Plate1 ▲ ■ Estep
File name: Demo3 Save as type: xls (*.xls)	III _20181105_173651)	Save	Cancel		A 🖷 Report

Fig 19

3.1.5 Path

• Click "Path" button to open the path of the last time exporting as Fig 20.



Fig 20

3.2 System settings

3.2.1 Settings

The absorbance and concentration can be set, only for their decimal place(Default value of absorbance is three decimal while two for concentration), as below Fig 21.

	Edit		_ 🗆 🔀
Shortcut Start Layout	Step Results Report		
New Open Save Save as	Settings Language Help		Connect
Procedure	System		
Demoi* C Demo2* C T	setup		d 📼 Tafa
message	ABS. Data : Conc. Data :	3 decimals. 2 decimals.	A I Layout III Platel A III Step
Auto Sending		OK Cancel	 M M Results M M Results M M Repoint M H Platel M Standard_0
			Report

Fig 21

3.2.2 Language

Language can be switched between Chinese and English. Restart needed once language changed.

AMR	Edi t		_ 0
Shortcut Start La	ayout Step Results Report		C
New Open Save Save a Procedure	as Settings Language Help System		Connect
🚺 Demol* 🖾 🖬 Demo2* 🖾	Select Language		
genaral situation message Auto Sending	〇 中文 The switch language will s to save the file!	 English restart the program! Please pay attention OK Cancel 	 Info Info Layout Platel Step Endpoint Results Platel Standard_0 Plate Infot Run

Fig 22

Section 4 Layout

4.1 Layout Parameters

Two options in Layout interface: "New" and "Delete". For now only one 96-well plate allowed to be

newly added.

AMR	Edi t		_ 🗆 🔀
Shortcut Start	Layout Step Results Report		
Undo Redo Reset			Connect
🔽 Demol* 🖾 🚺 Demo2*	🔯 🔟 Demo3* 📓		
Plate			I 📰 Info
Type: ANSI/SB	5 Standard, 96-well 🔹 New	Delete	🖬 Layout
Name		Туре	E Platel
			C Endpoint C Results C Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint E

Fig 23

4.2 Plate layout parameters information

1) Plate layout interface is composed by two parts: "Plate Layout" and "Type" (as Fig 24). "Plate" button is for positions layout while "List" for protocol list and result list, see below Fig 25 and Fig 26.



Fig 24

			Edi	t				
Short	tcut Start	Layout	Step	Results	Report			
do Re Ed	t C Reset							Connect Log
Demo1*	🛛 🚺 🗾 Demo	2* 🖾 🚺	Demo3* 🔯					
'late1						Plate L:	ist	⊿ ∰ Info
Plate	Well	Group	Type	Name	Concentration	Dilution		🔺 📷 Layout
Plate1	A1	Group	Standard	Standard1	0	1.000000		Plate1
Plate1	A2	Group	Unknown	1	0	200.000000	=	
Plate1	A3	Group	Unknown	9	0	200.000000		🔺 🇮 Step
Plate1	A4	Group	Unknown	17	O	200.000000		🕞 Endpoint
Plate1	A5	Group	Unknown	25	0	200.000000		A 🕅 Results
Plate1	A6	Group	Unknown	33	0	200.000000		A In Results
Plate1	A7	Group	Unknown	41	0	200.000000		🔺 🚮 Endpoint
Plate1	AB	Group	Unknown	49	O	200.000000		🔺 🎟 Plate1
Plate1	A9	Group	Unknown	57	0	200.000000		1754
Plate1	A10	Group	Unknown	65	O	200.000000		💹 Standard_O
Plate1	A11	Group	Unknown	73	0	200.000000		🔺 📻 Report
	A12	Group	Unknown	81	o	200.000000	l	n bergebener
Plate1								
Plate1 Plate1	B1	Group	Standard	Standard2	2	1.000000		Plate

Fig 25

			Edit	Provider	Present			- 1
Shor	tcut Stari	Layout	Step	Kesults	Keport	8		
ank Ave	50 + = V% × = rage Calc.	Standard	Kinetic	1/% Norm. % Dilutio	r () QC			
В	ass		C	Cover				Connect Log
Demo1*	🖾 🖬 Demo	2* 🖾 🗖 De	2mo3* 🐻					
latel						Plate	List	🖌 🚟 Info
Plate	Well	Group	Type	Name	favelength	ABS		🔺 📷 Layout
Plate1	A1	组	Standard	Standard1	450 nm	0.070747	~	III Plate1
Plate1	A2	Group	Unknown	1	450 nm	0.075575	=	
Plate1	A3	Group	Unknown	2	450 mm	0.062879		A := Step
Platel	A4	Group	Unknown	3	450 xm	0.067432		no Endpoint
Plate1	AS	Group	Unknown	4	450 rm	0.070297		A 🕅 Results
Platel	AB	Group	Unknown	5	450 mm	0.068043		- Windards
Plate1	A7	Group	Unknown	6	450 rm	0.059928		🔺 👝 Endpoint
Platel	AB	Group	Unknown	7	450 xm	0.064670		🖌 🎹 Platel
	10	Group	Unknown	8	450 nm	0.063787		ET 0. 1 10
Plate1	N3							Standard_U
Plate1 Plate1	A10	Group	Unknown	9	450 rm	0.067118		States - States
Plate1 Plate1 Plate1	A10 A11	Group Group	Unknown Unknown	9 10	450 ນາ 450 ນາ	0.067118 0.064140		🖌 📻 Report
Platel Platel Platel Platel	A10 A11 A12	Group Group Group	Unknown Unknown Unknown	9 10 11	450 zm 450 zm 450 zm	0.067118 0.064140 0.066084		🖌 🖷 Report
Plate1 Plate1 Plate1 Plate1 Plate1 Plate1	A10 A11 A12 B1	Group Group Group 组	Unknown Unknown Unknown Standard	9 10 11 Standard 2	450 zm 450 zm 450 zm 450 zm	0.067118 0.064140 0.066084 0.057906		A 🖷 Report

Fig 26

2) Plat layout setting: in the "Layout" interface, choose the type needed, the button will turn gray(as Fig 27), then click wells in "Play Layout" area. If the type of a well need to be changed, choose clear first, then change the corresponding well. There are 7 types of well: Blank, Standard, QC, Unknown, Negative, Positive and Clear.

AMR	Edit	_ 🗆 📐
Shortcut Start	Layout Step Results Report	
Undo Redo Reset		Connect Logout
Demo1* 🖾 🔽 Demo2*	🖾 🚺 Demo3* 🖾	
Platel		Plate List
Plate TypeANSI/SBS Standard	96-well Zoom:	Blank Group:
1 2 3 4	5 6 7 8 9 10 11 12	Group 📰 Platel
A Long		Standard Name:
B Lone 20		QC Benlicates
C 1/07/07		r, 1 column * 1 rows
D 10000		Concentration:
ZD XT 14-5		Nagetive Conc.:1 Step by: +1
20 ZH		Positive
		First: 1
G		Clear Step by: 1
н		Unit: Unit Flate Run
	Plate Layout	Туре

Fig 27

3) About plate type:

Blank: used for blank control, you can set several wells as blank.

Standard: Standard sample well in dark green are for setting standard curve, you can set several wells with the same number of standard sample, operator can be "+", "-", " \times ", " \div " and " step by" can be any integer as Fig 28.

Blank	Group:					
	Group					
Standard	Name:					
	Standard					
QC C	Replicates					
Unknown	1 column *	1 rows				
	Concentration:					
Negative	Conc.:1 St	ep by: +1				
	series	value				
Positive	First:	1				
Clear	Operator:	+ τ				
	Step by:	1				
	Unit:	Unit				



QC: QC control positions are in dark yellow, the setting procedure is the same as that for standard sample position.

Unknown: In light blue, several positions can be set as unknown. Click the right place of the "Unknown" button, it can be named freely, the prefix part can accept numbers, letters, even Chinese characters, but for the suffix part, only numbers accepted(except 0). Dilution ratio also can be set, default value is1:200 as below Fig 29.

Remark: If sample dilution ratio changed, all sample positions dilution ratio in plate layout also will be changed.

Negative: Negative control position in purple, you can set several positions as negative

control.

Positive: Positive control position in light yellow, also several positions can be set as positive control.



Clear: positions in gray without samples.



Section 5 Step

"Step" interface as below:

	Edit		_ 🗆 📈
Shortcut Start	Layout Step Results Report		
Endpoint Kinetic Step			Connect
🚺 Demo1* 🖾 🚺 Demo2*	🔯 🚺 Demo3* 🚳		
Step setup			A 🔚 Info
Wavelength	Wavelength settings	Step	🔺 📷 Layout
Shake	1	WL1: NO	Plate1
JIAKC		Meas Standard	🖌 🧱 Step
		no Shake: Close	500 Endpoint
			🔺 🏹 Results
	O no O no O no) no	🖌 📊 Endpoint
	O no O no O no) no	A 📰 Platel
	Measurement		📝 Standard_0
	🔿 Fast 🧿 Stand	ard	📕 📻 Report
			Flate Run
—			

Fig 30

5.1 End-point method

End-point method including two sections: Wavelength and Shake as Fig 31, Fig 32 below.

Wavelength	Wavelength settings							
Shake	VII WLI							
	🔿 405rm 💿 450rm 🔿 492rm 🔿 630rm							
	O no O no O no							
	W12							
	0 405nm 0 450nm 0 492nm 0 630nm							
	no no no no							
	Measurement							
	🔿 Fast 💿 Standard							

Fig 31

Wavelength	Shake Settings:
Shake	
	Shake Time: 00:00:01 HH:MM:SS
	Shake Rate:
	💿 High 🔿 Medium 🔿 Low
	Shake Type:
	 Continue



Note: "WL1" and "WL2" can not be with the same wavelength simultaneously.

Section 6 Results

Result interface as below Fig 33.

AMR			Edi t										_ # 🔀
100	Shortcut	Start Layout	t Step Re	sults Report									
Bla	nk Average C	alc. Stand	lard Einstic	% Norm. 🔅 Dilution ()	9C								Disconnect Logout
	Dass			rer									
1 1	lenol* 🖾 🚺	Deno2* 🖾 🔽	Deno3* 🔤										
P	latel										Plat	e List	4 III Info
						Zoon: -	0				A	+ 33	4 III Lawout
	1	2	3	4	5	6	7	8	9	10	11	12	- Dayout
	标准计	1	9	17	25	33	41	49	57	65	73	81	III Fistel
A	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	= := step
	31	Group	Group	Group	Group	Group	Group	Group	Group	Group	Group	Group	6. Endpoint
	STORE.	2	10	18	26	34	42	50	58	66	74	82	A MR Results
в	0.000	Grown	Group	Group	Group	Group	Group	Group	Group	Group	Group	Group	A Gal Endpoint
	an a	0. 0 up	11	10	07	ar	12	61 0 up	E0.	0.7	ne	02	# Platel
	0.000	3	11	0.000	0.000	0.000	43	51	0.000	0.000	0.000	0.000	d = Banart
	68	Group	Group	Group	Group	Group	Group	Group	Group	Group	Group	Group	metors
	15.10.4	4	12	20	28	36	44	52	60	68	76	84	
D	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
	調	Group	Group	Group	Group	Group	Group	Group	Group	Group	Group	Group	
	标准的	5	13	21	29	37	45	53	61	69	77	85	
E	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
	10	Group	Group	Group	Group	Group	Group	Group	Group	Group	Group	Group	
	标准6	6	14	22	30	38	46	54	62	70	78	86	
F	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
	98	Group	Group	Group	Group	Group	Group	Group	Group	Group	Group	Group	
	89	7	15	23	31	39	47	55	63	71	79	87	
G	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
	oroup	oroup	oroup	oroup	oroup	oroup	oroup	oroup	oroup	oroup	oroup	oroup	
	90	8	16	24	32	40	48	56	64	72	80	88	
н	Group	Group	Group	Group	Group	Group	Group	Group	Group	Group	Group	Group	Plate Run
	01.044	0.04		0.04		or only		or out		or only			

Fig 33

6.1 Standard Curve

Click "standard curve" in protocol tree to enter into standard curve interface.

AMP	Edi	t			ے اور	×
Shortcut Start	Layout Step	Results Report				
Blank Average Calc.	Standard Kinetic	1/% Norm. OP/N MoDilution OP GC				
Bass	JL	Cover				
🚺 Denol* 🖾 🚺 Deno2	🛛 🖸 Deno3* 🚳	1				
Plate1 - Standard					Plate List 🖌 📰 Info	
		Zoon: -0			+ XX SD SD Fitting	
1 2	3 4	5 6 7	8 9	10 11	12 Inc	
标准1 92 A 0.0 41.65 相 Group					100 ABS 3:40 0.07 0.06 4 III Step (] Tabaiat	
					:0.05	
B 2.0 0.08	NoN NoN O		0.05 NoN	848 0.19	:0.04 -	
Group					Group :0.03	
Standard3 114					124 0.01 A III Platel	
C 1.0 Hell				0.55 Nali	400 Indt0	
Group Group					Group 0 0.5 1 1.5 2	
Standard4 125					134	
D 1.3 0.40			4.10 NaS	848 1.01	y = 0.002593 * x2 + -0.008519 * x + 0.053806	
Group Group					Group 12:0.83 多个未知权度计具存任问题!	
Standard5 135					145 Name Cover Save 🗆 Log X	
E I.I. Nak	NaB 3.04 9.			NaN 1.10	CH. 450nn - Log Y	
or oup or oup						
Standardb 195			152 153		Fitting Type:	
Group Group			Group Group		C Liner O 4PL O logit/log	
179 157					DET Ext. METH Quadratic O Spline	
G 0.46 N.8				0.00 848	3.47 Factor O Cubic	
Group Group					Group	
180 168					173	
H 0.70 0.40	848 848 0	10 Half Half	5 (82 NaN	8a8 8.20	0.41 Elste Thate	
Group Group					Group in/out Ku	

Fig 34

You can switch the fitting type by clicking the radio button as Fig 35 below.

itting Type:		
O Liner	O 4PL	🔘 logit/log
🦳 Ext.METH	🔘 Quadratic	Spline
T Factor	🔘 Cubi e	
	O Quartic	

Fig 35

Fitting type and functions as below chart:

Fitting type	Function
Liner	For liner fitting
4PL	4PL fitting
Quadratic	For quadratic polynomial fitting
Cubic	Cubic polynomial fitting
Quartic	Quartic polynomial fitting
Logit/log	Logit/log fitting
Spline	Cubic polynomial fitting between two points

6.2 Logit/Log

Curve fitting conditions:

1. There are must be one sample concentration set to "0", and position of the maximum

absorbance point must be corresponding to the "0" concentration point.

*Note: "0" concentration must be the maximum absorbance point, or there will be something wrong with the calculation.

2. There are must be two or more standard samples with different X values (except 0 concentration point).

3. The curve is linear fitting of logit/log, x-axis stands for linear fitting while y-axis absorbance.

Formula: $\ln \frac{p}{2} = k \log 10(x) + b$ (p=y/y , y stands for absorbance value of standard sample at 0

concentration)

4. IC50 is the corresponding concentration value when the absorbance is half of the maximum

absorbance of standard sample.

5. For this curve fitting, radio button "Log X" and "Log Y" can not be selected as Fig 36.



Fig 36

6.3 Spline

Standard sample is node which combines with the two adjacent nodes consist the Spline. (Except "0"

concentration point)

*Note: "0" concentration must be the maximum absorbance point, or there will be something wrong with the calculation.

Curve fitting conditions:

1. There are must be one sample concentration set to "0", and position of the maximum absorbance point must be corresponding to the "0" concentration point.

2. IC50 is the corresponding concentration value when the absorbance is half of the maximum absorbance of standard sample.

3. In the curving fitting mode, radio button "Log X" and "Log Y" are in gray as below.



Fig 37

6.4 Qualitative Analysis

Name	Cover		ave 🗌 Log X
СН.	Orm	-	Log Y
/ittin	g Type:		
O Li	ner	O 4PL	O logit/log
	Ext.METH	🔘 Quadratic	💿 Spline
	Factor	🔘 Cubic	
		O Quartic	
Limit:	200		
	re: 100		Low Positive: 0

Qualitative analysis is mainly used to verify positive, negative and low positive, only logit/log and Spline fitting type can be used.

Fig 38

Qualitative analysis functions as below. Low positive function is open when the checkbox was choosen, otherwise, it will be closed.

Name	Function
Limit	Limit is determined by input value
Positive	Positive is also determined by input value
Low Positive	Also determined by input value

Click "List" button, please see result interface Fig 39. When sample concentration higher than the positive input value, qualitative result will be positive; when sample concentration lower than the positive input value and higher than low positive input value; qualitative result will be low positive(the checkbox of low positive should be chosen); or it will be negative if in other states.

Plate	Well	Group	Туре	Name	Concentration	Dilution	N/P	
Plate1	B9		Clear		0	1.00		
Plate1	B10		Clear		0	1.00		
Plate1	B11		Clear		0	1.00		
Plate1	B12		Clear		0	1.00		
Plate1	C1	Group	Standard	Standard3	6.00000	1.00		
Plate1	C2	Group	Unknown	5	> 6.000000	1.00	Positive	→ Positive
Plate1	C3	Group	Unknown	13	4.86371	1.00	2	→Negative
Plate1	C4		Clear		0	1.00		=
Plate1	C5		Clear		0	1.00		
Plate1	C6		Clear		0	1.00		
Plate1	C7		Clear		0	1.00		
Plate1	C8		Clear		0	1.00		
Plate1	C9		Clear		0	1.00		
Plate1	C10		Clear		0	1.00		
Plate1	C11		Clear		0	1.00		
Plate1	C12		Clear		0	1.00		
Plate1	D1	Group	Standard	Standard4	18.00000	1.00		
Plate1	D2	Group	Unknown	6	5. 22532	1.00	Low Positive	-Xow Postive
Plate1	DЗ	Group	Unknown	14	5.78200	1.00	Positive	→Positive
Plate1	D4		Clear		0	1.00		10
Plate1	D5		Clear		0	1.00		
Plate1	D6		Clear		0	1.00		-

Fig 39

Section 7 Report

7.1 Report exporting

Click "Excel" in Report interface, default path is "EXCEL_save" under installation directory, also you can

change the path as you like as Fig 40.

AMR	Edit			_ 8 🔀
Shortcut Start	Layout Step Results	Report		
PDF Exed CSV	Preview Print			
😡 Save As				
○○ • 📕 « AMR-100 ►	EXCEL_save 🔹 🍫	Search EXCEL_save		
Organize 🔻 New folder		≣ ▼ 🔞		A 📼 Info
E Desktop ▲ Downloads Recent Places Libraries Documents Music Pictures Videos Computer	Name Demo3_20180925_155411.xls Demo3_20180925_155503.xls	Date modifiedType9/25/2018 4:54 PMXLS File9/25/2018 4:55 PMXLS File	on state : Non-execution	 Layout Plate1 Step Endpoint Results Endpoint Endpoint Endpoint Endpoint Endpoint Endpoint Standard_0
· · · · · · · ·		•		🔺 🚔 Report
File name: Demo3_ Save as type: xls (*.xls)	20181105_173735	•		
Hide Folders		Save Cancel		

Fig 40