



RT8产品手册

RT8 PRODUCT MANUAL

锐拓仪器

RAYTOR INSTRUMENTS

药物溶出度仪与溶出解决方案专业提供商

Dissolution Device and Solution Professional Provider



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深圳锐拓仪器 (Raytor Instruments) 位于中国智造之都深圳，是国家高新企业、ISO9001认证企业。锐拓仪器致力于药物溶出仪器与解决方案的研发、生产、销售和服务，拥有多项技术专利。

Raytor Instruments is located in Shenzhen, the capital of Intelligent Manufacturing in China. It is a national high-tech enterprise and a ISO9001 certified enterprise.

Raytor Instruments is committed to the research and development, production, sales and service of drug dissolution instruments and solutions, with a number of technical patents.

锐拓仪器旗下的溶出产品包括：流池法溶出系统、往复筒法溶出系统、普通溶出自动取样系统、扩散池自动取样系统、溶出仪机械性能验证工具箱、溶媒制备仪等，全面覆盖国内外药典中各种溶出释放度测试装置。锐拓仪器同时能够为用户提供溶出度整体解决方案。

Raytor Instruments dissolution products include: flow-through cell dissolution system, reciprocating cylinder dissolution system, ordinary dissolution automatic sampling system, diffusion cell automatic sampling system, dissolution apparatus mechanical verification toolbox, dissolution medium preparation instrument, etc., which fully cover all kinds of dissolution release test devices in Pharmacopoeia. At the same time, Raytor Instruments can provide users with the overall solution of dissolution test.

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锐拓仪器
RAYTOR INSTRUMENTS

完善的产品线

Perfect Product Line

RT7

流池法溶出系统

Flow-Through Cell Dissolution System

药典流池法



RT3

往复筒法溶出系统

Reciprocating Cylinder Dissolution System

药典往复筒法、往复支架法



RT6

普通溶出系统

General Dissolution Series

药典篮法、浆法、小杯法、浆碟法、
转筒法、浸没池法.....



RT8

药物透皮扩散系统

Transdermal Diffusion System

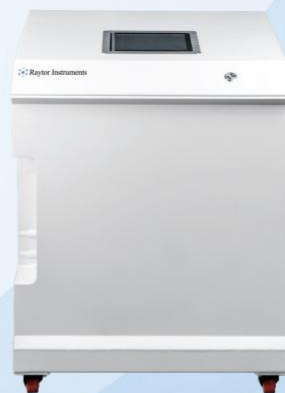
药典扩散池法

RT5

溶出介质制备脱气系统

Medium Preparation Degassing System

溶出介质的制备、脱气



RT2

溶出仪物理校准工具

Dissolution Mechanical Calibration Series

校准工作站、校准工具包

产品设计理念

Product Design Concept



合规性 Compliance

仪器性能指标符合中国药典、美国药典、欧洲药典等法规要求，计算机化系统符合21CFR Part 11 的要求。

The performance of the instrument meets the requirements of Chinese Pharmacopoeia, United States Pharmacopeia, European Pharmacopoeia and other regulations, and the computerized system meets the requirements of 21CFR Part 11.



清洁性 Cleanliness

应对GMP检查中检察官以观察细节作为突破口的思路，让设备在清洗的细节上无懈可击。

In response to GMP inspection, prosecutors should observe the details as a breakthrough, so that the cleaning details of the equipment are impeccable.



管理性 Management

卓越的计算机管理系统，国内独家的云管理系统，让实验室主管全面掌控设备。

Excellent computer management system, domestic exclusive cloud management system, let the laboratory director control the equipment.



方法开发 Method Development

我们不只是生产仪器，我们还能够提供溶出相关的专业技术支持。

We are not only producing instruments, we can provide professional technical support related to dissolution.

锐拓溶出软件系统

Raytor Dissolution Software System

锐拓溶出仪软件系统操作简单，容易上手，可以预存至少200条溶出实验方法，并具有至少三级权限管理和审计追踪功能、具有数据备份和PDF等不可更改的格式导出功能，完全符合美国 21CFR PART11，中国GMP，欧盟GMP等法规对数据完整性的要求。

The software system of Raytor dissolution apparatus is simple to operate and easy to use. It can store at least 200 dissolution test methods, and has at least three levels of permission level and audit track functions, data backup and PDF format export functions. It fully meets the requirements of data integrity of 21CFR PART 11.China GMP.EU GMP and other regulations.





用户权限管理 User Permissions Control

- 可分配至少3种权限等级：系统管理员、实验室主管、操作员。

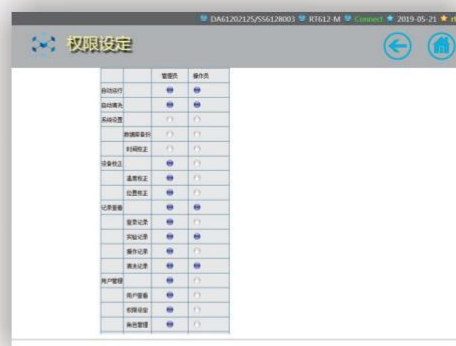
At least 3 kinds of permission level can be allocated, including: system administrator, lab supervisor, general operator.

- 可由客户根据自身风险评估，定义权限等级的细则。

The detailed rules of each permission level can be customized by customers according to their own risk assessment.

- 可预设至少100个登陆账户、密码，用户操作权限分级管控。

At least 100 login accounts and passwords can be set up, and the user operation permission can be controlled by different levels.



审计追踪 Audit trail

- 各个层面追踪到具体账号的审计追踪，包括登陆记录、实验记录、操作记录、清洗记录等。

All levels of audit tracking, including: landing records, experimental records, operating records, cleaning records, etc.

- 审计追踪记录可被检索、导出和打印。

Audit track records can be retrieved, exported and printed.



锐拓溶出软件系统

Raytor Dissolution Software System

方法建立和调用

Method Preset and Invokes

- 可以建立和保存至少200条溶出实验方法。
It can preset and store at least 200 dissolution test method.
- 溶出方法和UV/Vis检测方法同步设定。
Dissolution method and UV/Vis detection method are set synchronously.
- 用户可以调用已经保存的溶出实验方法进行自动溶出实验。
Users can call the saved dissolution experiment method for automatic dissolution experiment.
- 所有溶出方法的创建者和创建日期均可以被追溯。
Users can call the saved dissolution experiment method for automatic dissolution experiment.



水浴温度: 37.00 °C
 搅拌转速: 100 r/min
 溶出方法: 篮法
 溶出体积: 900 mL
 取样量: 10 mL
 补液量: 10 mL
 终级转速: 200 r/min
 持续时间: 0 分钟

实验员: rt01
 设备编号: DA61202125/SS6128003
 实验品名: SYSP
 溶媒类型: H2O
 调温搅拌: 否
 创建人: admin
 创建时间: 2019-04-18 17:25:37

取样点(分)	1	2	3	4	5	6	7	8	9	10
取样点(分)	30	0	0	0	0	0	0	0	0	0
取样点(分)	11	12	13	14	15	16	17	18	19	20
取样点(分)	0	0	0	0	0	0	0	0	0	0

开始实验

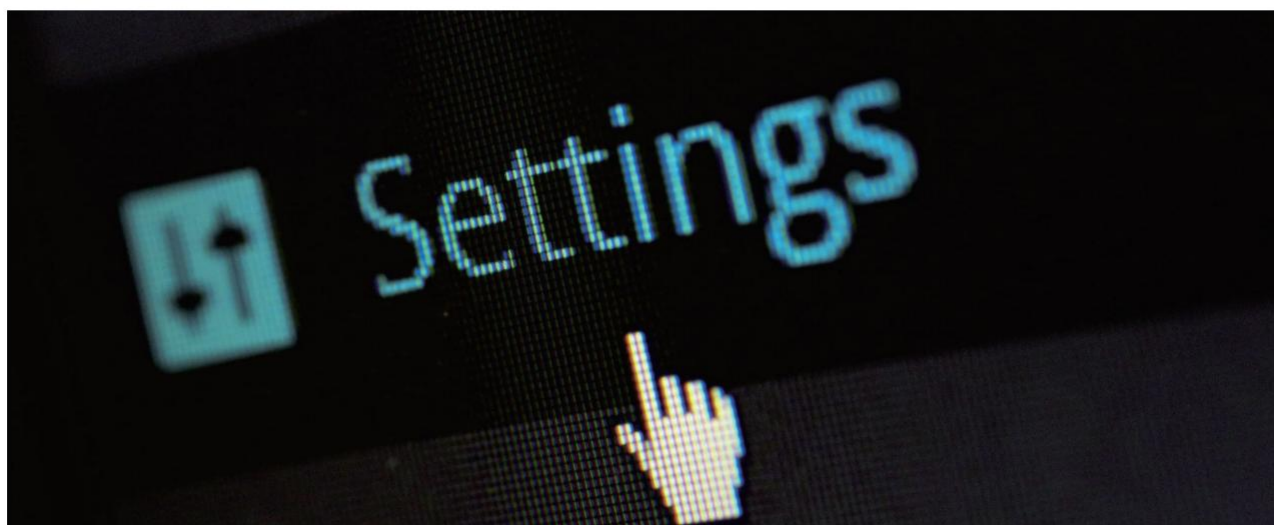


实验记录

实验时间从: 到: 点选

ID	实验名称	操作员	开始时间	结束时间	药品批次
1	SYSPLF	rt01	2019-05-21 15:04	2019-05-21 15:05	1

1/1 Total 1





电子数据完整性 Electronic Data Integrity

- 单机版配备数据库系统，系统存储容量可满足至少10年的记录存储。

The stand-alone version is equipped with a database system, the system storage capacity can meet at least 10 years of record storage.

- 实验期间能够实时显示实验参数，并能够同步生成准确、一致的电子数据。

During the experiment, the test parameters can be real-time display, accurate and consistent electronic data can be generated synchronously.

- 实时显示UV/Vis检测结果(选配在线UV/Vis检测时)。

Real-time display of the UV/Vis detection results (for online UV / Vis detection).

- 实验完成后，系统将自动生成实验报告。

After the experiment, the system will automatically generate the experiment report.

- 电子数据可以被检索、导出、备份和打印。

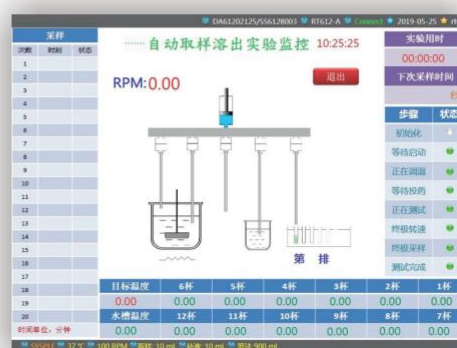
Electronic data can be retrieved, exported, backed up and printed.

- 系统数据库可以备份和还原。

The system database can be backed up and restored.

- 所有电子数据均受到保护，避免被随意篡改或删除。

Electronic data are protected from being tampered with or deleted.



ID	实验名称	操作员	开始时间	结束时间	药品批次
1	SYSPLF	rd1	2019-05-21 15:04	2019-05-21 15:05	1

方法名称: SYSPLF			
实验员:	rd1	开始时间:	2019-05-21 15:04:12
设备编号:	DA61202125556128003	结束时间:	2019-05-21 15:05:48
药品批次:	1	溶剂名称:	H2O
实验品名:	SYSP	添加方法:	直接
溶剂体积:	900 ml	取样量:	10 ml
溶剂浓度:	200 mg/ml	称量时间:	0 min
设定温度:	37°C	设定转速:	100 RPM
采样时间:	-	采样2:	-
		采样3:	-

锐拓溶出软件系统

Raytor Dissolution Software System

计算机化系统技术支持服务

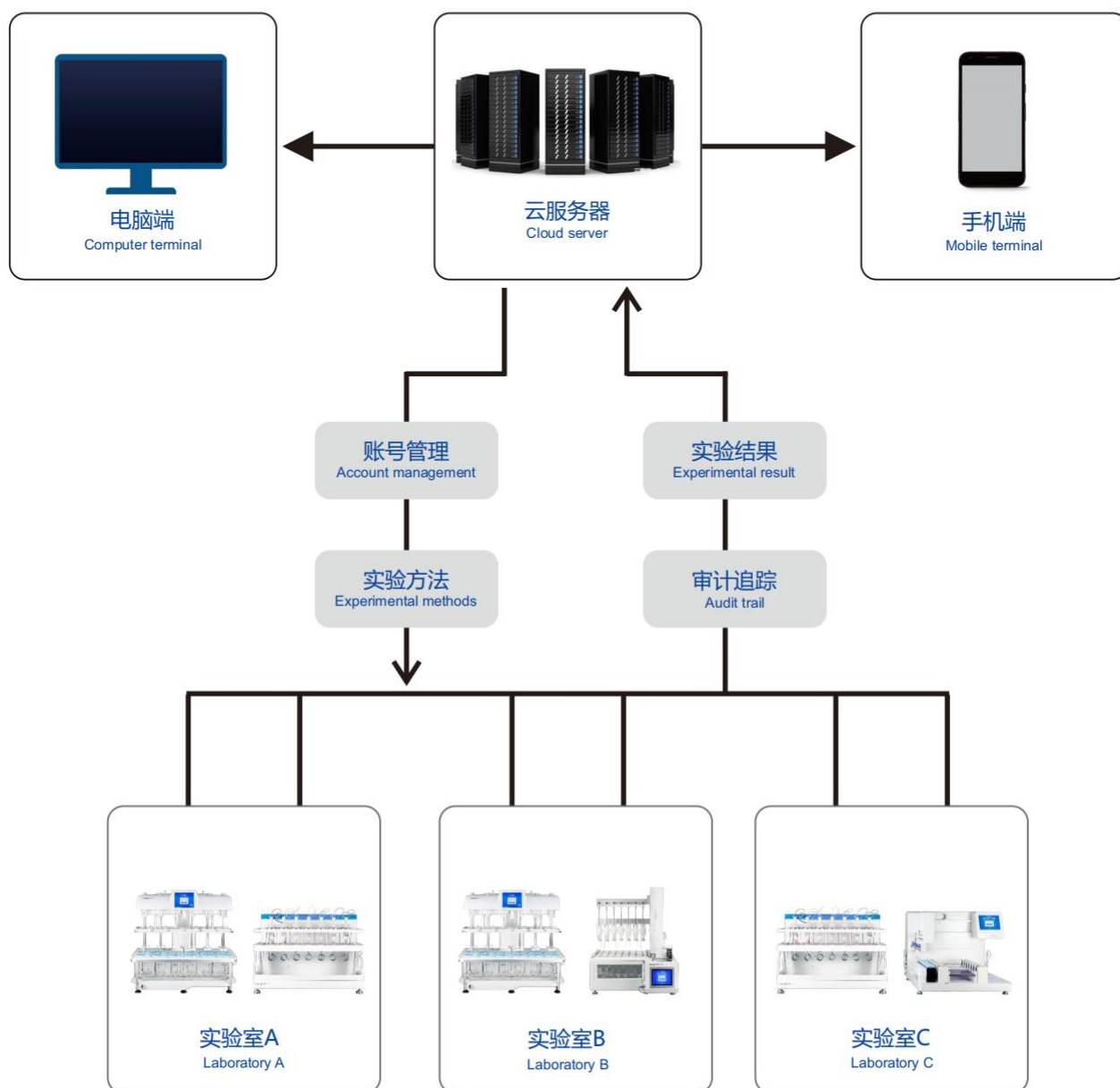
Computerized System Technical Support Services

- 溶出仪计算机化系统验证服务。
Validation service of dissolution apparatus computerized system.
- 电子数据云系统服务器架设服务。
Electronic data cloud system server setup service.
- 操作系统可以进行升级和根据用户需求进行定制。
The operating system can be upgraded and customized according to user requirements.



锐拓电子数据云系统

Raytor Electronic Data Cloud System





銳拓儀器
RAYTOR INSTRUMENTS

RT8

藥物透皮擴散系統
Transdermal Diffusion System

型号配置 Model Configuration



RT800 自动取样透皮扩散系统

RT800 Automatic Sampling Transdermal Diffusion System



RT806 垂直型透皮扩散仪

RT806 Vertical Transdermal Diffusion Apparatus



RT812 自动取样透皮扩散系统

RT812 Automatic Sampling Transdermal Diffusion System

锐拓仪器RT8药物透皮扩散系统满足USP<1724>要求，用于软膏、硬膏、涂剂、洗剂、膜剂、气雾剂等制剂的药物透皮释放度试验，通过经皮吸收的模型研究药物透过皮肤的效率。

Raytor RT8 Transdermal Diffusion System meets the requirements of USP < 1724 >, which is used for drug transdermal release test of ointment, hard paste, coating, lotion, membrane, aerosol and other preparations, and studies the efficiency of drug transdermal absorption through the skin through the model of percutaneous absorption.

RT800 自动取样透皮扩散系统

Automatic Sampling Transdermal Diffusion System

高精度取样泵

High Precision Sampling Pump

取样误差 $< \pm 0.1$ mL。配合取样前自动润洗、取样后自动清洗的功能，保证取样精度和避免污染残留。

Sampling error $< \pm 0.1$ mL. The function of rinse before sampling and cleaning after sampling, ensures sampling accuracy and avoids contamination or residue.

自动定位取样针

Automatic Positioning Sampling Needle

取样针可以自动定位并倾斜进入扩散池中进行自动取样，然后自动收集样品溶液，并自动回补介质。

The sampling needle can be automatically positioned and tilted into the diffusion cell for automatic sampling. After that, it can collect the sample solution, and replenish the medium automatically.

介质恒温回补池

Medium Replenishment Cell (Constant Temperature)

在实验过程中，对待补液的介质进行恒温。需要补液时，取样针自动抽取其中的介质回补到扩散池中。

During the experiment, the medium to be replenished will be kept at a constant temperature. When replenishment is required, the sampling needle will automatically extract the medium from it and replenish it to the diffusion cell.





人机交互界面

User Computer Interface

8.4 寸触控屏，预装锐拓操作系统，符合数据完整性要求。

8.4-inch touch screen, and pre installed with the Raytor operating system, meeting the data integrity requirements.

干热恒温搅拌装置

Dry Heat Constant Temperature Stirring Device

高精度恒温加热和搅拌功能。可以同时执行两侧各7个（共14个）扩散池的自动取样实验。

High precision temperature heating and stirring function. The automatic sampling experiment of 7 diffusion cells on both sides (14 in total) can be carried out simultaneously.

样品收集架

Sample Collection Rack

7×12位样品收集架，适配液相小瓶。取样时，取样针会自动将样品溶液收集到液相小瓶中。

Sample collection rack (7 × 12 position), suitable for liquid phase vials. During sampling, the sampling needle will automatically collect the sample solution into the liquid phase vial.

RT800 自动取样透皮扩散系统

Automatic Sampling Transdermal Diffusion System

改良式Franz垂直扩散池 Improved Franz Vertical Diffusion Cell

锐拓改良式Franz垂直扩散池更加便携耐用，独特的取样臂设计让取样流程更加方便顺畅。另外，可以通过使用不同高度的搅拌子，来调节扩散池内介质的体积。

Raytor improved Franz vertical diffusion cell is more portable and durable, and the unique sampling arm design makes the sampling process more convenient and smooth. The volume of the medium in the diffusion cell can be adjusted by using stirring bar with different heights.



灵活的取样方式 Flexible Sampling Method

用户可以通过设定方法，让系统进行自动取样；或手动用移液器进行取样。

Users can set the method to control the system for automatic sampling, or manually use the pipette for sampling.

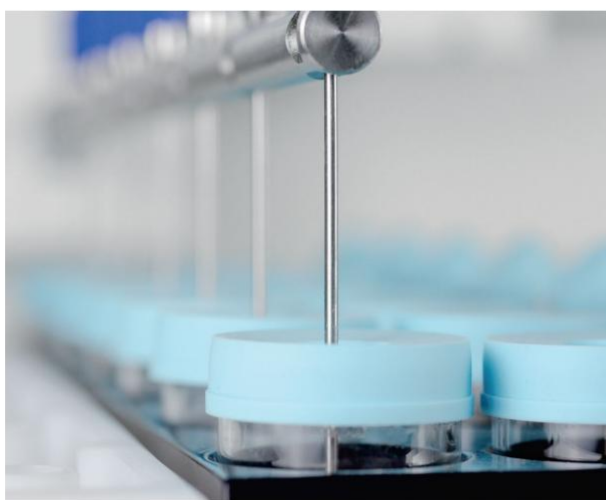


自动样品收集

Automatic Sample Collection

取样针完成取样后，会自动移至样品收集架的指定位置，将样品溶液收集至液相小瓶中。可同时支持两侧各7个扩散池的样品收集。

After sampling, the sampling needle will automatically move to the designated position of the sample collection rack to collect the sample solution into the liquid vial. It can support the sample collection of 7 diffusion cells on both sides at the same time.



介质恒温回补

Medium Rewarming & Replenishment

每个扩散池均配备独立的介质恒温回补池，让回补的介质温度满足要求的同时，有效避免扩散池之间的交叉污染。

Each diffusion cell is equipped with an independent medium rewarming & replenishment cell, so that the temperature of the replenished medium can meet the requirements while effectively avoiding cross contamination between diffusion cell.

RT806 垂直型透皮扩散仪

Vertical Transdermal Diffusion Apparatus

测温探针

Temperature Measuring Probe

用于测量垂直扩散池内介质的温度，
测温误差 $< \pm 0.5^{\circ}\text{C}$ 。

It is used to measure the temperature of the medium in the vertical diffusion cell, and the temperature measurement error is less than $\pm 0.5^{\circ}\text{C}$.

控制面板

Control Panel

用于设定加热温度和搅拌转速，控制
加热搅拌的启动或暂停。

It is used to set the heating temperature and stirring speed, and control the start or stop of heating and stirring.





锐拓改良式Franz垂直扩散池

Raytor Improved Franz Vertical Diffusion Cell

更加便携耐用，独特的取样臂设计让取样流程更加方便顺畅。

More portable and durable, the unique sampling arm design makes the sampling process more convenient and smooth.

干加热搅拌系统

Dry Heating Stirring System

通过干加热和磁力搅拌的方式，对扩散池内的介质进行加热和混匀。

The medium in the diffusion cell will be heated and mixed by dry heating and magnetic stirring.

RT806 垂直型透皮扩散仪

Vertical Transdermal Diffusion Apparatus

将已经填充介质的垂直扩散池安装到干加热搅拌底座上。启动加热和搅拌，对介质预升温。使用测温探针测量各个垂直扩散池内介质的温度，确认介质温度已经达到规定值并保持稳定。

Install the vertical diffusion cell filled with medium on the dry heating stirring base. Start heating and stirring to preheat the medium. Use the temperature measuring probe to measure the temperature of the medium in each cell to ensure that the medium temperature has reached the specified value and remains stable.



通过旋钮调整加热温度和搅拌转速。加热温度和搅拌转速的设定值和当前值会实时显示在屏幕上。

Adjust the heating temperature and stirring speed through the knob. The set value and current value of heating temperature and stirring speed will be displayed on the screen in real time.



需要上样时：停止搅拌，将样品添加到垂直扩散池上面的供体室组件中，排除气泡并重新启动搅拌，实验开始。在指定时间点，通过取样臂进行手动取样。

When dosing is required: Stop stirring, add the sample to the donor chamber assembly above the vertical diffusion cell, eliminate bubbles, restart stirring, and start the experiment. Conduct manual sampling through the sampling arm at the specified time point.



锐拓仪器提供不同尺寸的垂直扩散池，并通过使用不同高度的搅拌子来调节扩散池内的介质体积。

Raytor provide vertical diffusion cells of different sizes, and the volume of media can be adjusted by using stirring bars of different heights.

RT812 自动取样透皮扩散系统

Automatic Sampling Transdermal Diffusion System

锐拓RT812采用自动全取样模式。取样时，将扩散池内的介质全部取出，并补充相同体积的新鲜介质。

Raytor RT812 adopts automatic full sampling mode. During sampling, it will take out all the media in the diffusion cell and replenish fresh media of the same volume.



12通道垂直扩散池装置

12 Channels Vertical Diffusion Cell Apparatus

创新“6+6”运行模式。左右两组扩散池（各6个）可以分别设定不同的加热温度、搅拌转速，可同时独立执行两组透皮扩散实验。

Innovate "6+6" operation mode. The left and right diffusion cells (6 for each) can be set with different heating temperature and stirring speed, and two independent sets of percutaneous diffusion experiments can be conducted at the same time.

自动取样工作站

Automatic Sampling Workstation

创新“6+6”取样模式，可同时完成两组独立的透皮扩散实验不同时间点的取样。

Innovate the "6+6" sampling mode, which can simultaneously complete the sampling at different time points of two independent transdermal diffusion experiments.



介质恒温仪

Medium Thermostat Apparatus

对实验相关的介质（两种）进行预热恒温。保证回补进入扩散池的介质已经预热到实验指定温度。

Preheating the medium (two kinds) for the experiment. Ensure that the medium entering the diffusion cell has been preheated to the temperature specified in the experiment.

RT812

自动取样透皮扩散系统

Automatic Sampling Transdermal Diffusion System

垂直扩散池装置

Vertical Diffusion Cell Apparatus

“6+6” 运行模式。左右两组扩散池（各6个）可分别设定不同加热温度、搅拌转速。

"6+6" operation mode. The left and right diffusion cells (6 for each) can be set with different heating temperature and stirring speed.

可通过使用不同大小的搅拌子，调整扩散池中的介质体积。

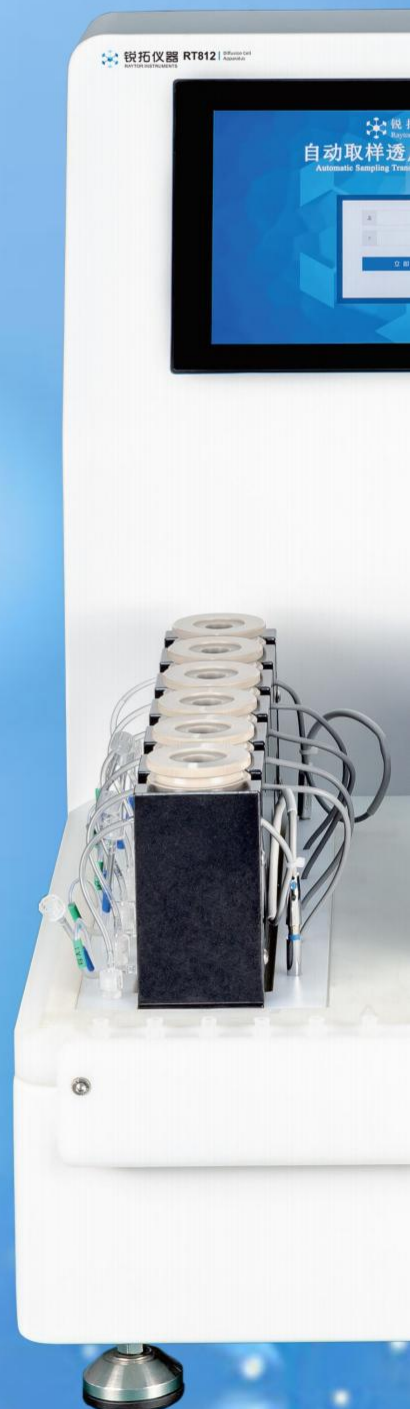
The volume of medium in the diffusion cell can be adjusted by using different size stirrer.

每个扩散池内均配备温度传感器。

Each cell is equipped with a temperature sensor.

仪器自动倾斜扩散池装置，将扩散池内的气泡排出。

The instrument automatically inclines the diffusion cell device to discharge the bubbles inside.





灵活的样品收集方式 Flexible Sample Collection

可通过取样口进行手动取样。或通过自动取样工作站进行全自动取样。

Manual sampling can be conducted through the sampling port. Or conduct full automatic sampling through the automatic sampling workstation.

可拆卸式遮光罩 Removable light shield

适用于光敏样品的透皮扩散测试，避免由于光降解造成的结果异常。

It is applicable to the transdermal diffusion test of photosensitive samples to avoid abnormal results caused by photodegradation.



RT812

自动取样透皮扩散系统

Automatic Sampling Transdermal Diffusion System

高精度自动取样系统

High Precision Automatic Sampling System

“6+6” 取样模式，可同时完成两组独立的透皮扩散实验不同时间点的取样。

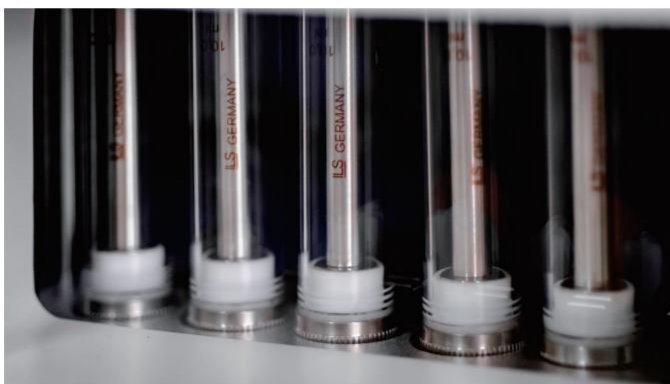
"6+6" sampling mode, which can simultaneously complete the sampling at different time points of two independent transdermal diffusion experiments.

自动全取样。取样时，将扩散池内的介质全部取出。完成取样后，补充相同体积的新鲜介质。

Automatic full sampling. When sampling, take out all the media in the diffusion cell. After sampling, replenish fresh medium of the same volume.

可自动清洗取样管路和扩散池装置。

It can automatically clean the sampling pipeline and diffusion cell apparatus.



样品收集架

Sample Collection Rack

样品收集架可适配1.5mL液相小瓶和10mL试管。满足多种体积的样品收集需求。

The sample collection rack can be fitted with 1.5mL liquid phase vial and 10mL test tube. It can meet the sample collection requirements of various volumes.

得益于独立设计的注样针和样品收集架。本自动取样工作站可以实现两组独立的透皮扩散实验不同时间点、不同取样体积的取样。

Thanks to the independently designed sample injection needle and sample collection rack. The automatic sampling workstation can realize the sampling of two groups of independent transdermal diffusion experiments at different time points and different sampling volumes.



RT812

自动取样透皮扩散系统

Automatic Sampling Transdermal Diffusion System

恒温水浴搅拌

Constant Temperature Water Bath & Stirring

对实验相关的介质进行预热恒温。预热温度和搅拌转速可以被设定。

Preheat and keep the temperature of the media for the experiment. Preheating temperature and mixing speed can be set.

配备温度传感器，可实时监测加热温度。且温度传感器可被校准。

Equipped with temperature sensor, which can monitor the temperature of heating in real time. The temperature sensor can be calibrated.



多种使用模式

Multiple Use Modes

在线模式下，可以通过RT812系统联控介质恒温仪，透皮扩散的测试方法中能够设定介质的预热温度和搅拌转速。

In online mode, the RT812 system can be used to jointly control the medium thermostat apparatus, and the preheating temperature and stirring speed of the medium can be set in the transdermal diffusion test method.

离线模式下，可以通过调节旋钮设定预热温度和搅拌转速，应对其他实验的恒温搅拌需求。

In offline mode, the preheating temperature and mixing speed can be set by adjusting the knob to meet the constant temperature mixing requirements of other experiments.

RT800技术参数

RT800 Technical Parameter

项目 Item	技术参数 Technical Parameter
垂直扩散池装置 Vertical Diffusion Cell Apparatus	扩散池位数：14 (7+7)。 Number of diffusion cell: 14 (7+7) .
	加热方式：干热加热。 Heating mode: dry heating.
	温度可调范围：室温 ~ 45℃。 Adjustable temperature range: room temperature ~ 45 °C.
	温控误差 < ±0.5℃。 The temperature control error is less than ±0.5 °C.
	搅拌速度可调范围：200RPM ~ 900RPM。 Adjustable stirring speed range: 200RPM ~ 900RPM.
	搅拌速度误差 < ±10%。 The stirring speed error is less than ± 10%.
自动取样工作站 Automatic Sampling Workstation	取样模式：部分取样。 Sampling mode: partial sampling.
	取样通道：7。 Sampling Channel: 7.
	取样量：0.2mL ~ 1.5mL。 Sampling volume: 0.2mL~1.5mL
	取样时间点：24个。 Sampling time points: 24.
	最长取样运行时间：9999min。 Maximum sampling running time: 9999 min.
	样品收集架：1个 7 × 12 孔位的样品收集架。 Sample collection rack: one 7 × 12 hole sample collection rack.
介质恒温回补池 Medium Replenishment Cell (Constant Temperature)	加热方式：干热加热。 Heating mode: dry heating.
	介质瓶：45 mL × 14。 Medium Bottle: 45 mL × 14.
	温度可调范围：室温 ~ 45℃。 Adjustable temperature range: room temperature ~ 45°C.
	温度控误差 < ±0.5℃。 Temperature control error is less than ±0.5 °C.

RT806技术参数

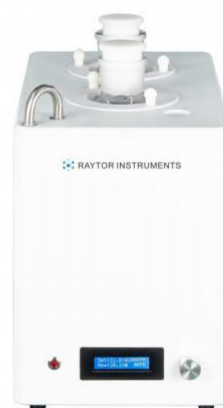
RT806 Technical Parameter

项目 Item	技术参数 Technical Parameter
扩散池装置 Diffusion Cell Apparatus	扩散池位数：6。 Number of diffusion cell: 6.
	可适配各种尺寸的扩散池。 It can be adapted to various size of diffusion cell.
取样方式 Sampling Method	手动取样。 Manual sampling.
加热 Heating	加热方式：干热加热。 Heating mode: dry heating.
	温度可调范围：室温 ~ 55℃。 Adjustable temperature range: room temperature ~ 55 °C.
	温控误差 < ±0.5℃。 The temperature control error is less than ±0.5 °C.
搅拌速度 Stirring Speed	搅拌速度可调范围：200RPM ~ 900RPM。 Adjustable stirring speed range: 200RPM ~ 900RPM.
	搅拌速度误差 < ±10%。 The stirring speed error is less than ± 10%.

RT812技术参数

RT812 Technical Parameter

项目 Item	技术参数 Technical Parameter
垂直扩散池装置 Vertical Diffusion Cell Apparatus	扩散池位数：12 (6+6) 。 Number of diffusion cell: 12 (6+6) .
	加热方式：干热加热。 Heating mode: dry heating.
	温度可调范围：室温 ~ 50℃。 Adjustable temperature range: room temperature ~ 50 °C.
	温控误差 < ±0.5℃。 The temperature control error is less than ±0.5 °C.
	搅拌速度可调范围：200RPM ~ 900RPM。 Adjustable stirring speed range: 200RPM ~ 900RPM.
	搅拌速度误差 < ±10%。 The stirring speed error is less than ± 10%.
自动取样工作站 Automatic Sampling Workstation	取样模式：全取样。 Sampling mode: full sampling.
	取样量：1mL ~ 10mL。 Sampling volume: 1mL~10mL.
	取样时间点：左右各24个。 Sampling time points: 24 on the left and 24 on the right.
	最长取样运行时间：9999min。 Maximum sampling running time: 9999 min.
	样品收集架：两个 6 × 15 孔位的样品收集架。 Sample collection rack: two 6 × 15 hole sample collection rack.
介质恒温仪 Medium Thermostat Apparatus	加热方式：水浴加热。 Heating method: water bath heating.
	介质瓶：2000 mL × 2。 Medium Bottle: 2000 mL × 2.
	温度可调范围：室温 ~ 55℃。 Adjustable temperature range: room temperature ~ 55 °C.
	温度探头误差 < ±0.5℃。 Temperature sensor error is less than ±0.5 °C.
	搅拌速度可调范围：200RPM ~ 900RPM。 Adjustable stirring speed range: 200RPM ~ 900RPM.



售后服务与技术支持

After Sales Service & Technical Support

验证与确认

Validation and Qualification

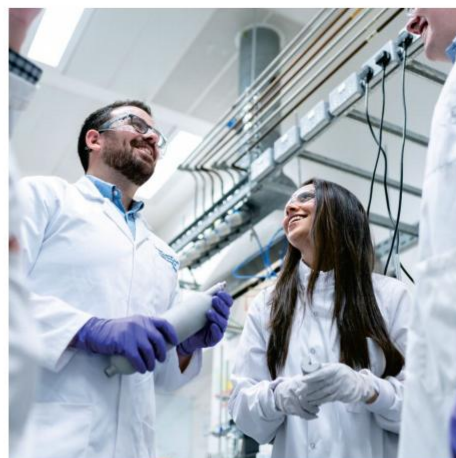
锐拓仪器能够为您的全系列溶出系统提供全面且专业的验证与确认服务。所有验证与确认服务都会附有符合法规要求的完整专业的文件报告。

Raytor Instruments can provide comprehensive and professional validation and qualification services for your dissolution systems. All verification and validation services will be accompanied by complete and professional documents meeting regulatory requirements.

我们能够提供的验证&确认服务包括且不限于：

The validation & qualification services we can provide include but are not limited to:

- 篮法、桨法 IQ/OQ/PQ
Basket Method, Paddle Method IQ/OQ/PQ
- 中国药典小杯法 IQ/OQ/PQ
ChP Mini Vessel Method IQ/OQ/PQ
- 桨碟法 IQ/OQ
Paddle over Disk Method IQ/OQ
- 转筒法 IQ/OQ
Dissolution Cylinder Method IQ/OQ
- 浸没池法 IQ/OQ
Immersion Cell Method IQ/OQ
- 流池法 IQ/OQ
Flow-Through Cell Method IQ/OQ
- 往复桶法、往复支架法 IQ/OQ
Reciprocating Cylinder and Holder IQ/OQ
- 扩散池法 IQ/OQ
Diffusion Cell Method IQ/OQ
- 计算机化系统验证
Computerized System Validation
- 溶出系统清洁验证
Dissolution System Cleaning Validation

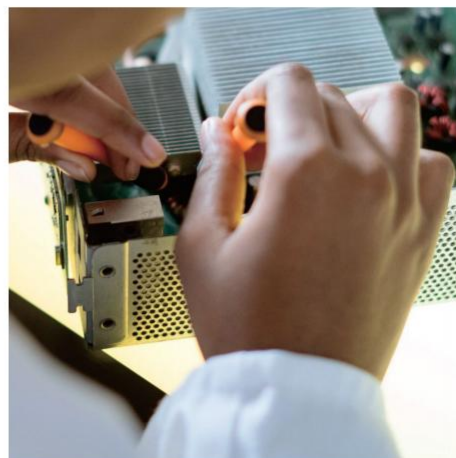


维修和预防性维护

Repair & Preventive Maintenance

锐拓仪器售后服务团队能够快速应对您的仪器维修需求。锐拓仪器提供涵盖维修，预防性维护和维修后再确认的服务，让您的仪器始终处于最佳状态。

Raytor Instruments after-sales service team can quickly respond to your instrument maintenance needs. Raytor Instruments provides services covering repair, preventive maintenance and requalification after repair, to keep your instrument at its best.



培训与交流

Training & Communication

锐拓仪器能够为您提供全系列溶出系统的使用操作培训。另外，锐拓仪器的专业技术团队能够根据您的实验需求，针对特定的技术细节进行更深层次的交流。

Raytor Instruments can provide you with a full series of training on the operation of dissolution system. In addition, the professional technical team of Raytor Instruments can conduct deeper communication for specific technical details according to your experimental needs.



应用技术支持

Application Technical Support

锐拓仪器拥有强大的应用技术实验室团队，能够承接客户的新颖溶出方法开发，例如流池法、往复筒法。并协助客户进行溶出结果异常调查。

Raytor Instrument has a strong application technology laboratory team, which can undertake the development of new dissolution methods from customers, such as flow-through cell method and reciprocating cylinder method. And assist the customer to investigate the abnormal dissolution results.

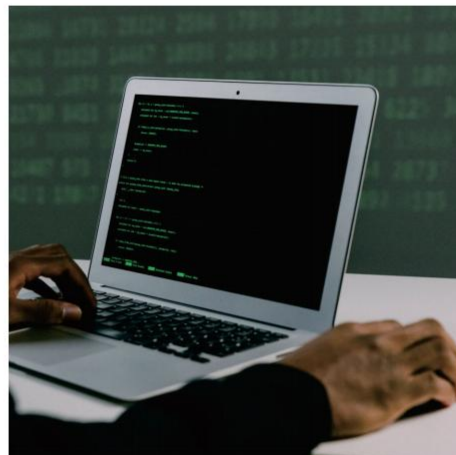


架设电子数据云系统服务器

Electronic Data Cloud System Server

通过架设电子数据云系统服务器，连接多个实验室中的全部溶出系统，实现所有溶出系统的记录、用户、方法等电子数据的统一管理和自动备份。

The electronic data cloud system server is to connect all dissolution systems in multiple laboratories to realize the unified management and automatic backup of electronic data such as records, users and methods of all dissolution systems.

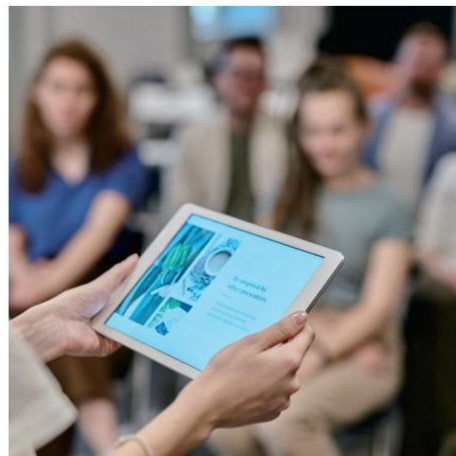


技术研讨会

Technical Seminar

锐拓仪器会在全国各种制药技术研讨会中分享最新溶出研究成果。您可以关注锐拓仪器的参会安排，在研讨会现场跟我们的技术专家进行交流。

Raytor Instruments will share the latest dissolution research results in various national pharmaceutical technology seminars. You can pay attention to the participation arrangement of Raytor and communicate with our technical experts at the seminar site.



锐拓线上大讲堂

Raytor Online Lecture Hall

锐拓仪器会定期在线上举办大讲堂，介绍最新的溶出前沿技术。您可以进入大讲堂的直播平台收看技术宣讲，并在线上与技术专家进行交流互动。

Raytor Instruments will regularly hold a lecture hall online to introduce the latest dissolution cutting-edge technology. You can enter the live broadcast platform of the auditorium to watch the technical lectures and interact with technical experts online.



微信公众号

WeChat Official Account

锐拓仪器的微信公众号会定期分享应用实验案例、公布锐拓线上大讲堂和技术研讨会的安排。您可以关注我们的公众号，以获得最新的资讯。

The official account of WeChat public of Raytor Instruments will regularly share the application experiment cases, announce the arrangement of the lecture hall and technical seminar. You can pay attention to our official account for the latest information.



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