

FUJIFILM

FUJIFILM Wako Pure Chemical Corporation

Wako

FUJIFILM Wako Pure Chemical Corporation 成立於 1922 年，
是 FDA 核准的四大內毒素檢測試劑 (LAL reagent) 供應商之一，
長期在日本市場位居第一。



F U J I F I L M W a k o

LAL System

內毒素檢測的專業解決方案

三大檢測技術支援

凝膠法 / 濁度法 / 呈色法

符合多國法規

美國藥典 / 歐洲藥典 / 日本藥典

內毒素特異性試劑

避免 β -glucan 造成偽陽性

全套解決方案

內毒素檢測試劑 / 分析儀 / 分析軟體

支持環境永續發展

重組蛋白檢測試劑 Recombinant Cascade Reagent (rCR)

 **騰達行**
UNIMED

 **0800-211-819**

   **Unimed 騰達行** 

 **www.unimed.com.tw**

台北 02-2720-2215 新竹 03-6684-586 台中 04-2463-3591 嘉義 05-2844-162 台南 06-2890-665 高雄 07-3470-143 花蓮 03-8573-757

Endotoxin-Specific LAL Reagents

PYROSTAR™ ES-F Series 凝膠法 & 濁度法 (管式)

凝膠法

Gel Clot Technique

定性判斷，無需儀器，以
是否形成凝膠作為陽性 /
陰性依據

濁度法

Turbidimetric Technique

定量測定，需搭配
Toxinometer® 或微量盤
分析儀，以濁度變化速率
判讀內毒素濃度

產品特點

- 專一性內毒素試劑，避免 β -glucan 造成的偽陽性結果
- 提供單次試驗包裝或多次試驗包裝選擇
- 可作為凝膠法或動態濁度法 (KTA) 使用
- 動態濁度法可搭配 Toxinometer 或盤式分析儀進行
- 可搭配對應的控制標準內毒素 (CSE) 使用

PYROSTAR™ ES-F Single Test (檢體量 200 μ L)

Single Test Turbidimetric Technique Gel-clot Technique Endotoxin Specific FDA licensed

Cat.No.	Manufacturer Code No.	Product Name	CSE	Quantity
540-10101	WPESK-0015	PYROSTAR™ ES-F Single Test Kit, 0.015EU/mL	✓	25 tests
547-10351	WPESK-0003	PYROSTAR™ ES-F Single Test Kit, 0.03EU/mL	✓	25 tests
541-10371	WPESK-0125	PYROSTAR™ ES-F Single Test Kit, 0.125EU/mL	✓	25 tests
544-10361	WPESK-0025	PYROSTAR™ ES-F Single Test Kit, 0.25EU/mL	✓	25 tests

Gel-clot Sensitivity (EU/mL)	KTA Quantitative Range (EU/mL)
0.015	0.001 to 10
0.03 to 0.25	0.01 to 10



PYROSTAR™ ES-F (2 ML) Multi Test with CSE (檢體量 100 μ L)

Multi Test Turbidimetric Technique Gel-clot Technique Endotoxin Specific FDA licensed

Cat.No.	Manufacturer Code No.	Product Name	CSE	Quantity
548-10141	WPEK4-20015	PYROSTAR™ ES-F MULTI KIT (2ML), 0.015 EU/ML	✓	2 mL x 4 vials
541-10131	WPEK4-20003	PYROSTAR™ ES-F MULTI KIT (2ML), 0.03 EU/ML	✓	2 mL x 4 vials
545-10151	WPEK4-20006	PYROSTAR™ ES-F MULTI KIT (2ML), 0.06 EU/ML	✓	2 mL x 4 vials
542-10161	WPEK4-20125	PYROSTAR™ ES-F MULTI KIT (2ML), 0.125 EU/ML	✓	2 mL x 4 vials
549-10171	WPEK4-20025	PYROSTAR™ ES-F MULTI KIT (2ML), 0.25 EU/ML	✓	2 mL x 4 vials

Gel-clot Sensitivity (EU/mL)	KTA Quantitative Range (EU/mL)
0.015	0.001 to 10
0.03 to 0.25	0.01 to 10



PYROSTAR™ ES-F (2 ML) Multi Test, Bulk without CSE (檢體量 100 μ L)

Multi Test Turbidimetric Technique Gel-clot Technique Endotoxin Specific FDA licensed

Cat.No.	Manufacturer Code No.	Product Name	CSE	Quantity
546-10201	WPEM-20015	PYROSTAR™ ES-F MULTI KIT (2ML), BULK, 0.015 EU/ML		2 mL x 100 vials
546-10181	WPEM-20003	PYROSTAR™ ES-F MULTI KIT (2ML), BULK, 0.03 EU/ML		2 mL x 100 vials
543-10191	WPEM-20006	PYROSTAR™ ES-F MULTI KIT (2ML), BULK, 0.06 EU/ML		2 mL x 100 vials
540-10221	WPEM-20125	PYROSTAR™ ES-F MULTI KIT (2ML), BULK, 0.125 EU/ML		2 mL x 100 vials
543-10211	WPEM-20025	PYROSTAR™ ES-F MULTI KIT (2ML), BULK, 0.25 EU/ML		2 mL x 100 vials

Gel-clot Sensitivity (EU/mL)	KTA Quantitative Range (EU/mL)
0.015	0.001 to 10
0.03 to 0.25	0.01 to 10



Endotoxin-Specific LAL Reagents

PYROSTAR™ ES-F Series 凝膠法 & 濁度法 (管式)

PYROSTAR™ ES-F (5.2 ML) Multi Test with CSE (檢體量 100 µL)

Multi Test Turbidimetric Technique Gel-clot Technique Endotoxin Specific FDA licensed

Cat.No.	Manufacturer Code No.	Product Name	CSE	Quantity
543-10071	WPEK4-50015	PYROSTAR™ ES-F MULTI KIT (5.2ML), 0.015 EU/ML	✓	5.2 mL × 4 vials
542-10041	WPEK4-50003	PYROSTAR™ ES-F MULTI KIT (5.2ML), 0.03 EU/ML	✓	5.2 mL × 4 vials
547-10111	WPEK4-50006	PYROSTAR™ ES-F MULTI KIT (5.2ML), 0.06 EU/ML	✓	5.2 mL × 4 vials
544-10121	WPEK4-50125	PYROSTAR™ ES-F MULTI KIT (5.2ML), 0.125 EU/ML	✓	5.2 mL × 4 vials
549-10051	WPEK4-50025	PYROSTAR™ ES-F MULTI KIT (5.2ML), 0.25 EU/ML	✓	5.2 mL × 4 vials

Gel-clot Sensitivity (EU/mL)	KTA Quantitative Range (EU/mL)
0.015	0.001 to 10
0.03 to 0.25	0.01 to 10



PYROSTAR™ ES-F (5.2 ML) Multi Test, Bulk without CSE (檢體量 100 µL)

Multi Test Turbidimetric Technique Gel-clot Technique Endotoxin Specific FDA licensed

Cat.No.	Manufacturer Code No.	Product Name	CSE	Quantity
547-10231	WPEM-50015	PYROSTAR™ ES-F MULTI KIT (5.2ML), BULK, 0.015 EU/ML		5.2 mL × 100 vials
544-10241	WPEM-50003	PYROSTAR™ ES-F MULTI KIT (5.2ML), BULK, 0.03 EU/ML		5.2 mL × 100 vials
541-10251	WPEM-50006	PYROSTAR™ ES-F MULTI KIT (5.2ML), BULK, 0.06 EU/ML		5.2 mL × 100 vials
548-10261	WPEM-50125	PYROSTAR™ ES-F MULTI KIT (5.2ML), BULK, 0.125 EU/ML		5.2 mL × 100 vials
545-10271	WPEM-50025	PYROSTAR™ ES-F MULTI KIT (5.2ML), BULK, 0.25 EU/ML		5.2 mL × 100 vials

Gel-clot Sensitivity (EU/mL)	KTA Quantitative Range (EU/mL)
0.015	0.001 to 10
0.03 to 0.25	0.01 to 10



Endotoxin-Specific LAL Reagents

PYROSTAR™ ES-F/Plate 濁度法 (盤式)

產品特點

- 專一性內毒素試劑，避免 β -glucan 造成的偽陽性結果
- 單個測試僅需 50 µL 樣品體積，適用於珍貴養品的檢測
- 測試過程中 pH 變化對結果影響極小，內毒素測定穩定可靠



Multi Test Turbidimetric Technique Endotoxin Specific FDA licensed

Cat.No.	Manufacturer Code No.	Product Name	Quantitative Range (EU/mL)	CSE	Quantity
543-10331	WPEPK4-20015	PYROSTAR™ ES-F/PLATE TEST 2 mL × 4 vials	0.01 to 10	✓	160 tests (2 mL × 4 vials)
540-10341	WPEPK4-50015	PYROSTAR™ ES-F/PLATE TEST 5.2 mL × 4 vials	0.01 to 10	✓	400 tests (5.2 mL × 4 vials)
548-10401	WPEPM-20015	PYROSTAR™ ES-F/PLATE TEST 2 mL × 100 vials	0.01 to 10		4000 tests (2 mL × 100 vials)

Endotoxin-Specific LAL Reagents

Limulus Color KY Series 呈色法 (管式 & 盤式)

產品特點

- 定量動態呈色法 Quantitative Kinetic-Chromogenic Assay (KCA) 試劑
- 專一性內毒素試劑，避免 β -glucan 造成的偽陽性結果
- KCA 可搭配 Toximometer 或是盤式分析儀進行
- KCA 定量檢測靈敏度最低可達 0.0002 EU/mL



呈色法

Chromogenic Technique

定量分析，利用合成變色基質的切割反應，檢測內毒素啟動 LAL 試劑的活化反應，通過測量

黃色產物 p-nitroaniline 在約 405 nm 波長的吸光度進行定量分析。若樣品本身在 405 nm 波長具有明顯吸收，則不適用此方法

Type	Cat.No.	Product name	KCA Quantitative Range (EU/mL)	CSE	Measurement system	Sample (μL)	Quantity
Single-test	291-53601	Limulus Color KY Single Test Wako	0.0002 - 5	✓	Toxinometer® ET-7000	200	25 tests
Multi-test	291-53101	Limulus Color KY Test Wako	0.0005 - 5	✓	Toxinometer® ET-7000	100	60 tests
					Microplate reader	50	120 tests

Recombinant Cascade Reagent

PYROSTAR™ Neo+ 呈色法 (管式 & 盤式)

產品特點

- 為 Recombinant Cascade Reagent (rCR)，友善生態環境
- 專一性內毒素試劑，避免 β -glucan 造成的偽陽性結果
- 與傳統 LAL 試劑具有相同的反應機制，符合傳統檢測流程
- 偵測範圍廣 (0.001 至 50 EU/mL)，靈敏度高

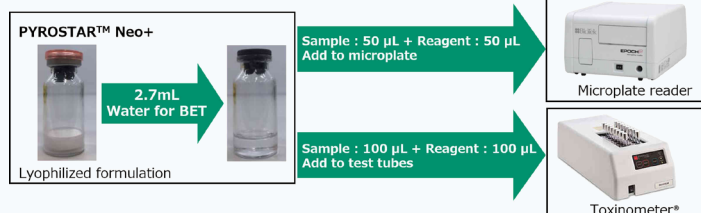


Multi Test Endotoxin Specific Recombinant

Cat.No.	Product Name	Size
293-36941	PYROSTAR™ Neo+	50 tests* (for 2.7 mL)

* For microplate reader : 50 tests
For Toxinometer™ : 25 tests

Reagent preparation



Endotoxin analysis systems

Toxinometer[®] ET-7000 (Cat. No. 293-36061)

產品特點

- 單一測試配置可避免產生「熱井 (Hot Wells)」干擾
- 支援凝膠法、動態濁度法 (KTA) 和動態呈色法 (KCA) 檢測方式
- 可同時測量多達 16 個樣品
- 可透過擴充模組倍數增加樣品數量 (每次以 16 為單位)
- 可設定溫度為 30°C 或 37°C
- 內毒素測定符合 FDA 指南與藥典 (USP/EP/JP) BET 檢測規範
- 需搭配 Toximaster FQC1 軟體



Endotoxin analysis systems (Software)

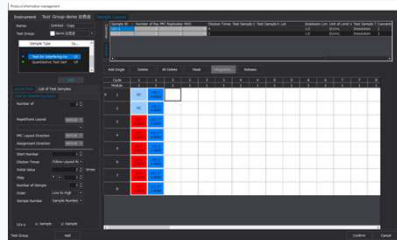
Toximaster[®] FQC1 (Cat. No. 290-36831)

產品特點

- 內毒素測定符合 FDA 指南及藥典 (USP/EP/JP) BET 測試規範
- 可進行產品結果趨勢分析，提早偵測潛在產品異常
- 可建立標準化工作流程，於操作前進行審查、確認與核可
- 提供安全控制功能：可鎖定應用程式、停用帳號並限制系統登入權限

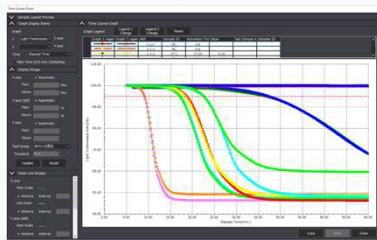


Protocol Settings



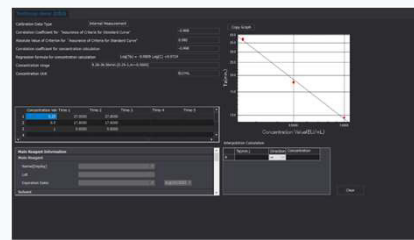
Easy to edit !
Once you create a protocol, you can start a measurement immediately.

Protocol Settings



Enables visual confirmation of measurement status.
You can predict results and prepare the next steps.

Protocol Settings



Conveniently monitored!
All information can be seen on one screen

Protocol Settings

A screenshot of the software's protocol settings screen, showing a form with fields for 'Test Record Name', 'Account Name', 'Password', 'Comment', and 'Workflow'. The 'Workflow' field is set to 'FFWK-3000'.

All measurement records are linked to signatures.
Never allows for manipulation and falsification

Protocol Settings

A screenshot of the software's protocol settings screen, showing a log file with columns for 'Date', 'Time', 'User', 'Action', and 'Status'. The log contains several entries.

Major procedures are recorded automatically.
History of operation can be confirmed as a log file.

Operation Authorities

- Modify System Preferences
- Register Instrument
- Register Protocol
- Register Reagent
- Register Accessory
- Register Standard Curve Data
- Register Product
- Load Protocol into Test Record
- Start Measurement
- Load Test Record
- Review Test Plan
- Confirm Test Record
- Approve Test Record
- Submit Test Record Etc .

Endotoxin Test Related Accessories

Control Standard Endotoxin

- 來自 E. coli UKT-B 的內毒素
- 可用於製備對照品與標準曲線
- 溶解後的 CSE 可在 2 - 10°C 保存一個月
- 提供與特定批次 LAL 試劑匹配的 RSE/CSE 比值



LAL Reagent Water

- 無內毒素水 (<0.001 EU/mL)
- 依據 USP 標準進行高壓蒸氣滅菌
- 來源為 USP 注射用水
- 不與 LAL 試劑產生反應



Endotoxin Extracting Solution for LAL Test

- 可從水或生理食鹽水無法萃取的表面萃取內毒素
- 建議用於檢測可能接觸含有血液或蛋白質液體的設備與器材中的內毒素



ES-Buffer

- 每瓶含有足量溶液，可用於回溶最多 5.2 mL 的試劑
- 適合用於回溶可能與 glucans 反應的 LAL 試劑，從而製備成具毒素專一性的試劑



LPS for endotoxin indicator

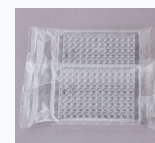
- E. coli 055:B5 (> 100,000 EU/vial)
- 一瓶可製備多個內毒素標準品
- 可用於驗證研究



Cat.No.	Manufacture Code No.	Product Name	Quantity
546-10061	CSE 4037-5006	Control Standard Endotoxin	6 vials (500ng/vial)
547-10091	LRW-2030	LAL Reagent Water, 30 mL	20 × 30 mL glass bottles
540-10081	LRW-12100	LAL Reagent Water, 100 mL	20 × 100 mL plastic bottles
293-51601		Endotoxin Extracting Solution for LAL Test	4 × 10 mL vials
548-10381	ESB-0006	ES Buffer	6 × 6 mL vials
545-10391	WLPS-0100K	LPS for Endotoxin Indicator	6 vials (>100,000 EU/vial)

BioClean Series

- 無內毒素 Pipette Tips (<0.005 EU/tip)，Extend S 加長型可輕鬆將試劑送達管底，避免汙染
- 無內毒素 96-well microplate (<0.01 EU/plate)，搭配 BioCleanTip Wako® Extend S 使用，可精準分注多重測試試劑，避免誤差與氣泡產生
- 獨立包裝，適用於無塵室使用
- 包裝膜具備防塵保護功能



Cat.No.	Product Name	Volume Size	Quantity
291-35021	BioCleanTip Wako® 200 II	200 µL	100 tips
298-35031	BioCleanTip Wako® 1000 II	1000 µL	100 tips
294-35011	BioCleanTip Wako® Extend S	200 µL	100 tips
293-35221	BioCleanPlate Wako™	96 wells	50 plates

Gel-clot Reaction Tubes

- Endotoxin-free
- 專為凝膠法測試設計
- 採用硼矽酸鹽玻璃製成



Cat.No.	Product Name	Volume Size	Quantity
542-10301	Gel-clot Reaction Tube	10 × 75 mm	200 tubes/pk
549-10311	Gel-clot Reaction tube, BULK	10 × 75 mm	1,250 tubes/pk
542-10281	Depyrogenated Dilution Tube	13 × 100 mm	50 pcs/pk
293-35221	BioCleanPlate Wako™	96 wells	50 plates

Endotoxin-free Test Tubes and Caps

- Endotoxin-free

Cat.No.	Product Name	Volume Size	Quantity
292-32751	Limulus Test Tube-S with Aluminum Cap	12 × 75 mm	80 pcs
293-26551	Limulus Test Tube-S	12 × 75 mm	100 pcs
293-28251	Aluminum Cap-S ×1	15 × 18 mm	100 pcs
290-13751	Aluminium Cap-M ×2	10.5 × 11.3 mm	100 pcs