Mérieux NutriSciences

MXNS-300 AI 菌落分析仪

当人工智能和食品微生物融合，见证AI守护舌尖安全

When AI meet with Food Microbiology

AI Colony Analyzer



MXNS-*300*

准确高效的自动食品微生物计数设备,告别培养皿肉眼计数时代。为您的实验室提供可追溯的微生物计数工具,检测计数效率提升至少20倍。

Accurate and Efficient Automatic Food Microorganism Counting Equipment, Say Goodbye to the Era of Manual Counting in Petri Dishes. Provide your laboratory with traceable microorganism counting tool, The counting efficiency is increased by 20 times.

图像采集
Image Acquisition

图像采集系统,获取优秀的高质量图片。

基于AI神经网络的视觉系统,针对菌落进行AI智能自适应自动曝光,自动识别菌落区域,并判断单菌落区域,智能调节曝光,高速反馈调节(10ms)。

Start with Excellent High-quality Images: Image Acquisition System.

The vision system based on the AI neural network conducts AI intelligent adaptive automatic exposure for bacterial colonies, automatically identifies the colony areas, judges the single colony areas, intelligently adjusts the exposure, and provides high-speed feedback adjustment (10ms).

精准计数
Precise Counting

菌落精准计数:基于AI神经网络的深度学习(CNN)进行菌落分析。超强的适应能力,可应对复杂的现实场景。

EfficientNet分类模型:可精准处理多菌株粘连问题。

有效识别菌落总数,乳酸菌,肠杆菌科及大肠菌群,霉菌酵母的计数平板。

Precise Colony Counting: Analyze colonies using a deep - learning vision system (CNN model) based on an AI neural network. It has excellent adaptability and can handle complex real - world scenarios.

EfficientNet classification model: It can accurately handle multiple bacterial culture sticking issue.

Effectively identify plates of TPC, lactic acid bacteria, enterobacteriaceae and coliforms, and count plates of mold yeast.

一键导出
One-click Export

支持多张照片连续拍摄,一键导出数据及结果。

AI快速分析结果并导出,LIMS系统支持与调用。

Support multiple photos continuous shooting, export data and results with one click.

AI fast analysis results and export, LIMS system support.

基质（举例）Matrix (example)

巧克力、烘焙产品、糖果 *Chocolate, bakery products and confectionary*	宠物食品及饲料 *Pet food and animal feed*
乳及乳制品 *Milk and dairy products*	环境样品（食品或饲料产品） *Environmental samples (food or feed production)*
肉及加工肉制品 *Raw meat and ready-to-cook / eat meat products*	谷物干、水果干、干坚果、干种子、干蔬菜 *Dried cereals, fruits, nuts, seeds and vegetables*
海产品 *Seafoods*	新鲜果蔬及加工果蔬 *Fresh and Processed produce and fruits*

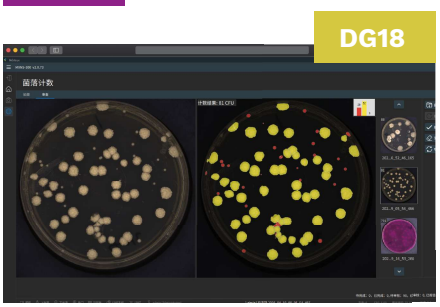












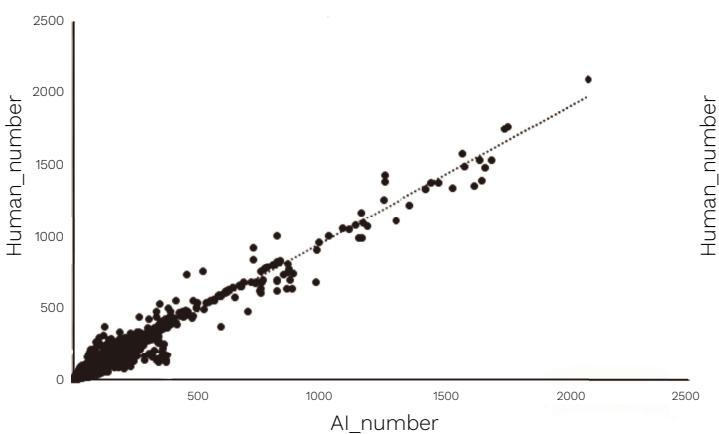


图1. 260种自然食品基质及环境样本AI和人工计数对比结果

Figure 1. Comparison results between AI and manual counting for 260 kinds of natural food matrixes and environmental samples.

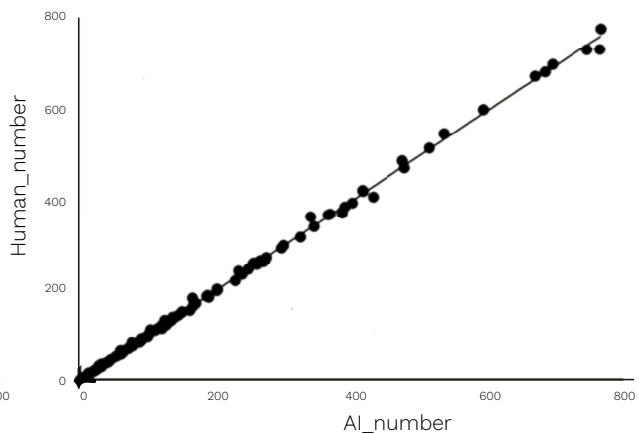


图2. 加标微生物测试样本AI和人工计数对比结果

Figure 2. Comparison results between AI and manual counting for spiked microbial test samples.



简单 Simple

一键计数，零学习成本操作

无需人工干预，自动记录数据

One-click counting, zero learning cost operation

No manual intervention required,automatic data recording

准确 Accurate

深度学习，准确度高，自适应各种食品基质

完成真实食品基质人工比对验证，准确率>98%

Deep learning, high accuracy, adapting to various food substrates

Completing comparison and verification of real food substrates between AI and human with an accuracy rate >98%

可靠 Reliable

图片清晰留存

数据完整可追溯

告别培养皿人工计数

已完成 ISO 16140-2 方法验证

The pictures are clear to be saved

The data is complete and traceable

Farewell to the manual petri dish counting

Complete method validation according to 16140-2

高效 Efficient

可提高人工肉眼计数效率>20倍

LIMS对接，微生物测试实现无纸化

Improve the efficiency of eye counting by 20 folds

LIMS docking and achieve paperless microbial testing





MXNS-300

性能参数
Performance Parameter

光学系统 Optical System

CMOS	2000万像素	CMOS	~20 million Pixel
相机靶面	1寸	Camera Sensor	1 inch
光源组合	环形暗场+背部透射	Light combination	dark field + bright field
镜头分辨率	>150lp/mm	Optical Resolution	>150 lp/mm
光学分辨率	0.05mm	Colony resolution	0.05mm

分析系统 Analysis System

计算平台	内置，支持脱机使用，支持升级GPU	Computer	Built-in, GPU upgradable
计数速度[1]	<1s~5s	Processing Speed[1]	<1s~5s
计数模式	手动/自动	Counting Mode	Manual / Automatic
计数精度[2]	±1CFU，≤50CFU; >98%, 51-300CFUmm	Counting Accuracy[2]	±1CFU，≤50CFU; >98%, 51-300CFUmm

系统支持 System Support

样本容器	90mm标准培养皿（支持55mm标准培养皿及其他规格容器定制）	Sample Container	90mm standard Petri dish (Customization of 55mm standard Petri dish and containers of other specifications is supported)
触发方式	机身按键+软件	Triggering Method	Body button + software
消毒方式	265nm紫外光	Sterilization	265nmUV
LIMS信息追溯	支持	LIMS	Support
数据完整性	支持，符合FDA21 CFR Part11	Data Integrity	Compliant with FDA 21CFR Part11
3Q验证	支持	3Q Validation	Support
关键功能	高分辨率、菌落特征增强、自动计数/识别、人工智能计数/识别，内部免接触、批量计数识别、精简软件界面	Key Functions	High resolution, enhancement of colony characteristics, automatic counting/recognition, artificial intelligence counting/recognition, internal contactless operation, batch counting and recognition, streamlined software interface
培养基类型	平板计数琼脂，胰蛋白胨大豆琼脂，结晶紫中性红胆盐琼脂，结晶紫中性红胆盐葡萄糖琼脂，MRS琼脂，孟加拉红琼脂，马铃薯葡萄糖琼脂（PCA, TSA, VRBA, VRBGA, MRS, DRBC,PDA等）。	Media Type	Plate Count Agar, Tryptone Soybean Agar, Crystal Violet Neutral Red Bile Salt Agar, Crystal Violet Neutral Red Bile Salt Glucose Agar, MRS Agar, Bengal Red Agar, Potato Glucose Agar (PCA, TSA, VRBA, VRBGA, MRS, DRBC, PDA, etc.).
接种方式	倾注、涂布、滤膜等	Inoculation	Pouring, spreading, membrane filtration, etc.
重量	14kg	Weight	14kg
尺寸	315mm*400mm*495mm	Dimensions	315mm * 400mm * 495mm

[1] 使用快速计数模式 Under rapid calculation mode conditions

[2] 使用检验专用标准样本进行测试 Using dedicated standard samples for inspection testing

Mérieux NutriSciences

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