

To: All Concerned

October 13, 2023

Shimadzu Diagnostics Corporation

## New AI Solution Launched: @BactLAB™, the Colony Counter Global Service

Since August 2018, Shimadzu Diagnostics Corporation has been using the AWS (Amazon Web Service) cloud and AI (artificial intelligence technology) to quickly and easily count colonies, with the aim of contributing to food hygiene market development and quality control overseas. We are developing the application "@BactLAB™" (hereinafter referred to as @BactLAB) as a solution for companies using CompactDry™, a simple culture medium for bacterial count measurement, which is our main product in overseas markets. We would like to inform you that we have implemented new AI (artificial intelligence technology) and functional improvements to @BactLAB.



@BactLAB™ official website: <https://corp.sdc.shimadzu.co.jp/english/products/global/bactlab/>

Application available at: Google Play / Apple Store / Amazon Appstore / PC (Online Service)



**【@BactLAB Supported device platforms】**

Google Play : Android 13.0 or later

Apple Store : iOS 16.3 or later.

amazon appstore : Android 13.0 or later / Fire OS 8.3.1.2 or later

PC (Online Service) : Windows 11 or later (Edge, Firefox, Chrome)

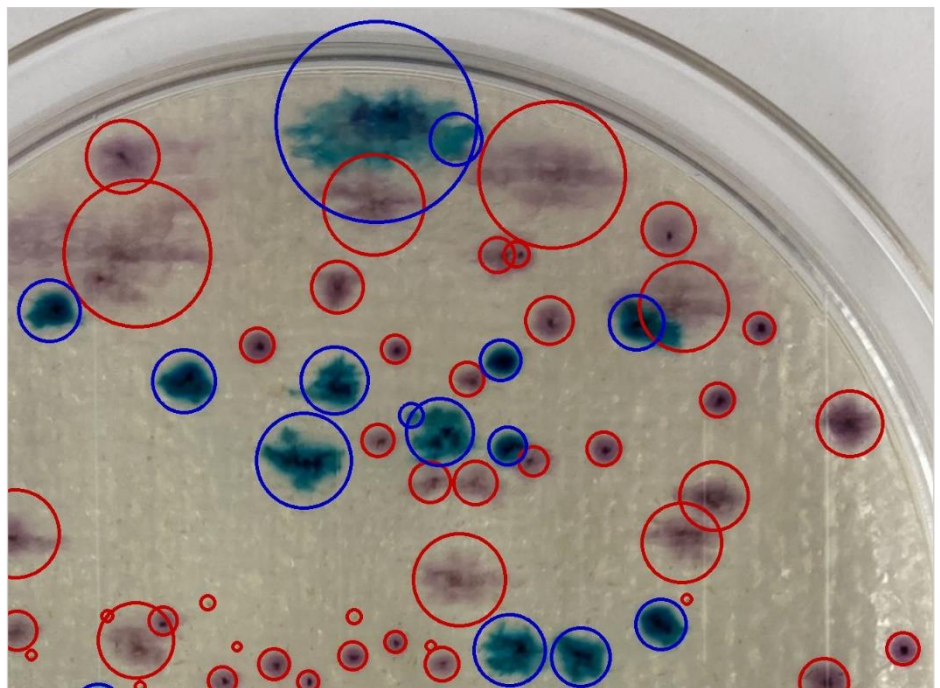
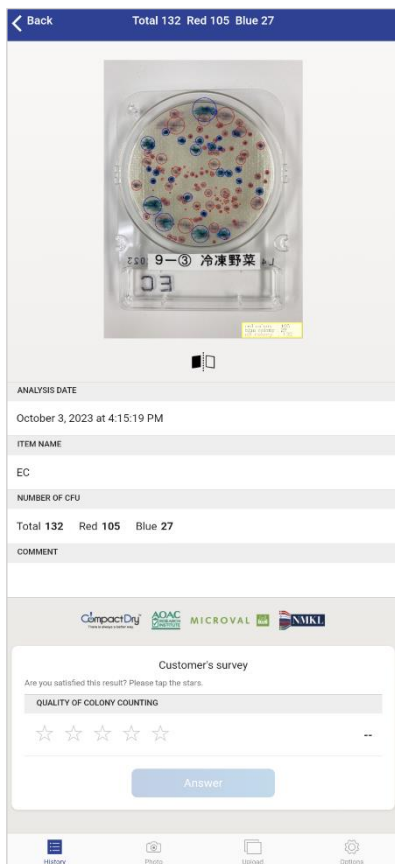
MacOS 13.2 or later and a Mac with Apple M1 chip or later (Safari, Firefox, Chrome)

**【@BactLAB Colony Count Image Processing Technology】**

Regarding the colony counting process, the processing with the initial AI model released in August 2018 had implemented counting technology image processing that combines "image processing" and "machine learning (Deep Learning)" for colony position detection. In the AI model released in July 2023, object detection AI network (machine learning model) [YOLOv4] that processes position (area) detection and class classification in one network is used as a backbone and implemented as a hard-tuning AI enabling business use by repeated inference verification tests specializing in colony detection (counting).

The object detection AI network [YOLOv4], which is called a real-time object detection algorithm and stands for "You Only Look Once" has maximized the performance and contributed to the accuracy and processing speed of colony counting by utilizing the following characteristics,

“Single-shot object detection characteristics” “Algorithm strong for real-time detection” “Processing speed is a great advantage” Please feel free to use it and experience it.



CompactDry™ EC (*Escherichia coli* / Coliforms )

*E. coli* = Blue / Blue-Purple colonies

Coliforms = Red / Red-Purple colonies

Colony Count : Blue circle drawing = *E. coli*

Colony Count : Red circle drawing = Coliforms except *E. coli*

**【@BactLAB Service Overview】**

- \* Please note that the information in this document may be slightly different from the actual function since we sequentially offer new services.
- \* Please note that the specification or performance may be changed without notice.
- \* This service is an application designed exclusively for CompactDry™ customers.
- \* We recommend a Wi-Fi environment when using the smartphone app.
- \* Depending on the target image, there may be a counting error of up to 3%.
- \* A colony count result of “0” does not indicate a negative result.
- \* The cloud image recognition technology used in this service is an AI technology for image recognition system, co-developed by Shimadzu Diagnostics Corporation and Hitachi Solutions, Ltd.
- \* Shimadzu Diagnostics Corporation takes no responsibility for the analysis results provided by this service.

**【Notices and List of Trademarks appearing on Service Representations and Specifications】**

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The use of @BactLAB™ and Global Cloud to manage data enables more comprehensive quality control at suppliers and manufacturing facilities in the food production industry. In the future, we are planning on creating a system where it becomes possible for the quality control department (QC/QA division) at a group of companies to monitor the status of every step in the process at each site in real time, from raw material acceptance, processing, production, manufacturing, and deliveries to quality assurance, thus expediting the business of food hygiene inspections in overseas markets.

For service-related questions, contact us at

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