MiCAN Technologies, Inc.
Kyoto-University Katsura Venture Plaza, 1-36, Goryo-ohara,
Kyoto Nishikyo-ku, Kyoto 615-8245, Japan
+81-75-381-3008
https://micantechnologies.com
info2@micantechnologies.com

Easy evaluation using MyIc is now available.

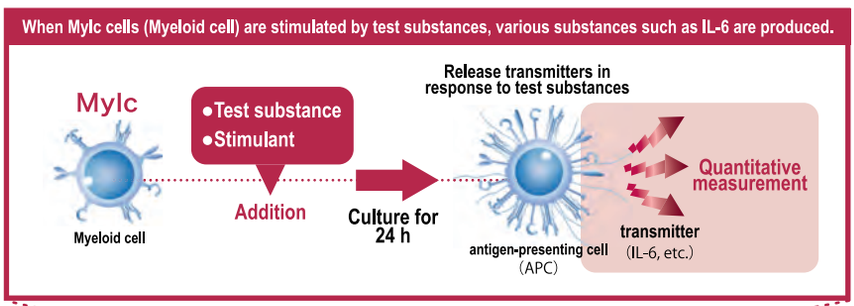
MyIcMAT kit

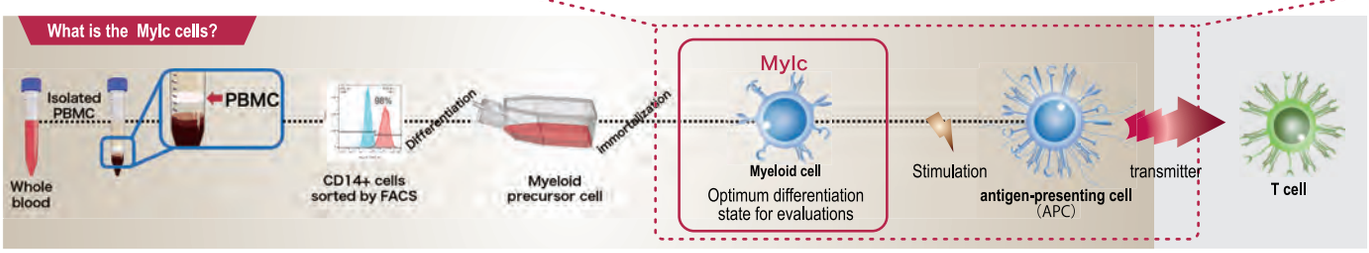


It is expected that the implementation of Monocyte Activation Test (MAT) will be essential for new modalities such as regenerative medicine. We have developed a pyrogen testing method using human peripheral blood mononuclear cell (PBMC)-derived immortalized myeloid cells called "aMyIc cells."
You can start evaluation quickly with this optimized kit.
The result can be obtained within 24 hours after adding the test substances.

Principle of evaluation

When a test substance is added, it reacts with C-type lectin receptor (CLR) and toll-like receptor (TLR) on the surface of MyIc cells. The inflammatory cytokine (IL-6) produced can then be measured.
In 24 hours, the intensity of the stimulation by the test substance can be evaluated numerically, which enables judgment of the function.





Assay procedure



STEP 1 Thawing of MyIc cells
Frozen cells in a vial are thawed in a water bath.

STEP 2 Preparation of MyIc cells
After washing by centrifugation, the cells are resuspended in a specific culture medium.

STEP 3 Seeding of cells
Cells are seeded at a certain density in 96-well culture plates.

STEP 4 Addition of test substance
Add test substance or the stimulant, and culture for 24 h.

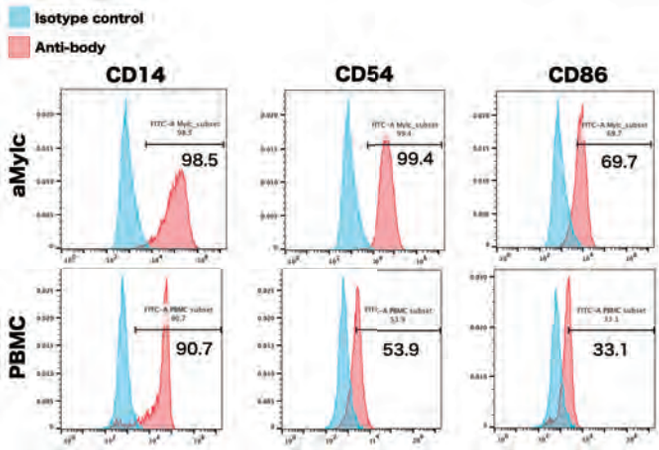
STEP 5 Collection of culture supernatant
Transfer culture supernatant from each well to the 96-well culture plate in the kit.

STEP 6 Measurement of IL-6 in culture medium
Quantified in a colorimetric ELISA assay according to the method attached to the kit.

Evaluation experiment

Comparison Experiment between MyIc Cells and PBMC

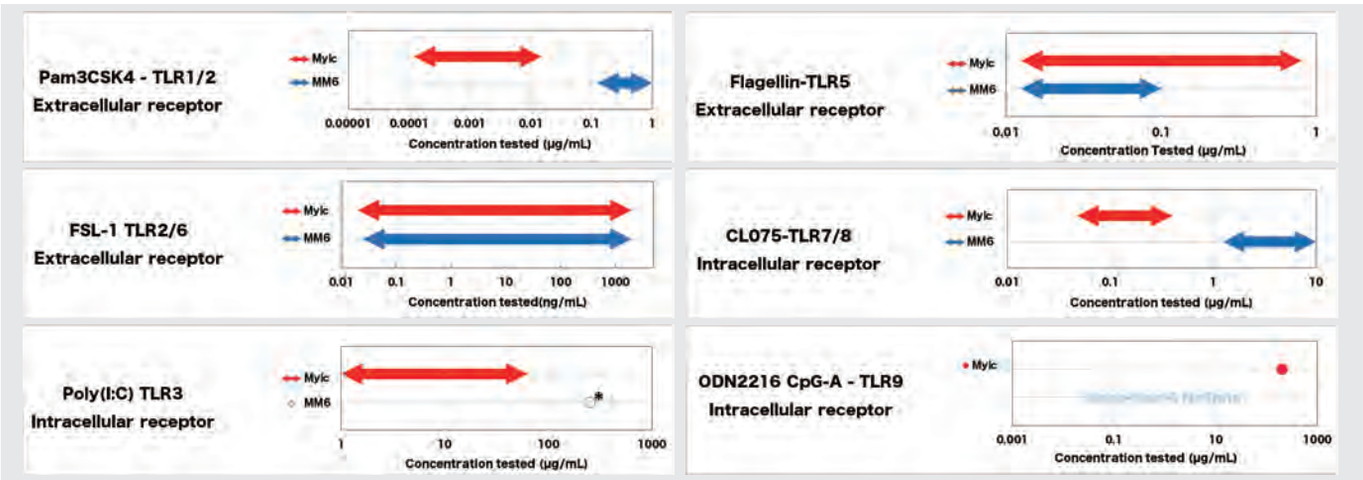
Confirmation of Expression of "CD14," "CD54," and "CD86" in aMyIc Cells and PBMC-Derived. CD14-Positive Cells



Using magnetic beads, we isolated CD14-positive cells from PBMC and measured surface markers using FACS. We thawed the previously frozen aMyIc cells and immediately performed measurements with FACS. The evaluation of CD14, CD54, and CD86 revealed that all markers remained positive.

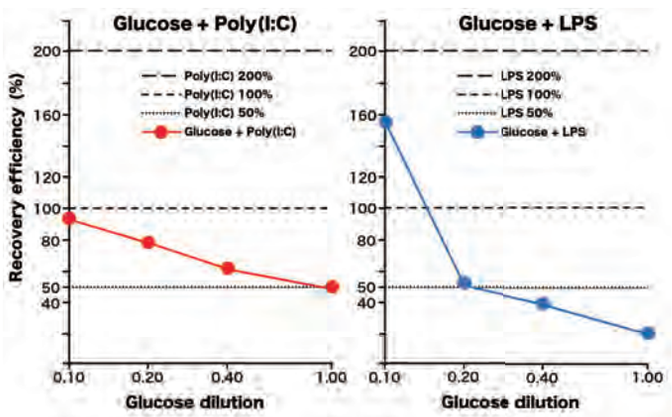
Comparison Experiment between MyIc Cells and Mono-Mac-6 Cells

Comparison of IL-6 Production between MyIc Cells and Mono-Mac-6 Cells for 6 Pyrogenic Substances
A graph illustrating the responsiveness to stimulation at various concentrations of each pyrogenic substance.
The "＊" symbol in the graph indicates the absence of response to stimulation even at the highest concentration.



Interference Experiment of Test Substance - Glucose

We conducted an interference experiment under the condition where 1% Poly(I:C) or LPS was added to a diluted glucose



We prepared samples by mixing 1% Poly(I:C) or LPS with a diluted glucose solution and conducted an interference experiment under the mixed condition. The evaluation was performed using ELISA, and the recovery rate was calculated based on the results obtained with Poly(I:C) and LPS without mixing. When Poly(I:C) was added to the undiluted glucose solution (considered as 1 for the product itself), the recovery rate was 50%. However, when the glucose solution was diluted 10 times, the recovery rate exceeded 90% (left figure).