

# Anti-diabetic effect-1

Effect of Lactobacilli metabolites on Streptozotocin (STZ)-induced diabetic model rats

## 1) Materials and methods

Tested sample: Lactobacilli metabolites complex II (=Lmc II ; Filtrate liquid through the mixture of the fermented Lactobacilli culture)

Animals: STZ-induced diabetic model rats.

Methods: STZ-induced diabetic model rats were prepared by an intravenous injection of STZ at 1 mg/Kg, and the rats with hyperglycemia on the next day were used.

Lmc II was given to the rats by oral administrations of 2 mL and 4 mL once a day for 4 weeks.

Blood sugar level in each rat was determined at days 0 (pre), 7, 14, 21, and 28 days.

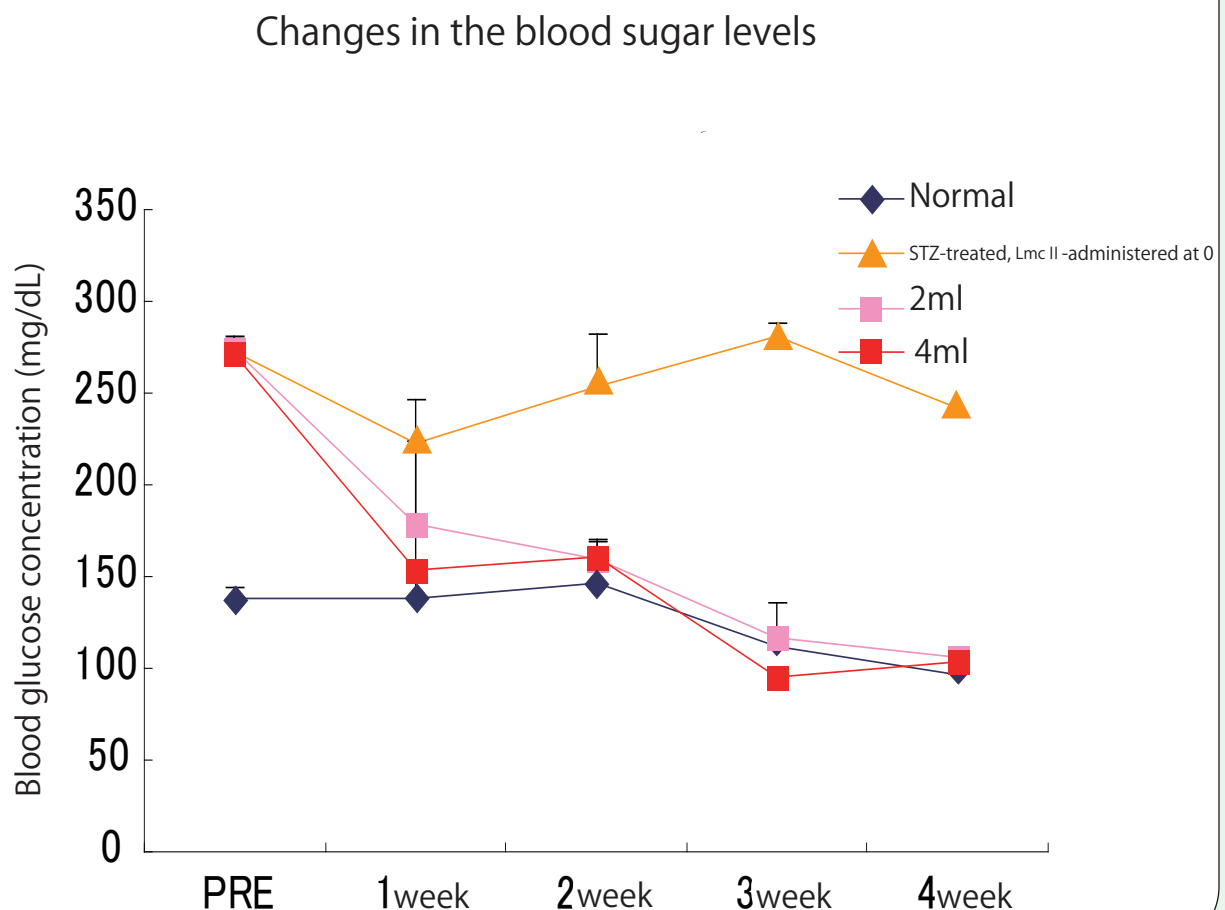
## 2) Results

Figure 1 shows the changes in the blood sugar levels in the normal and STZ-induced diabetic model rats by oral administration of Lmc II . The result indicates that Lmc II may lower significantly the blood sugar in the STZ-induced diabetic model rats.

## 3) Conclusion

It is likely that Lactobacilli metabolites may be effective on the diabetes mellitus although further investigations are required.

4) Organization which performed the test : Drug Safety Testing Center Co., Ltd. (Tokyo, Japan)



## Anti-diabetic effect-2

Auxiliary clinical effect of Lactobacilli metabolites on the patients with diabetes mellitus

### 1) Materials and methods

Tested sample: Lactobacilli metabolites complex II (Lmc II ; Filtrate liquid through the mixture of the fermented Lactobacilli culture)

Patients: Patients with Type I (5 persons) and Type II (95 persons) were selected.

Methods: The patients were divided into 2 groups and Lmc II was given twice a day (morning and evening at hunger) to one group (50 patients) and 3 times (morning, noon and evening at hunger) to another group (50 patients) for 8 weeks without cease of taking ordinary drugs.

Diagnostic several values were observed for each patient before and after the treatment.

### 2) Results

Figure 2 shows the changes in the blood sugar levels in the patients with diabetes mellitus before and after the treatment with oral administration of Lmc II . Blood sugar and HbA1c (glycosylated hemoglobin) values were significantly lowered by the treatment.

Figure 3 summarizes the auxiliary clinical effect of Lmc II administration for the 100 diabetic patients.

Remarkable effect of Lactobacilli metabolites was observed in 24% of the patients and it was effective in 62% of the patients. It is notable that Lactobacilli metabolites can improve not only the blood sugar level but also systemic function such as heart and kidney.

### 3) Conclusion

It is noteworthy that Lactobacilli metabolites may be effective for the patients with diabetes mellitus not only by lowering blood sugar but also improving the systemic functions such as kidney and heart.

### 4) Organization which performed the test : China-Japan Friendship Hospital (Beijing, China)

