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Life-style related diseases in Enterococcus Faecalis 2001

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Abstract

Recognition of ill severity is low in hyperlipidemia in comparison with life-style related diseases such as diabetes mellitus or high blood pressure. In this study, we used an Enterococcus Faecalis2001 (EF 2001), and studied anihyperlipidemia using a model mouse of hyperlipidemia. We used an HcB-19/Dem (HcB-19) mouse for animal used for experiment and we divided it into control group, EF2001 250mg/kg treated group, EF2001 400mg/kg treated group and tested it. We performed fast of 12 hours before drawing blood and we collected blood by nuki drawing blood in a hungry state and took out serum after centrifugal separation and measured total cholesterol, quantity of triglycerides than the serum. In addition, we measured a lipoprotein of surplus triglyceride, plasma apolipoprotein B of surplus cholesterol. As for the total cholesterol, the total cholesterol value showed a low value in comparison with control group. We compared it with control group, and, in measurement results of triglyceride, significant difference was seen with 250mg/kg treated group five weeks later three weeks later two weeks later. In addition, significant difference was seen with 400mg/kg treated group in comparison with control group five weeks later three weeks later two weeks later. As for the cholesterol fall action of EF2001, it is speculated with a thing by constancy of the polysaccharides that are included a lot in EF2001, immune system by other various active principles, endocrine system.
Life-style related diseases in

Enterococcus Facalis 2001

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Enterococcus Faecalis under microscope (left) × 20, (right) × 12900
Material and Methods

- HcB-19/Dem (HcB-19) mouse for animal used for experiment,
- 22±3°C; Humidity: 60-70%, feed and water: free intake
- After extra breeding for one week
- Groups: control group, EF2001 250mg/kg treated group, EF2001 400mg/kg treated group.
- Plasma: triglyceride, cholesterol.
- Lipoprotein of surplus triglyceride, plasma apolipoprotein B of surplus cholesterol.
Total cholesterol by *EF2001* and a change of quantity of triglyceride

- Experimental group
- Five ICR mouse week of age males
- Control distilled water administration
- EF2001 250mg / kg administration
- EF2001 400mg / kg administration
- Normal distilled water administration (ICR mouse week of age female)
Material and Methods 3

- We measure total cholesterol and quantity of triglyceride by we use triglyceride E test Wako, and measuring absorptive and we compare it with subject group and do that it is a hyperlipidemia model mouse with control (distilled water) group, EF2001 250mg/kg treated group, EF2001 400mg/kg treated group, Normal (subject) group after confirmation. We performed fast of 12 hours before drawing blood and we collected blood by fundi drawing blood in a hungry state and took out serum after centrifugal separation and measured total cholesterol, quantity of triglyceride than the serum.

- The measurement methods conformed to each protocol.
- Experimental material and a measuring machine device
  - EF2001 (Japan BRM Co., Ltd.)
  - Cholesterol E test Wako (Wako Pure Chemical Industries, Ltd.)
  - triglyceride E test Wako (Wako Pure Chemical Industries, Ltd.)
  - Mouse rat hamster breeding breeding model CE-2 (Nippon Kurea)
  - CLEA Rodent Diet Quick Fat (Nippon Kurea) for mouse, rat, hamsters
- Statistical analysis: results express it with mean ± standard error of mean and perform evaluation of each study group by Dunnett test for control as primary official approval and carry out Fisher official approval as second official approval for a thing significantly different afterwards and perform control and comparison with each examination sample application group.
Total cholesterol level (mg/dl). Each line represents the mean value ± S.E. Analyzed by Dunett-test. *P<0.05
Total triglyceride level (mg/dl). Each line represents the mean value ± S.E. Analyzed by Dunett-test. *P<0.05
The number of the SM colon bacilli in feces

The number of the SM colon bacilli in feces increases with decreasing n values.
Hypertension inhibitory effect of EF 2001. Each line represents the mean value ± S.E. Analyzed by Dunnett-test. *P<0.05
Proteolysis structure system of EF2001
EF2001 and Lipids in cell signaling interaction

Lipids in Cell Signaling

Cell Membrane Phospholipids

Phospholipase A2

Arachidonic Acid

15-Lipoxygenase

15-HPETE

LPA

LPB

Cyclooxygenase

COX-1

COX-2

S-Lipoxygenase

Cyclic Endoperoxides

Isomerases

PGI₂

PGE₂

PGF₂α

PGD

PGA₂

TXA

LTA₄

LTC₄

LTD₄

LTE₄

Lipoxins

Prostaglandins

Leukotrienes

LTB₄
Conclusions

- As for the treated group, the meaningful difference was not obtained in comparison with control group, but the competition total cholesterol value showed a low value in control group.

- Significant difference was seen with 250mg/kg treated group in comparison with control group five weeks later three weeks later two weeks later. In addition, significant difference was seen with 400mg/kg treated group in comparison with control group five weeks later three weeks later two weeks later.

**EF 2001 of \( \beta-(1-3) \) D-glucan, \( \beta-(1-6) \) D-glucan,**

\( \beta (1-3) \) D-Glucan  ➔ It is lymphocyte activity of small intestinal from intestinal absorption difficulty

\( \beta (1-6) \) D-Glucan  ➔ Enteral good bacteria disintegrate (connection with intestinal flora)