

Clinical Trial at Kitasato Institute, Japan

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Summary

Excessive oxidation reaction in living bodies induces sedimentation of blood cells such as erythrocytes and leukocytes on the intima of the blood vessels, contribution to occurrence of arteriosclerosis. The major causes are attributed to activation of vascular endothelial cells and stimulation of platelet agglutination due to lipid peroxides. These are usually caused by excessive intake of lipid, influences of intestinal environment or stresses. The following clinical study was conducted with healthy volunteers using “preB food,” which is classified as a fermented vegetable food, and is recognized to affect the intestinal bacterial flora, which is conducive to controlling the intestinal environment. PreB is a kind of supplemental health food containing over 55 kinds of grains, vegetables, fruits and wild herbs. Hematological and biochemical tests centering on hepatic function assessment were performed before and after the ingestion of the test substance.

Together with molecular biological analyses of the intestinal bacterial flora, and immunological analyses mainly on T cells, the presence or absence of the possible influences of preB on the body was investigated.

The results confirmed that the ingestion of preB does not provide any influences on either hepatic functions or changes in lipid metabolisms. In addition, it indicated that in more than half the volunteer subjects there was a change in the intestinal environment. It suggested that preB would not cause any safety-related problems, and at the same time exhibit positive effects on the intestinal environment.

Introduction

Oxidated substances produced by aging and stresses in the body are involved in the excessive accumulation of hyper-oxidated lipids, hepatic disorders and arteriosclerosis. They also possess the risk of inducing carcinogenicity through DNA damage in the cells. Oxidated substances in the body exist as metabolites, which are derived from the biological defense mechanisms. In addition, however, they accumulate excessively in the body due to westernized dietary habits or stresses, and currently attention has been paid to them as one of the causes of the stimulation of aging along with the above-stated diseases. In this connection, excessive ingestion of lipids is responsible for the onset of lifestyle-related diseases including arteriosclerosis and hypertension as their direct causes whereas the intestinal environment is also designated as one of the indirect factors to incur these diseases. For the purpose of improving the intestinal environments, probiotic products, mainly comprising lactic acid bacteria beverages, have currently been employed. In this relation, development of functional foods exerting normalization of the intestinal environment and anti-oxidation effects against oxidants is highly expected in terms of their usefulness as the QOL improving supplements.

PreB used in the present study is designated as a liquid-type health food containing vegetable-origin lactobacillus and dietary fiber. PreB also contains other useful ingredients such as Lutein, which is a yellow pigment contained in green and yellow vegetables and is known to exert anti-oxidation effects, plus it represents carotenoids (pigment group) like β -carotene and lycopene. In the present study, efficacy confirmation and the safety verifications were conducted using preB in healthy volunteers as the study subjects.

Title Safety study on preB

Study Number 00802

Purpose: To re-confirm the safety of preB by assessing the hepatic function test items, and also to analyze the possible influences on the intestinal environment.

Sponsor

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Study Director: Suzuki Tatsuo

Date of study initiation: May 14, 2008
Date of study completion: September 9, 2008
Date of preparation of the final report: September 17, 2008

Methods

1. Materials

1.1 Test substance

Name: PreB

Code number:

Reference: A kind of supplemental health food containing over 55 kinds of grains, vegetables, fruits and wild herbs.

1.2 Test subjects

Animal species: Human

Strain: Yellow race of Asian descent

Gender: Both sexes

Age: Healthy volunteers of 20 years old or older

Enrolled number: 10 Males and 20 females, 30 in total.

2. Test methods

Screening of the test subjects

On 40 candidate test subjects (15 males and 25 females) who showed normal ranges of respective hematological test values (within 3SD from the highest and the lowest limit of the normal values), but took no medical drugs continuously (daily); physician's inquiry, physical determination, urine collection and blood collection were conducted to perform various tests including the general hematological tests. Based on the test results, 10 males and 20 females were selected as the test subjects.

2.1 Test methods

To each of the 10 male and 20 female healthy test volunteers, one dose (15grams) of the test substance was given after breakfast and after supper (30 grams per day).

The administration period was designated as one month (28 days). Before commencement, and at the completion of administration, urine samples, blood samples and fecal samples were collected. These were used for various tests such as the general hematological tests, intestinal bacterial flora tests and immunological tests. Simultaneously, the physician's inquiry was conducted at the time of the commencement of the test and at the completion of the test.

2.3 Test items

Physical determination: Height, body weight, body fat mass (only at the initiation of the test and at the completion of the test), and blood pressure.

Physician's inquiry: Gastrointestinal symptoms and general physical conditions

Full set of hepatic function tests: AST, ALT and ALP (Enzymatic method), etc.

Full set of renal function tests: Creatinine, etc.

Hemoglobin, cholesterol, triglyceride

Determination of CD2/CD20/CD4/CD8

Determination of plasma cytokines

Determination of bacterial flora in feces

Results

3.1 Influences of administration of preB on blood corpuscle cells in blood

In the male subjects, WBC values were $69.8 \pm 14.63/\times 10^2 \mu\text{L}$ before initiation of the study and $63.50 \pm 8.75/\times 10^2 \mu\text{L}$ at the end of the study (Figure 1 and Table 1).

RBC values were $49.09 \pm 2.66/\times 10^5 \mu\text{L}$ before initiation of the study and $47.52 \pm 1.99/\times 10^5 \mu\text{L}$ at the end of the study (Figure 1 and Table 1).

Hb values were $15.20 \pm 0.88 \text{ g/dL}$ before commencement of the study and $14.77 \pm 0.78 \text{ g/dL}$ at the end of the study (Figure 1 and Table 1).

Hematocrit values (Hbt) were $44.05 \pm 2.38\%$ before start of the study and $42.90 \pm 1.89\%$ at the end of the study (Figure 1 and Table 1).

Platelet counts (Plt) were $26.87 \pm 4.46/\times 10^4 \mu\text{L}$ before commencement of the study and $25.29 \pm 3.52/\times 10^4 \mu\text{L}$ at the end of the study (Figure 1 and Table 1).

In female subjects, WBC values were $64.10 \pm 12.47 \times 10^2 \mu\text{L}$ before initiation of the study and $61.65 \pm 12.92 \times 10^2 \mu\text{L}$ at the end of the study (Figure 1 and Table 1).

RBC values were $41.77 \pm 3.56 \times 10^5 \mu\text{L}$ before initiation of the study and $40.50 \pm 3.25 \times 10^5 \mu\text{L}$ at the end of the study (Figure 1 and Table 1).

Hb values were $12.54 \pm 1.36 \text{ g/dL}$ before commencement of the study and $12.24 \pm 1.16 \text{ g/dL}$ at the end of the study (Figure 1 and Table 1).

Hematocrit values (Hbt) were $37.12 \pm 3.41\%$ before start of the study and $36.13 \pm 2.82\%$ at the end of the study (Figure 1 and Table 1).

Platelet counts (Plt) were $28.55 \pm 5.38 \times 10^4 \mu\text{L}$ before commencement of the study and $28.46 \pm 5.55 \times 10^4 \mu\text{L}$ at the end of the study (Figure 1 and Table 1).

As stated above, the findings in all the test items concerning the blood corpuscle cells in blood were within the normal ranges irrespective of males or females.

3.2 Influences of administration of preB on hepatic functions

In male subjects, AST values were $25.55 \pm 7.52 \text{ IU/L}$ before start of the study and $25.30 \pm 9.65 \text{ IU/L}$ at the end of the study (Figure 2 and Table 2).

ALT values were $35.20 \pm 20.86 \text{ IU/L}$ before beginning of the study and $31.60 \pm 16.08 \text{ IU/L}$ at the end of the study (Figure 2 and Table 2).

ALP values were $224.00 \pm 64.15 \text{ IU/L}$ before commencement of the study and $222.60 \pm 75.78 \text{ IU/L}$ at the end of the study (Figure 2 and Table 2).

In female subjects, AST values were $17.15 \pm 2.68 \text{ IU/L}$ before start of the study and $17.05 \pm 2.74 \text{ IU/L}$ at the end of the study (Figure 2 and Table 2).

ALT values were $14.25 \pm 3.29 \text{ IU/L}$ before beginning of the study and $13.55 \pm 4.71 \text{ IU/L}$ at the end of the study (Figure 2 and Table 2).

ALP values were $164.25 \pm 31.81 \text{ IU/L}$ before commencement of the study and $168.60 \pm 30.99 \text{ IU/L}$ (Figure 2 and Table 2).

As stated above, the findings in all the test items regarding the hepatic function test values except AST values in male subjects were within the normal ranges irrespective of sexes.

3.3 Influences of administration of preB on lipid metabolism

In male subjects, high-density lipoprotein cholesterol values (HDL-CHO) were 4550 ± 6.31 mg/dL before commencement of the study and 48.55 ± 8.18 mg/dL at the end of the study (Figure 3 and Table 2).

Low-density lipoprotein cholesterol values (LDL-CHO) were 121.50 ± 35.20 mg/dL before beginning of the study and 123.00 ± 29.71 mg/dL at the end of the study (Figure 3 and Table 2).

Triglyceride values were 196.20 ± 8.4 mg/dL before start of the study and 171.20 ± 160.34 mg/dL at the end of the study (Figure 3 and Table 2).

In female subjects, high-density lipoprotein cholesterol values (HDL-CHO) were 67.40 ± 14.08 mg/dL before commencement of the study and 63.00 ± 11.47 mg/dL at the end of the study (Figure 3 and Table 2).

Low-density lipoprotein cholesterol values (LDL-CHO) were 103.90 ± 15.44 mg/dL before beginning of the study and 101.70 ± 18.81 mg/dL at the end of the study (Figure 3 and Table 2).

Triglyceride values were 81.10 ± 52.28 mg/dL before start of the study and 82.65 ± 47.46 mg/dL at the end of the study (Figure 3 and Table 2).

As stated above, the findings in all the test items concerning the test values associated with lipid metabolism except triglyceride values in male subjects were within the normal ranges irrespective of males or females.

3.4 Effects of PreB intake on renal function

In male subjects, serum creatinine (CRA) levels were 0.84 ± 0.08 mg/dL before starting the trial test and 0.81 ± 0.09 mg/dL at completion of the trial test (Figure 4 and Table 2).

The haemoglobin A1c (HbA1c) levels were 5.21 ± 0.32 mg/dL before starting the trial test and 5.23 ± 0.27 mg/dL at completion of the trial test (Figure 4 and Table 2).

In female subjects, levels of serum creatinine level were 0.64 ± 0.10 mg/dL before starting the trial test and 0.65 ± 0.09 mg/dL at completion of the trial test (Figure 4 and Table 2).

The haemoglobin A1c (HbA1c) levels were 5.07 ± 0.29 mg/dL before starting the trial test and 5.10 ± 0.28 mg/dL at completion of the trial test (Figure 4 and Table 2).

As described above, levels associated with renal function are within the normal range in all test items regardless of sex.

3.5 Effects of PreB intake on the immune system

The leukocyte fraction was prepared from the blood, and the lymphocyte fraction was analyzed following multistaining by CD2, CD20, CD4 and CD8 antibodies. The forward-scattering light and the side-scattering light were applied to select polymorphonuclear leukocytes in the lymphocyte fraction. As shown in the Figure 5, Figure 6 and Table 3, no difference was found in the absolute count of T cells, B cells, CD4 positive T cells and CD8 positive T cells between the male subjects and the female subjects, and between at the time of starting and completion of the trial test.

No difference was found in TNF-alpha and IFN-gamma, which were the indicators of cell-mediated immunodominance and IL-10, which were the indicators of humoral immunodominance between the male and female subjects between the time of the start of the trial test and the completion of the trial test (Figure 6 and Table 3).

3.6 Evaluation with Visual Analogue Scale (VAS)

Utilizing the visual analogue scale (VAS), constipation, rough skin and stiff shoulders were measured to evaluate effects of ingesting PreB on the body. It was found that the number of instances of constipation, rough skin and stiff shoulders were markedly improved at the completion of the trial test in all subjects compared with the number of instances recorded before the start of the trial test.

3.7 Changes in the enteral environment by PreB intake

Changes in the intestinal bacterial flora by PreB intake were evaluated by a simultaneous molecular analysis. The analyzing method was invented by the Department of Microbiology, School of Medicine, University of Occupational

and Environmental Health, and was the application of the fingerprint method using bacteria-derived DNA in the stool. Bacteria in the stool of the 30 subjects were identified from the 2667 clone before starting the trial test and from the 2525 clone after completion of the trial test.

Major components of the intestinal bacterial flora before starting the trial test were the *Clostridium* species, *Ruminococcus* species, *Faecalibacterium* species and *Prevotella* species (Table 4). Other, components of the intestinal bacterial flora at completion of the trial test were *Bacteroides* species, *Streptococcus* species, *Faecalibacterium* species and *Prevotella* species (Table 4).

Discussion

Lipid peroxide is one of the oxidized substances which are by-products of cellular metabolism as well as active oxygen, free radicals or superoxides etc. in vivo. The oxidized substances cause oxidation of lipids, and also arteriosclerosis. The oxidized substances are produced by stress from modern life and excessive consumption of calorie-rich food etc. These are separate from the oxidized substances produced by normal immune response and aging. Injuries in normal cells caused by the oxidized substances are considered to increase the acceleration of aging. In addition, the excessive oxidized substances that are produced cause arteriosclerosis because of abnormal metabolism of the oxidized substances, oxidation and cell injuries in cell membranes and nuclear membranes, and have risks of inducing various diseases.

A function of „functional foods“ reduces these excessively produced oxidized substances and has been extensively used as an adjunct to improve daily life. PreB used in this trial test is a health supplement, which contains over 55 kinds of cereals, vegetables, fruits and wild herbs etc. The product contains vegetable origin lactic acid bacteria and lutein, which have an antioxidative effect.

The trial test was conducted to confirm efficacy and safety of PreB in healthy volunteers.

PreB was analyzed for its effects on the body. Results showed that levels of ALT and ALP were within the normal range (the normal range of ALT level: 5 -45 IU/ml and the normal range of ALP level: 100 -325 IU/mL) in both male subjects and in female subjects according to a liver function test when subjects continuously ingested PreB for 1 month. The mean levels of AST were higher in the male subjects than in the female subjects (the normal range of AST level was 10 -40 IU/L), which was a deviation occurred in a male subject who was found to have liver function abnormality. The liver function abnormality was not attributed to the trial test substance but was affected by the subject's diet.

In lipid metabolism, both levels of high-density lipoprotein cholesterol and low-density lipoprotein cholesterol were within the normal range (the normal range of high density lipoprotein cholesterol level: 45 -95 mg/dL, the normal range of low-density lipoprotein-cholesterol level: 65 -139 mg/dL) regardless of sex. Values of triglyceride in the male subjects were higher than the normal upper limit (the normal upper limit of triglyceride: 30 -149 mg/dL). It was confirmed that the high value of triglyceride in the male subjects was caused by the high value of the same male subject whose AST value was the deviation. It was not affected by the trial test substance. Then, for lipids metabolism, creatinine clearance and HbA1c levels which were used as indicators were analyzed for effects on renal function. The values were within the normal range (the normal range of creatinine level: 0.61 -1.04 mg/dL in the male subjects and 0.47 -0.79 mg/dL in the female subjects; HbA1C: 4.0 -5.5 mg/dL) regardless of sex. According to the above results, it was considered that PreB had no safety problem.

PreB had no effects on the immune system such as white blood cell counts, lymphocyte counts, T cell counts and B cell counts. In addition, there was no change in all subjects in IL-10 which was the indicator of humoral immunodominance before and after the trial test. No difference was found in the mean levels of TNF-alpha and IFN-gamma which were the indicators of cell-mediated immunity. However, a tendency was noted that they were higher at the

completion of the trial test compared with the values before the trial test in more than half subjects (attached Figure 2 and Figure 3). For this reason, it was inferred that activation of macrophages and neutrophils caused by the changes in the intestinal bacterial flora might be involved in the high value.

No change was found in the intestinal bacterial flora, including *Faecalibacterium* species and *Prevotella* species, which were the major components before the trial test and at completion of the trial test. However, *Clostridium* and *Ruminococcus*, which were dominant before the trial test were decreased at the completion of the trial test (from 4.9% to 2.8% and from 8.5% to 4.4%, respectively). The extent of decrease was approximately 50%, and types of bacteria were also reduced to half or changed (Table 4). *Bacteroides* species and *Streptococcus* species were increased at completion of the trial test. These changes were considered to be caused by effects of PreB. Also, these results might be related to aforementioned increase of TNF-alpha and IFN-gamma levels, which meant the activation of macrophages and neutrophils. In addition, it was inferred that the changes in the enteral environment might be involved in improvement of constipation and relief of rough skin according to the VAS evaluation.

Since the healthy volunteers in this trial test lived their normal lives, dramatic changes were not noted in immunocytes and the enteral environment. However, the usefulness of PreB seems to have been revealed by conducting a test on small-sized low-density lipoprotein and a challenge test.

Conclusion

- The safety of PreB was confirmed by the trial test of PreB intake (for 28 days) in healthy volunteers.
- No effects of the PreB ingestion were found in the immunocytes (lymphocytes).
- Changes were found in the intestinal bacterial flora, which were caused by the ingestion of PreB.

Figure 1: Hematologic Data

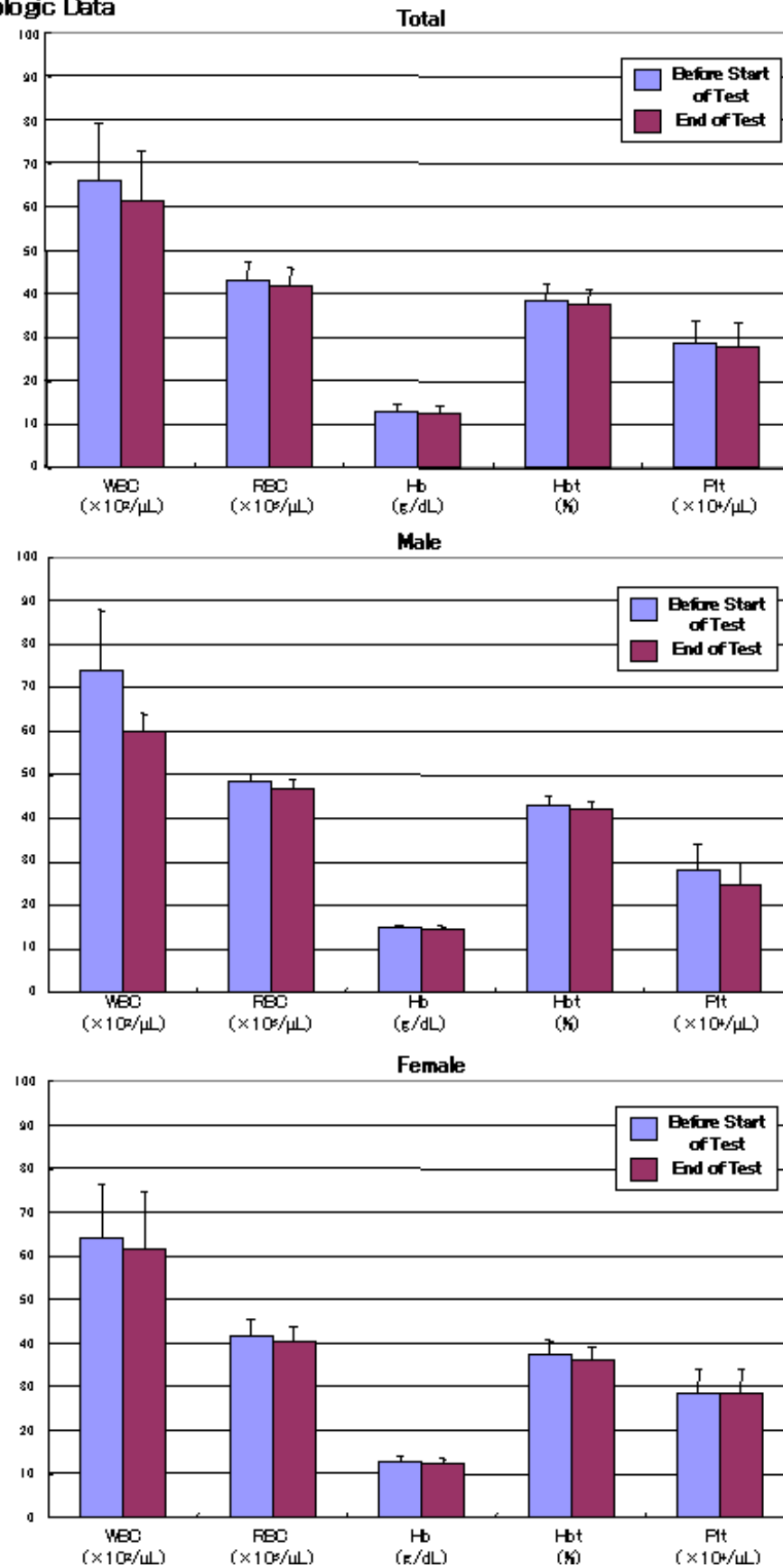


Figure 2: Effects on Hepatic Function

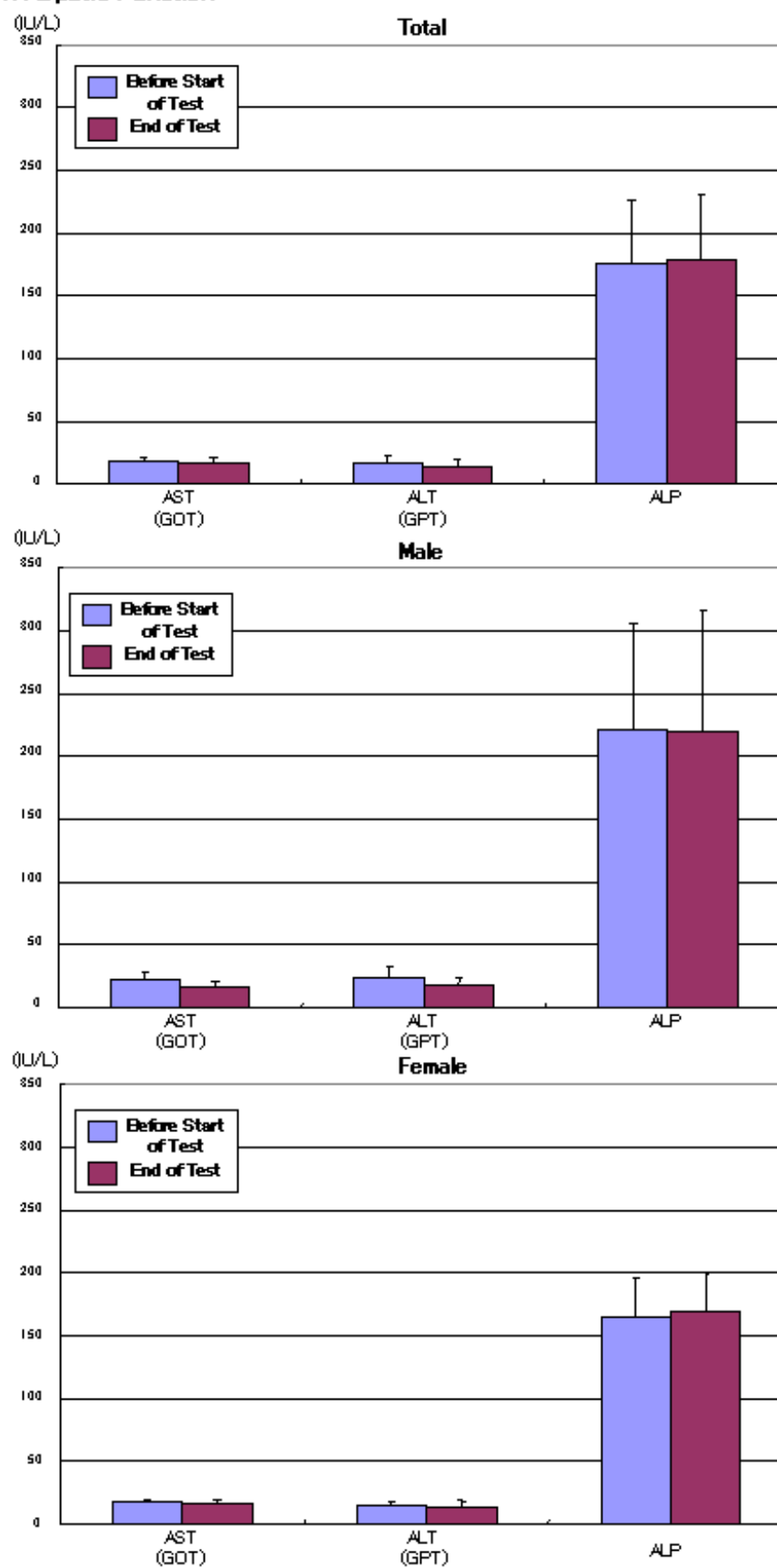


Figure 3: Effects on Lipid Metabolism

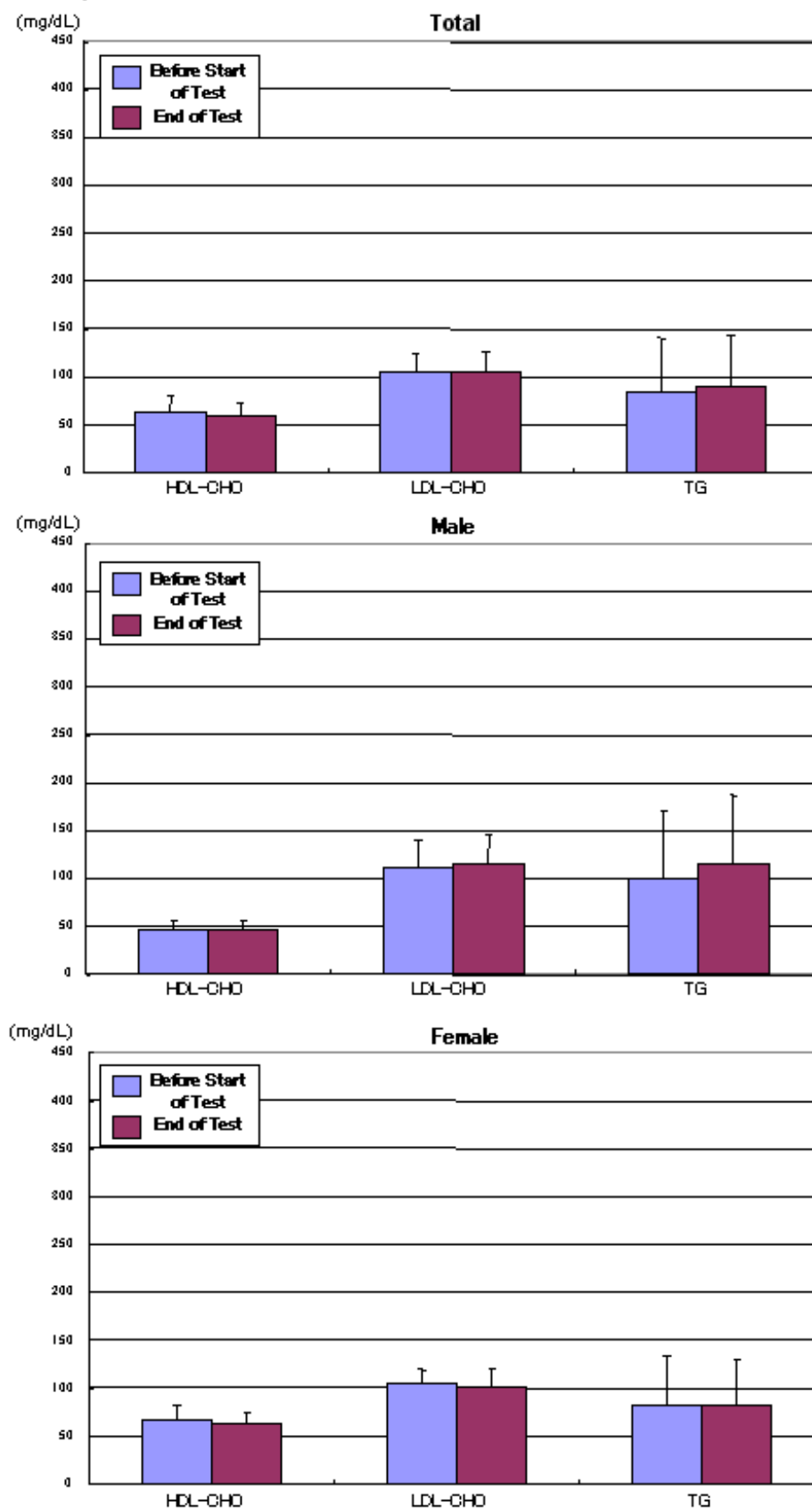


Figure 4: Effects on Renal Function

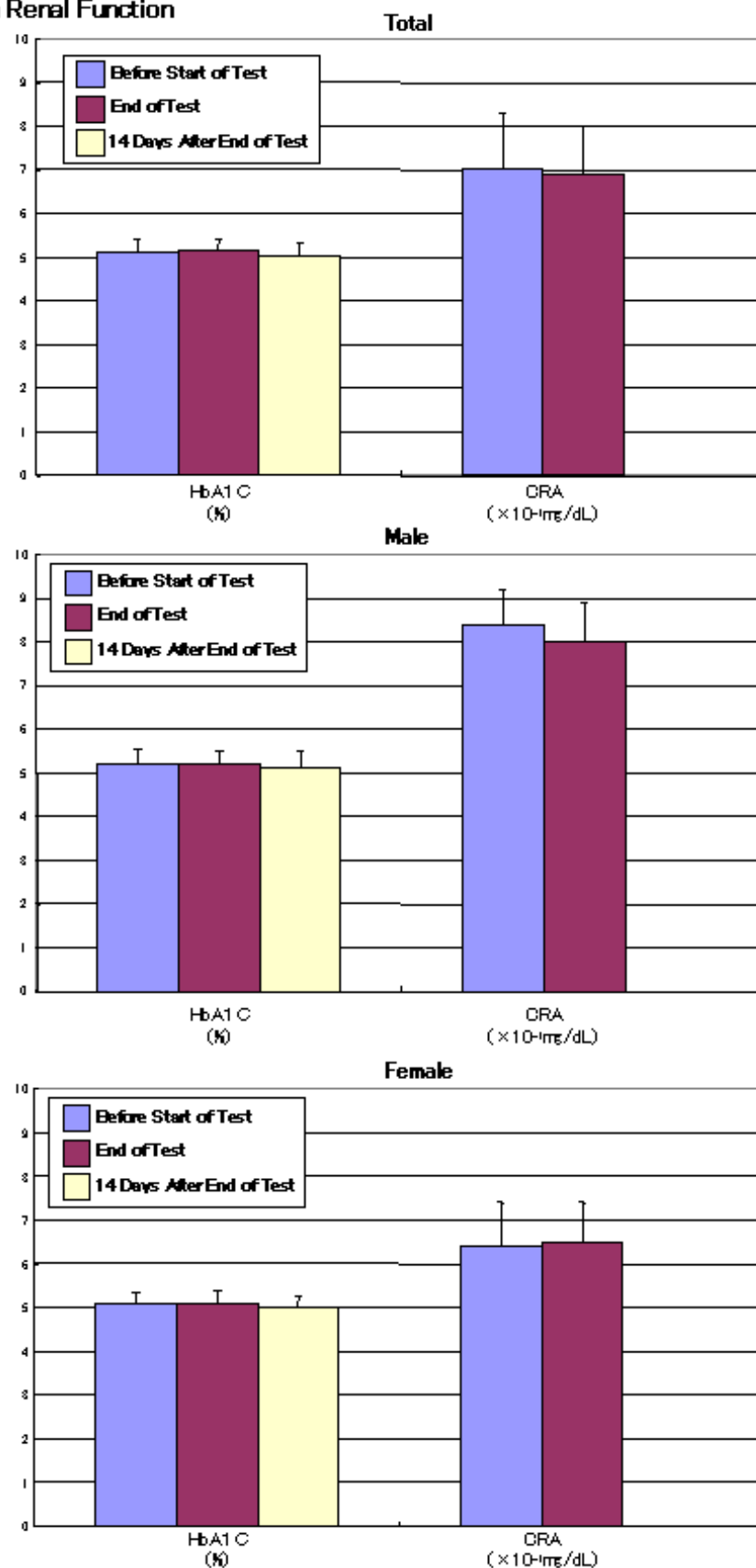


Figure 5: Lymphocyte Kinetics

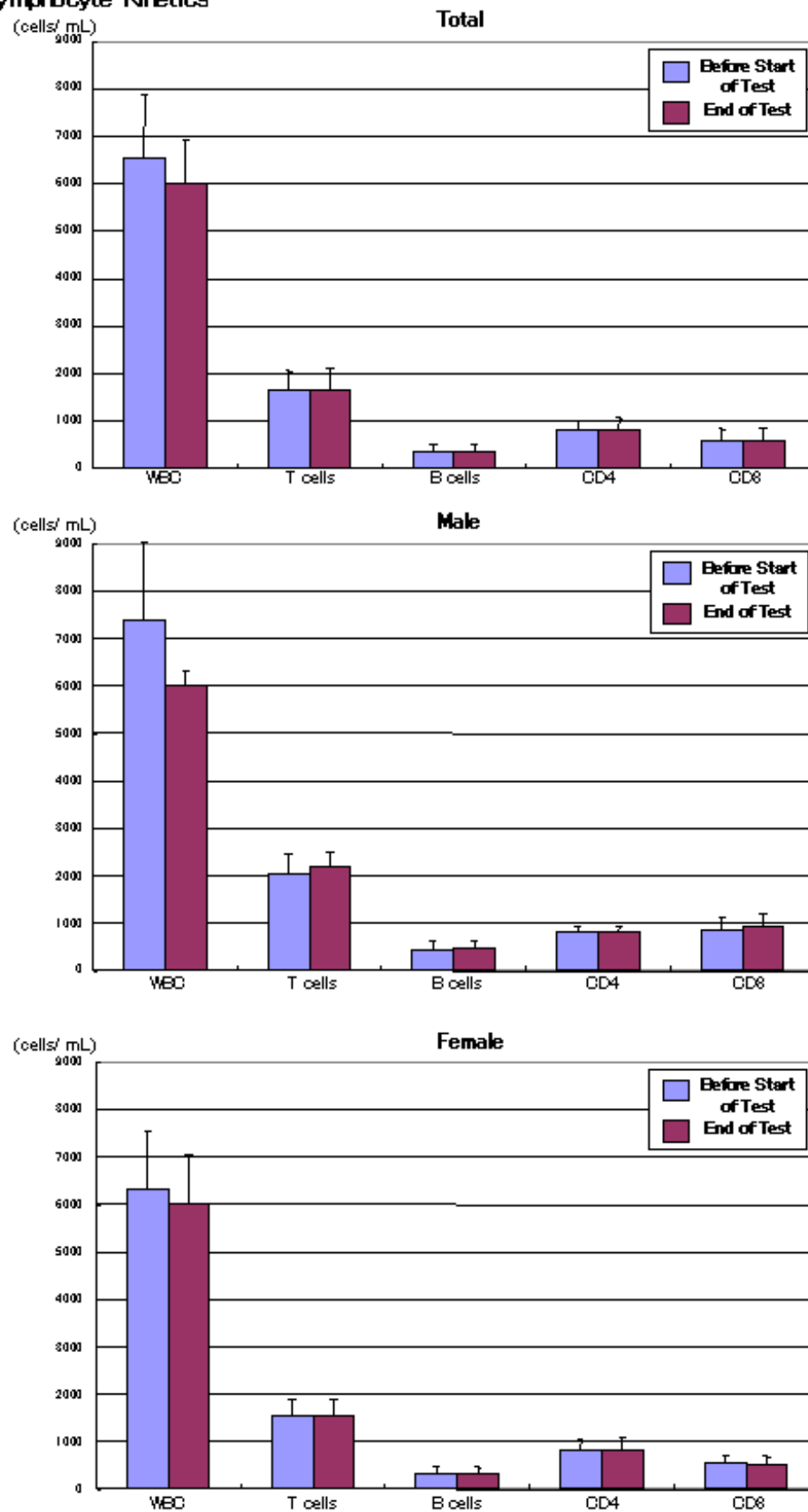


Figure 6: Effects on T-cell Function

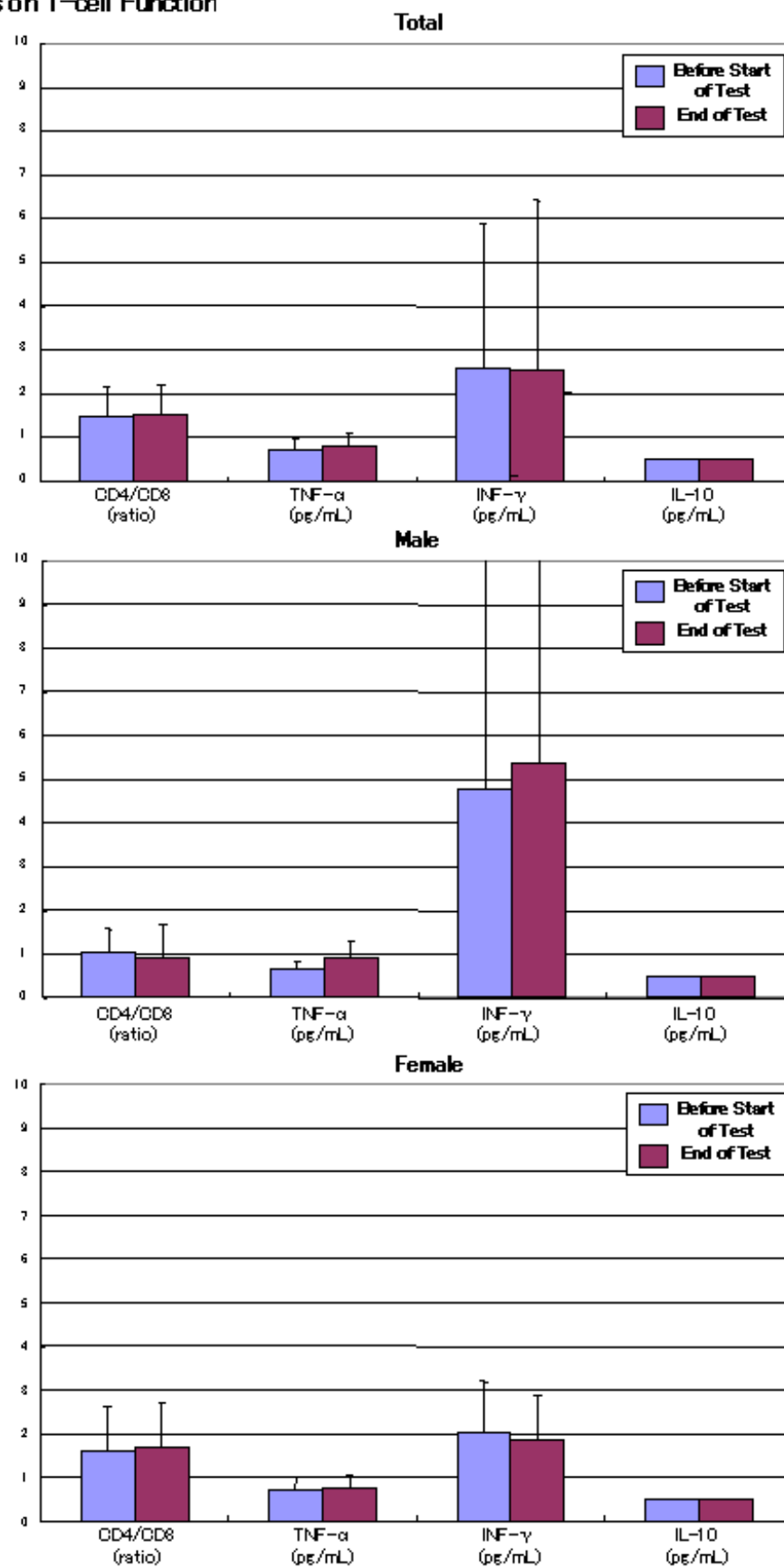


Figure 7: VAS Evaluation

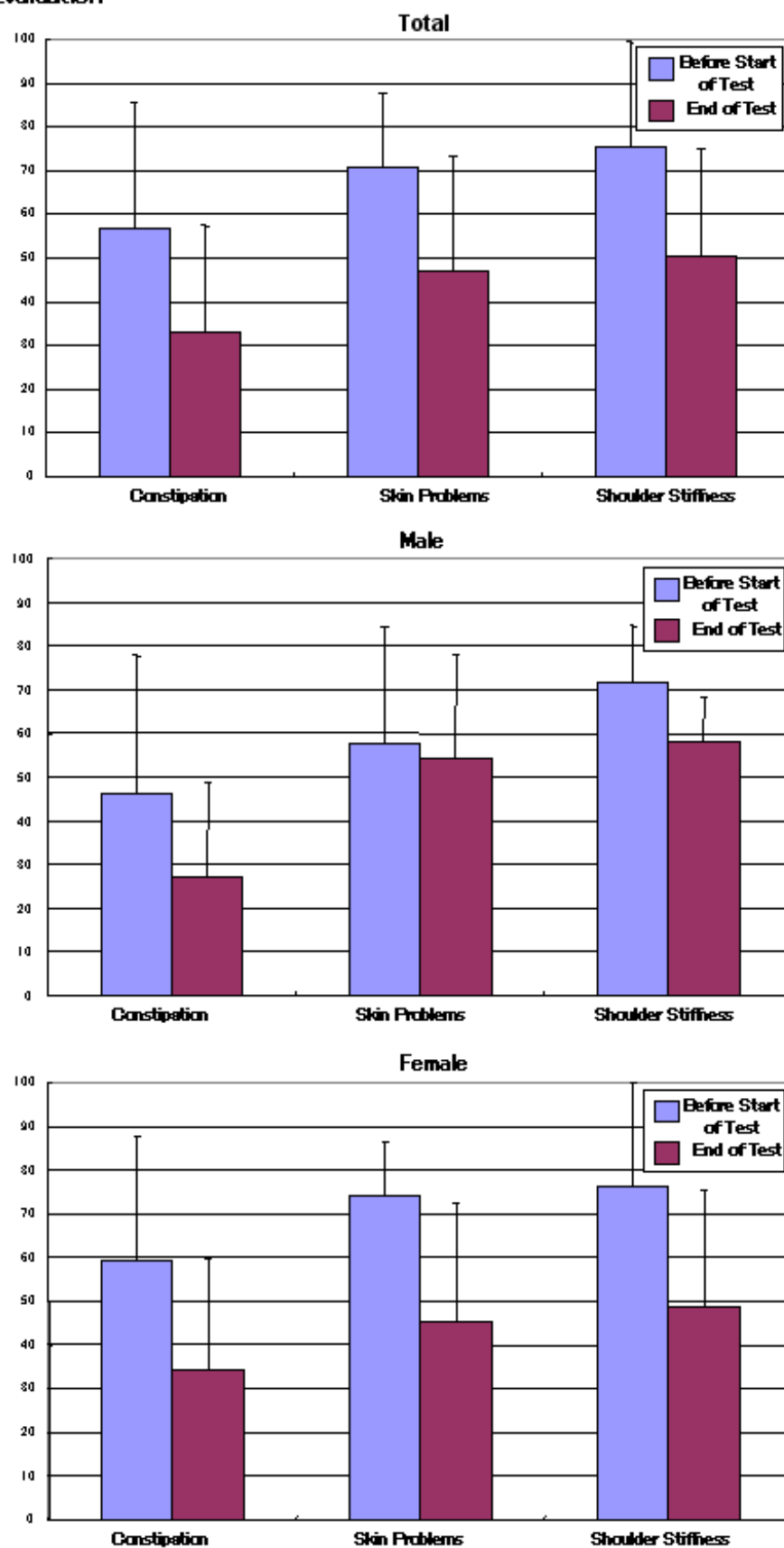


Table 1: Effects on hematology

A (Before start of test)	WBC ($\times 10^3/\mu\text{L}$)		RBC ($\times 10^5/\mu\text{L}$)		Hb (g/dL)		Hct (%)		Plt ($\times 10^4/\mu\text{L}$)	
	Average	$\pm$ SD	Average	$\pm$ SD	Average	$\pm$ SD	Average	$\pm$ SD	Average	$\pm$ SD
Total	66.00	$\pm$ 13.26	44.21	$\pm$ 4.78	13.43	$\pm$ 1.75	39.43	$\pm$ 4.52	27.99	$\pm$ 5.08
Male	69.80	$\pm$ 14.63	49.09	$\pm$ 2.66	15.20	$\pm$ 0.88	44.05	$\pm$ 2.38	26.87	$\pm$ 4.46
Female	64.10	$\pm$ 12.47	41.77	$\pm$ 3.56	12.54	$\pm$ 1.36	37.12	$\pm$ 3.41	28.55	$\pm$ 5.38

B (End of test)	WBC ($\times 10^3/\mu\text{L}$)		RBC ($\times 10^5/\mu\text{L}$)		Hb (g/dL)		Hct (%)		Plt ($\times 10^4/\mu\text{L}$)	
	Average	$\pm$ SD	Average	$\pm$ SD	Average	$\pm$ SD	Average	$\pm$ SD	Average	$\pm$ SD
Total	62.27	$\pm$ 11.57	42.84	$\pm$ 4.41	13.08	$\pm$ 1.60	38.38	$\pm$ 4.10	27.40	$\pm$ 5.13
Male	63.50	$\pm$ 8.75	47.52	$\pm$ 1.99	14.77	$\pm$ 0.78	42.90	$\pm$ 1.89	26.29	$\pm$ 3.52
Female	61.65	$\pm$ 12.92	40.50	$\pm$ 3.25	12.24	$\pm$ 1.16	36.13	$\pm$ 2.82	28.46	$\pm$ 5.55

Table 2: Effects on hepatic function, lipid metabolism, and renal function

A (Before start of test)	AST (GOT) (U/L)		ALT (GPT) (U/L)		ALP (U/L)		HDL-CHO (mg/dL)		LDL-CHO (mg/dL)		TG (mg/dL)		CRA (mg/dL)		HbA1C(mg/dL)	
	Average	± SD	Average	± SD	Average	± SD	Average	± SD	Average	± SD	Average	± SD	Average	± SD	Average	± SD
Total	20.03	± 6.28	21.23	± 15.59	184.17	± 52.54	60.93	± 15.12	109.77	± 24.74	119.47	± 141.85	0.70	± 0.13	5.11	± 0.30
Male	25.80	± 7.52	35.20	± 20.86	224.00	± 64.15	48.00	± 6.31	121.50	± 35.20	196.20	± 221.93	0.84	± 0.08	5.21	± 0.32
Female	17.15	± 2.68	14.25	± 3.29	164.25	± 31.81	67.40	± 14.08	103.90	± 15.44	81.10	± 52.28	0.64	± 0.10	5.07	± 0.29

B (End of test)	AST (GOT) (U/L)		ALT (GPT) (U/L)		ALP (U/L)		HDL-CHO (mg/dL)		LDL-CHO (mg/dL)		TG (mg/dL)		CRA (mg/dL)		HbA1C(mg/dL)	
	Average	± SD	Average	± SD	Average	± SD	Average	± SD	Average	± SD	Average	± SD	Average	± SD	Average	± SD
Total	19.80	± 7.03	19.73	± 12.95	186.60	± 55.51	58.27	± 12.38	108.80	± 24.70	112.17	± 106.10	0.70	± 0.12	5.14	± 0.28
Male	25.30	± 9.65	31.60	± 16.08	222.60	± 75.78	48.80	± 8.18	123.00	± 29.71	171.20	± 160.34	0.81	± 0.09	5.23	± 0.27
Female	17.05	± 2.74	13.80	± 4.71	168.60	± 30.99	63.00	± 11.47	101.70	± 18.81	82.65	± 47.46	0.65	± 0.09	5.10	± 0.28

Table 3: Effects on immune function

A (Before start of test)	WBC (cells/mL)		T cells (cells/mL)		B cells (cells/mL)		CD4 (cells/mL)		CD8 (cells/mL)		CD4/CD8 (ratio)		TNF- α (pg/mL)		IFN- γ (pg/mL)		IL-10 (pg/mL)	
	Average $\pm$ SD	Average $\pm$ SD	Average $\pm$ SD	Average $\pm$ SD	Average $\pm$ SD	Average $\pm$ SD	Average $\pm$ SD	Average $\pm$ SD	Average $\pm$ SD	Average $\pm$ SD	Average $\pm$ SD	Average $\pm$ SD	Average $\pm$ SD	Average $\pm$ SD	Average $\pm$ SD	Average $\pm$ SD	Average $\pm$ SD	
Total	6486.67 $\pm$ 1318.76	1669.20 $\pm$ 387.11	349.63 $\pm$ 140.73	817.53 $\pm$ 192.37	623.70 $\pm$ 235.03	1.42 $\pm$ 0.61	0.74 $\pm$ 0.30	2.40 $\pm$ 3.05	0.50 $\pm$ 0.00									
Male	6850.00 $\pm$ 1475.92	1882.00 $\pm$ 414.14	388.90 $\pm$ 155.21	813.10 $\pm$ 144.61	795.60 $\pm$ 251.68	1.06 $\pm$ 0.37	0.79 $\pm$ 0.36	3.17 $\pm$ 5.10	0.50 $\pm$ 0.00									
Female	6305.00 $\pm$ 1232.23	1662.80 $\pm$ 334.27	330.00 $\pm$ 146.93	819.75 $\pm$ 215.78	637.75 $\pm$ 176.07	1.61 $\pm$ 0.64	0.72 $\pm$ 0.28	2.01 $\pm$ 1.18	0.50 $\pm$ 0.00									

B (End of test)	WBC (cells/mL)		T cells (cells/mL)		B cells (cells/mL)		CD4 (cells/mL)		CD8 (cells/mL)		CD4/CD8 (ratio)		TNF- α (pg/mL)		IFN- γ (pg/mL)		IL-10 (pg/mL)	
	Average $\pm$ SD	Average $\pm$ SD	Average $\pm$ SD	Average $\pm$ SD	Average $\pm$ SD	Average $\pm$ SD	Average $\pm$ SD	Average $\pm$ SD	Average $\pm$ SD	Average $\pm$ SD	Average $\pm$ SD	Average $\pm$ SD	Average $\pm$ SD	Average $\pm$ SD	Average $\pm$ SD	Average $\pm$ SD	Average $\pm$ SD	
Total	6093.33 $\pm$ 943.19	1690.80 $\pm$ 432.44	368.50 $\pm$ 140.52	844.57 $\pm$ 242.82	637.90 $\pm$ 255.64	1.44 $\pm$ 0.64	0.79 $\pm$ 0.29	2.38 $\pm$ 3.54	0.50 $\pm$ 0.00									
Male	6260.00 $\pm$ 757.48	1996.80 $\pm$ 408.47	413.60 $\pm$ 147.80	866.20 $\pm$ 214.79	879.10 $\pm$ 217.09	0.99 $\pm$ 0.34	0.87 $\pm$ 0.31	3.46 $\pm$ 6.02	0.50 $\pm$ 0.00									
Female	6010.00 $\pm$ 1031.55	1637.80 $\pm$ 363.98	330.95 $\pm$ 131.89	833.75 $\pm$ 260.33	617.30 $\pm$ 177.47	1.67 $\pm$ 0.63	0.76 $\pm$ 0.28	1.84 $\pm$ 1.03	0.50 $\pm$ 0.00									

Table 4: Alteration of intestinal flora

Before start of test				End of test			
Clostridium	halnewyi	8	0.3%	Clostridium	raiosum	30	1.2%
	litusebureuse	12	0.4%		spiriforme	28	1.1%
	botleae	66	2.5%		nexile	12	0.5%
	spiriforme	31	1.2%				
	orbiscindense	13	0.5%				
		130	4.9%			70	2.8%
Bacteroides	ovatus	7	0.3%	Bacteroides	fragilis	23	0.9%
	vulgatus	51	1.9%		vulgatus	56	2.2%
	stercoris	78	2.9%		stercoris	87	3.4%
					caecae	23	0.9%
		136	5.1%			189	7.5%
Streptococcus	macdonics	23	0.9%	Streptococcus	salivarius	21	0.8%
					lutetensis	52	2.1%
						73	2.9%
Ruminococcus	obeum	144	5.4%	Ruminococcus	obeum	81	3.2%
	schinkii	11	0.4%		forques	9	0.4%
	gnavus	9	0.3%		gnavus	22	0.9%
	forques	32	1.2%				
	lactaris	9	0.3%				
	hydrogenotrophicus	11	0.4%				
	luti	10	0.4%				
		226	8.5%			112	4.4%
Eubacterium	rectale	34	1.3%	Eubacterium	rectale	25	1.0%
	biforme	25	0.9%		biforme	16	0.6%
		59	2.2%			41	1.6%
Faecalibacterium	prausnitzii	176	6.6%	Faecalibacterium	prausnitzii	150	5.9%
Prevotella	oulorum	170	6.4%	Prevotella	oulorum	207	8.2%
Dialister	invisus	15	0.6%				
Anaerostipes	caecae	10	0.4%	Anaerostipes	caecae	25	1.0%
				Turicibacter	sanguinis	17	0.7%
				Megamonas	hypermegale	10	0.4%
total clone		2667		total clone		2525	

Chart 1

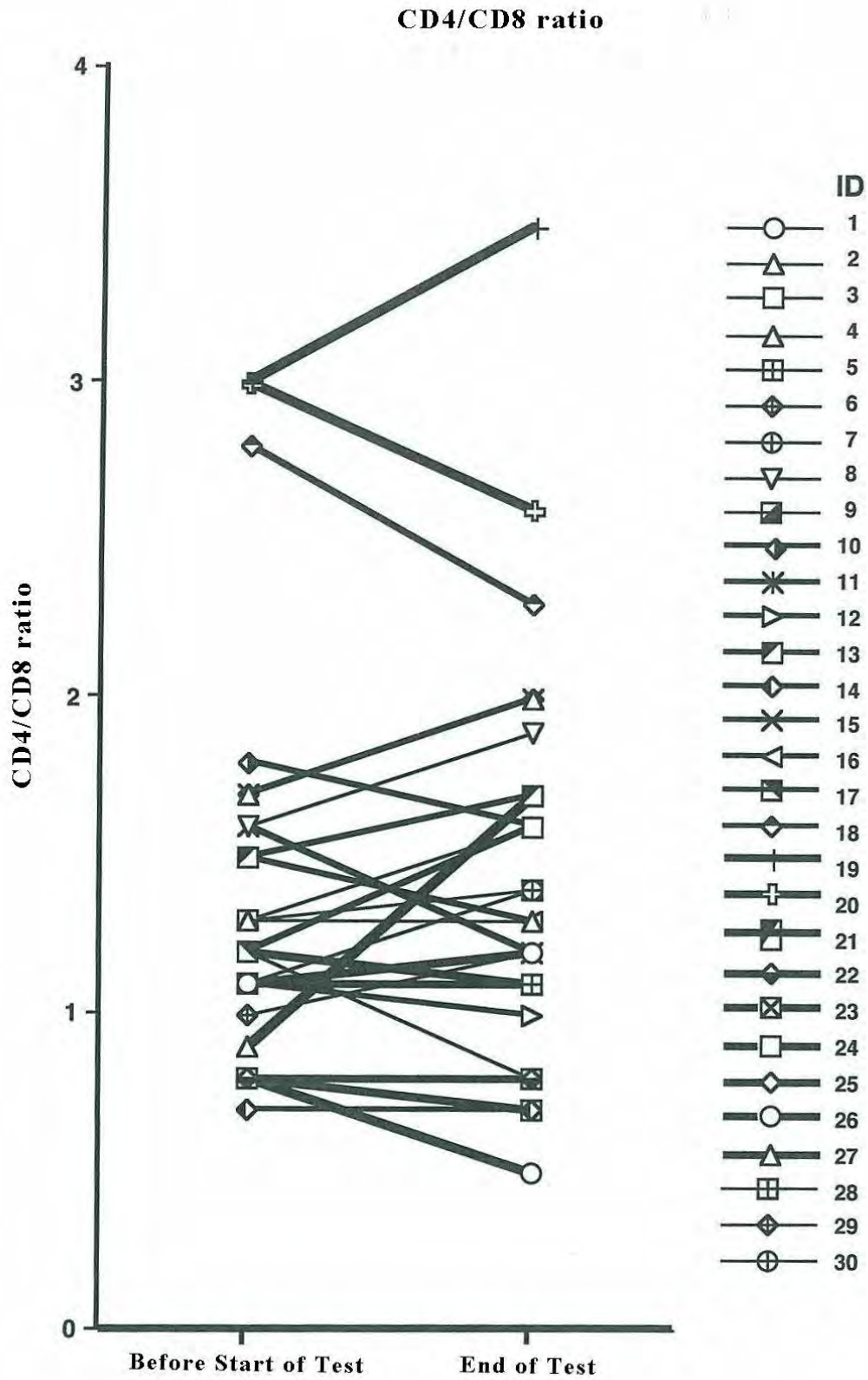


Chart 2

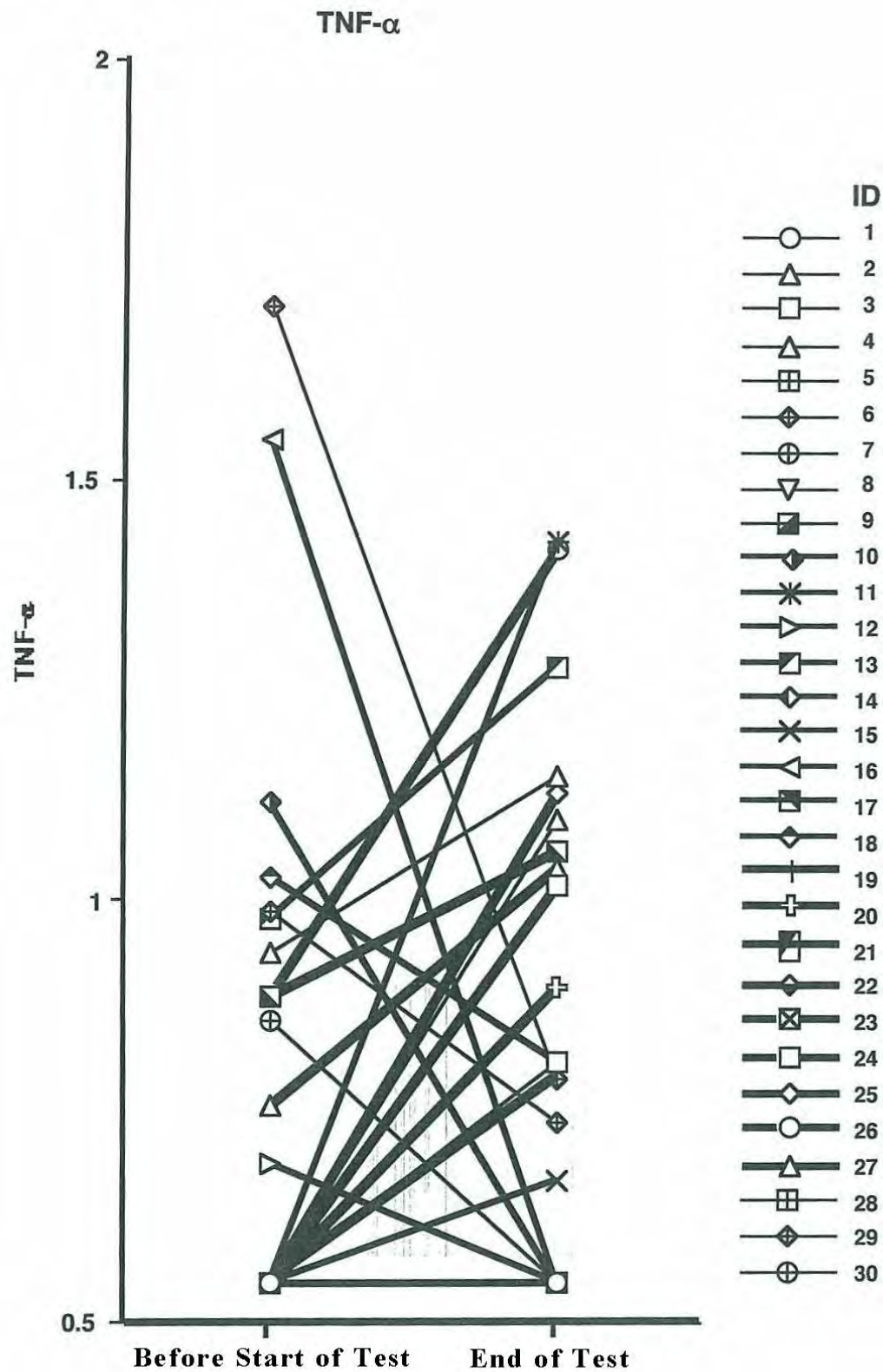


Chart 3

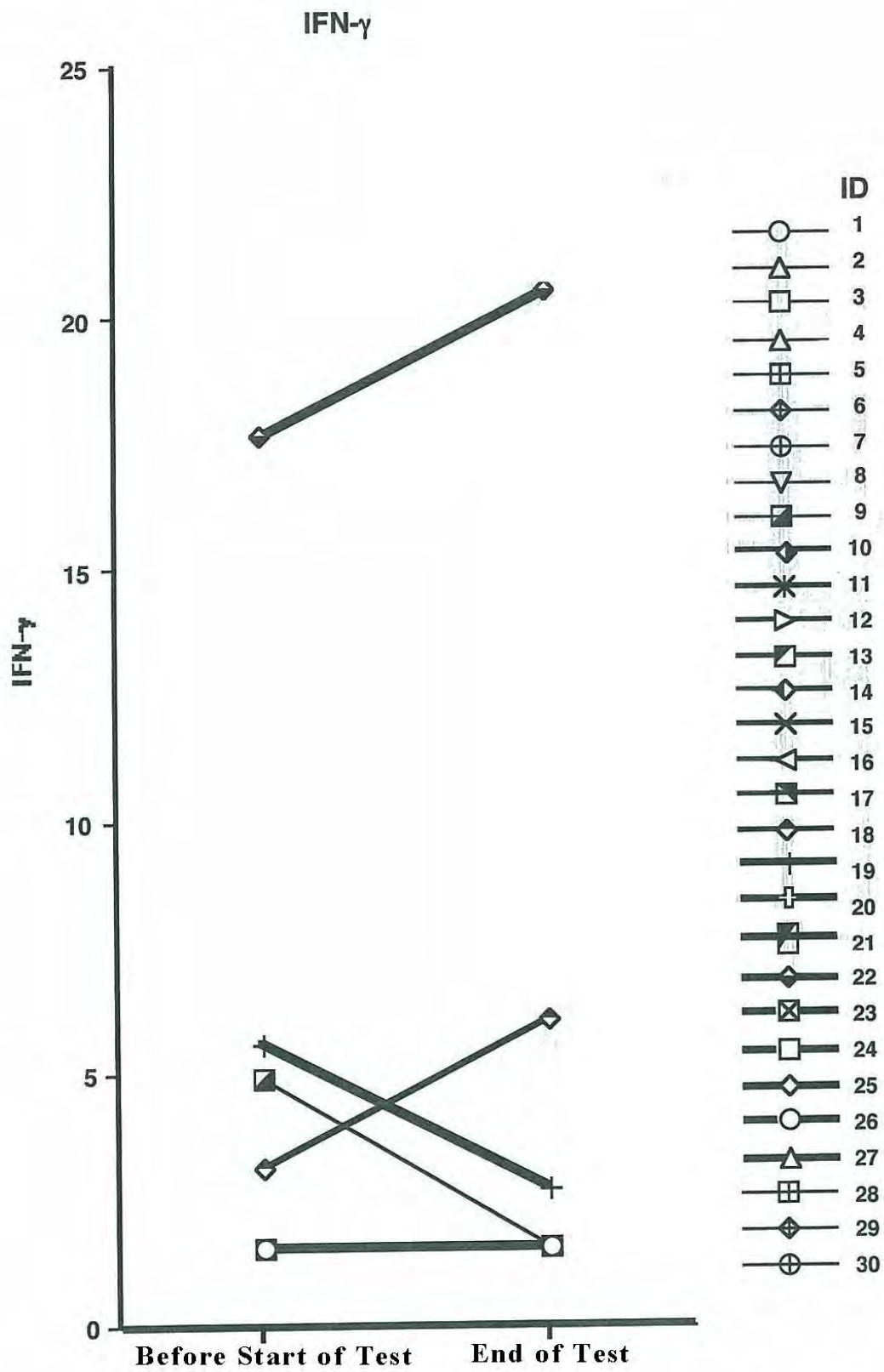
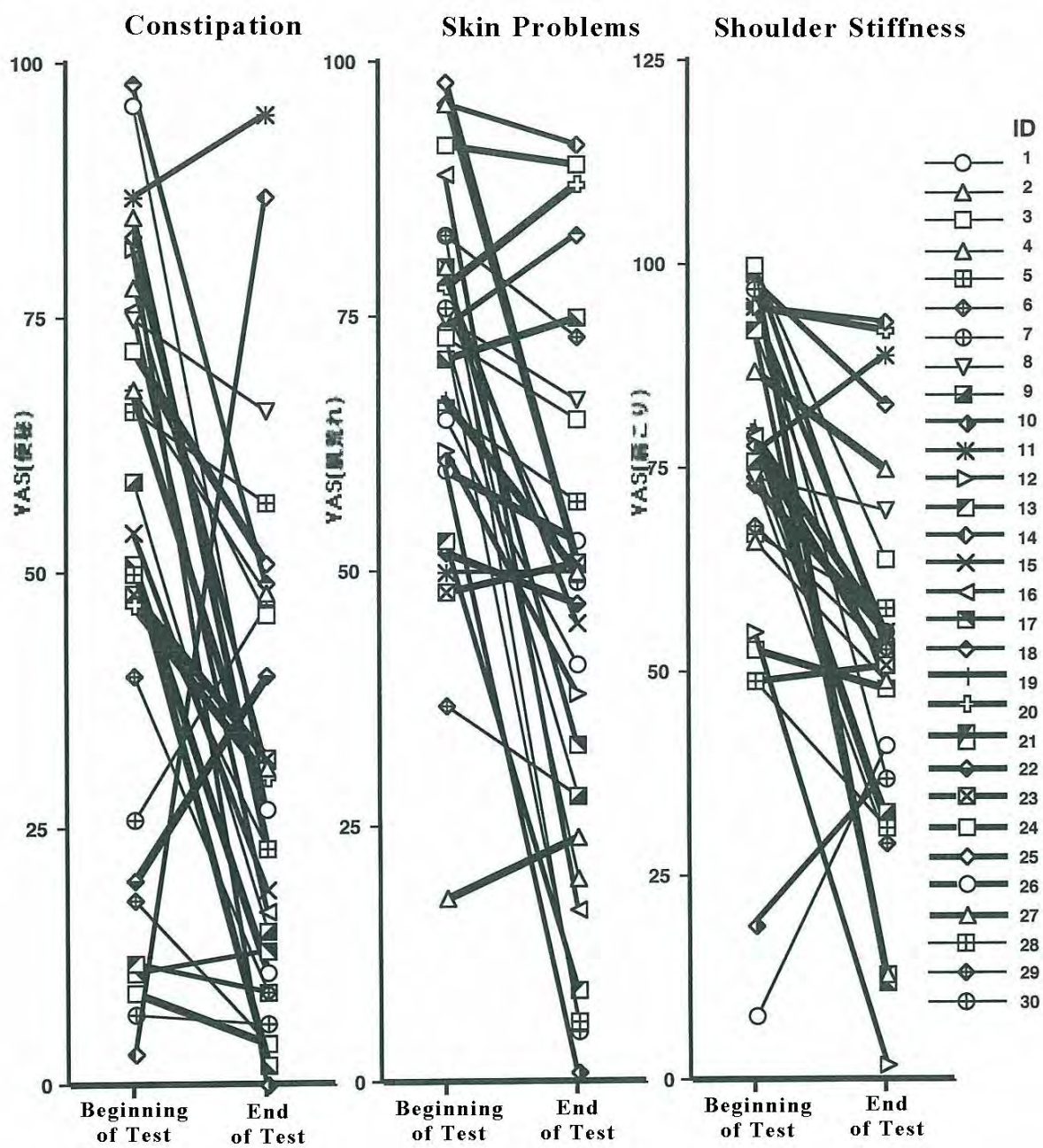


Chart 4



Intestinal bacterial flora count and destruction rate before oral administration of preB®

Sample #	Weight (g)	Color	Hardness	Quantity of food residue	Flora count before test (colonies/g)	Flora count after test	Destruction rate (%)
1	0.100	Brown	Hard	Small	1.6×10^{10}	5.4×10^{10}	71.4
2	0.100	Ocher	Soft	Small	6.8×10^{10}	9.4×10^9	86.1
3	0.100	Ocher	Soft	Small	1.6×10^{10}	2.2×10^6	98.6
4	0.100	Dark brown	Hard	Small	5.2×10^{10}	7.1×10^9	86.5
5	0.100	Ocher	Soft (partly sludged)	Small	4.5×10^{10}	5.6×10^9	87.6
6	0.100	Brown	Soft	Small	5.6×10^{10}	4.8×10^9	91.5
7	0.100	Brown	Average	Small	5.2×10^{10}	2.4×10^9	95.4
8	0.100	Brown	Soft (partly sludged)	Small	6.9×10^{10}	7.6×10^9	88.9
9	0.100	Brown	Soft	Small	4.3×10^{10}	2.1×10^9	95.1
10	0.100	Brown	Soft	Small	3.5×10^{10}	4.0×10^9	88.6
11	0.101	Brown	Hard	Small	6.7×10^{10}	7.4×10^9	88.8
12	0.099	Brown	Soft	Small	1.0×10^{11}	8.7×10^9	91.3
13	0.100	Brown	Soft	Small	4.9×10^{10}	2.8×10^9	94.3
14	0.100	Ocher	Very soft	Average	8.9×10^{10}	1.3×10^9	85.4
15	0.097	Dark brown	Hard	Small	8.1×10^{10}	1.1×10^{10}	86.4
16	0.097	Brown	Hard	Small	1.0×10^{11}	1.1×10^{10}	88.8
17	0.107	Brown	Very soft	Average	8.5×10^{10}	4.0×10^9	95.3
18	0.101	Brown	Soft	Small	4.5×10^{10}	6.0×10^9	86.7
19	0.099	Brown	Hard	Average	9.4×10^{10}	9.1×10^9	90.3
20	0.101	Brown	Soft	Small	2.8×10^{10}	5.0×10^9	81.7
21	0.035	Ocher	Soft (partly sludged)	Small	1.0×10^{10}	8.5×10^8	91.7
22	0.103	Brown	Soft	Average	3.1×10^{10}	6.0×10^6	98.1
23	0.102	Ocher	Hard	Small	3.1×10^{10}	7.4×10^7	99.2
24	0.098	Brown	Soft	Small	6.2×10^{10}	1.1×10^9	94.6
25	0.101	Ocher	Average	Small	7.7×10^{10}	7.4×10^7	99.7
26	0.091	Dark brown	Average	Small	7.7×10^{10}	1.5×10^9	94.2
27	0.098	Brown	Soft	Small	6.8×10^{10}	6.7×10^9	90.2
28	0.099	Ocher	Soft (partly sludged)	Small	6.2×10^9	2.5×10^7	98.8
29	0.098	Ocher	Sludged	Average	9.9×10^{10}	1.2×10^8	99.6
30	0.101	Brown	Soft	Small	7.1×10^{10}	3.5×10^8	98.5

Intestinal bacterial flora analysis before oral administration of preb

no. 1		no. 2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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no. 3																	
superkingdom	Num	phylum	Num	class	Num	order	Num	family	Num	genus	Num	species	Num	Blast	Max	Blast	Max
Bacteria	91	Proteobacteria	54	Alphaproteobacteria	1	Caubacteriales	1	Caubacteriaceae	1	Caubacter	1	Caubacter vibrioideus	1	99	100	99	0
		Firmicutes		Bacilli	8	Bacillales	1	Bacillaceae	1	Bacillus	1	Bacillus subtilis	1	100	100	99	0
						Lactobacillales	7	Streptococcaceae	2	Streptococcus	2	Streptococcus salivarius	2	100	100	99	0
								Lactobacillaceae	5	Lactobacillus	5	Lactobacillus mucosae	5	100	100	99	0
								Clostridiaceae	22	Clostridium	20	Clostridium flusurense	12	97	97	95	95
												Clostridium sporium	4	99	99	99	95
												Clostridium botcae	4	99	99	95	95
												Dorea longicatena	1	92	92	92	92
												Faecalibacterium prausnitzii	1	98	98	98	98
												Roseburia intestinalis	1	96	96	96	96
												Ruminococcus productus	10	98	98	98	98
												Ruminococcus gnavus	4	100	100	98	98
												Ruminococcus torques	1	96	96	96	96
												Ruminococcus obeum	2	96	96	96	96
												Ruminococcus hydrogenophilus	1	97	97	97	97
												Ruminococcus lut	1	98	98	98	98
												Eubacterium desulans	13	97	97	97	97
												Eubacterium hallii	2	98	98	98	98
												Eubacterium rectale	10	99	99	98	98
												25 Bacteroides vulgatus	13	98	98	98	98
												Bacteroides merdae	12	98	98	98	98
												Bacteroides stercoris	9	92	92	92	92
												Bacteroides caecae	1	91	91	91	91
												8 Collinsella aerofaciens	8	99	99	99	99
												1 Propionibacterium acris	1	96	96	96	96
												2 Bifidobacterium adolescentis	2	97	97	97	97
													91				
no. 4																	
superkingdom	Num	phylum	Num	class	Num	order	Num	family	Num	genus	Num	species	Num	Blast	Max	Blast	Max
Bacteria	91	Firmicutes	64	"Erysipelotrichi"	1	Erysipelotrichales	1	Erysipelotrichaceae	1	Erysipelotrichus	1	Clostridium ramosum	1	99	99	99	98
				Bacilli	3	Lactobacillales	3	Streptococcaceae	3	Streptococcus	14	Clostridium thermocellum	3	100	100	98	98
				Clostridia	60	Clostridiales	60	Clostridiaceae	60	Clostridium	23	Clostridium	14	94	94	94	94
												Clostridium cellulolyticum	1	90	90	90	90
												Clostridium xylohydrolyticum	3	95	95	95	95
												Clostridium orbicellulosum	1	92	92	92	92
												Clostridium saccharolyticum	1	93	93	93	93
												Clostridium lytemorae	1	94	94	94	94
												Clostridium halitwayi	1	95	95	95	95
												Clostridium botkiae	3	95	95	95	95
												9 Faecalibacterium prausnitzii	9	98	98	98	98
												1 Roseburia intestinalis	1	100	100	98	98
												23 Ruminococcus obscurus	17	99	99	98	98
												Ruminococcus hydrogenotrophicus	4	97	97	96	96
												Ruminococcus schickii	2	96	96	96	96
												1 Lachnospira prohodschiza	1	95	95	95	95
												3 Anaerostipes caecae	3	96	96	96	96
												9 Eubacterium desulans	1	97	97	97	97
												Eubacterium eligens	2	98	98	98	98
												Eubacterium hallii	2	98	98	98	98
												Eubacterium rectale	2	99	99	99	99
												Eubacterium ventriosum	1	99	99	99	99
												Eubacterium xylophilum	1	91	91	91	91
												20 Bacteroides fragilis	2	99	99	99	99
												Bacteroides vulgatus	11	98	98	98	98
												Bacteroides distans	1	97	97	97	97
												Bacteroides merdae	1	97	97	97	97
												Bacteroides caecae	4	96	96	96	96
												Bacteroides acidifaciens	4	98	98	98	98
												4 Megamonas hypermegale	4	96	96	96	96
												3 Collinsella aerofaciens	3	99	99	98	98
													91				
no. 3																	
superkingdom	Num	phylum	Num	class	Num	order	Num	family	Num	genus	Num	species	Num	Blast	Max	Blast	Max
Bacteria	91	Proteobacteria	54	Alphaproteobacteria	1	Caubacteriales	1	Caubacteriaceae	1	Caubacter	1	Caubacter vibrioideus	1	99	100	99	0
		Firmicutes		Bacilli	8	Bacillales	1	Bacillaceae	1	Bacillus	1	Bacillus subtilis	1	100	100	99	0
						Lactobacillales	7	Streptococcaceae	2	Streptococcus	2	Streptococcus salivarius	2	100	100	99	0
								Lactobacillaceae	5	Lactobacillus	5	Lactobacillus mucosae	5	100	100	99	0
								Clostridiaceae	22	Clostridium	20	Clostridium flusurense	12	97	97	95	95
												Clostridium sporium	4	99	99	99	95
												Clostridium botcae	4	99	99	95	95
												Dorea longicatena	1	92	92	92	92
												Faecalibacterium prausnitzii	1	98	98	98	98
												Roseburia intestinalis	1	96	96	96	96
												Ruminococcus productus	10	98	98	98	98
												Ruminococcus gnavus	4	100	100	98	98
												Ruminococcus torques	1	96	96	96	96
												Ruminococcus obeum	2	96	96	96	96
												Ruminococcus hydrogenophilus	1	97	97	97	97
												Ruminococcus lut	1	98	98	98	98
												Eubacterium desulans	13	97	97	97	97
												Eubacterium hallii	2	98	98	98	98
												Eubacterium rectale	10	99	99	98	98
												25 Bacteroides vulgatus	13	98	98	98	98
												Bacteroides merdae	12	98	98	98	98
												Bacteroides stercoris	9	92	92	92	92
												Bacteroides caecae	1	91	91	91	91
												8 Collinsella aerofaciens	8	99	99	99	99
												1 Propionibacterium acris	1	96	96	96	96
												2 Bifidobacterium adolescentis	2	97	97	97	97
													91				
no. 4																	
superkingdom	Num	phylum	Num	class	Num	order	Num	family	Num	genus	Num	species	Num	Blast	Max	Blast	Max
Bacteria	91	Firmicutes	64	"Erysipelotrichi"	1	Erysipelotrichales	1	Erysipelotrichaceae	1	Erysipelotrichus	1	Clostridium ramosum	1	99	99	99	98
				Bacilli	3	Lactobacillales	3	Streptococcaceae	3	Streptococcus	14	Clostridium thermocellum	3	100	100	98	98
				Clostridia	60	Clostridiales	60	Clostridiaceae	60	Clostridium	23	Clostridium	14	94	94	94	94
												Clostridium cellulolyticum	1	90	90	90	90
												Clostridium xylohydrolyticum	3	95	95	95	95
												Clostridium orbicellulosum	1	92	92	92	92
												Clostridium saccharolyticum	1	93	93	93	93
												Clostridium lytemorae	1	94	94	94	94
												Clostridium halitwayi	1	95	95	95	95
												Clostridium botkiae	3	95	95	95	95
												9 Faecalibacterium prausnitzii	9	98	98	98	98
												1 Roseburia intestinalis	1	100	100	98	98
												23 Ruminococcus obscurus	17	99	99	98	98
												Ruminococcus hydrogenotrophicus	4	97	97	96	96

No. 5		Num. orders		Num. families		Num. genera		Num. species		Num. Plant Macr. Data Macr.	
Lactobacillus		Num. orders		Num. families		Num. genera		Num. species		Num. Plant Macr. Data Macr.	
Bacteria		44		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
Bacteria		38		1		1		1		1	
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Bacteria		38		1							

no. 7		Num. class	Num. order	Num. family	Num. genus	Num. species	Num. Blast Max	Num. Blast Max
superkingdom	Num. phylum	83 "Erysipelotrichi"	5 Erysipelotrichales	5 Erysipelotrichaceae	5 Erysipelotrichaceae	5 Erysipelotrichaceae	5 Erysipelotrichaceae	5 Erysipelotrichaceae
Bacteria	89 Firmicutes	Bacilli	2 Lactobacillales	2 Streptococcaceae	1 Streptococcus	1 Eubacterium bifforme	1	99
		Clostridia	76 Clostridiales	76 Acidimicrobiaceae	1 Lactobacillus	1 Streptococcus salivarius	1	99
					2 Megaphysa	1 Mesophysa microformis	1	100
					2 Clostridium	1 Pseudoclostridium faecium	1	94
						28 Clostridium cellulosum	1	94
						Clostridium difficile	1	95
						Clostridium indolis	1	94
						Clostridium saccharolyticum	3	94
						Clostridium botulinum	18	93
						Dorea longicatena	6	99
						12 Dorea formicigenans	6	99
						7 Faecalibacterium prausnitzii	7	98
						21 Ruminoecoccus flavifaciens	1	89
						Ruminoecoccus productus	3	98
						Ruminoecoccus obeum	3	98
						Ruminoecoccus lactaris	6	99
						Ruminoecoccus luti	2	96
						4 Anaerostipes caecae	4	96
						2 Eubacterium hallii	2	98
						5 Bacteroides fragilis	2	100
						Bacteroides ovatus	1	98
						Bacteroides splanchnicus	1	97
						Bacteroides caecae	1	96
						1 Collinsella stercoris	1	90
89	Actinobacteria	1 Actinobacteria (class)	1 Coriobacteriales	1 Coriobacteriaceae	1 Collinsella	1 Collinsella stercoris	89	90
no. 8	num. phylum	num. class	num. order	num. family	num. genus	num. species	num. Blast Max	num. Blast Max
Bacteria	95 Proteobacteria	74 "Erysipelotrichi"	7 "Erysipelotrichales"	7 Erysipelotrichaceae	7 Erysipelotrichaceae	7 Erysipelotrichaceae	7 Erysipelotrichaceae	7 Erysipelotrichaceae
	Firmicutes	Bacilli	2 Bacillales	2 Turichbacteraceae	2 Turichbacter	2 Turichbacter sanguinis	2	99
		Clostridia	65 Clostridiales	65 Acidimicrobiaceae	Phascolarctobacterium	4 Acidimicrobius fermentans	2	99
					29 Clostridium	9 Clostridium fluseburense	2	94
						Clostridium orbicordis	1	97
						Clostridium saccharolyticum	1	95
						Clostridium botulinum	2	94
						Sporobacter	1	91
						Coprobacillus	1	91
						Dorea	1	90
						Faecalibacterium	1	99
						Roseburia	17	98
						Ruminoecoccus	3	96
						Ruminoecoccus	6	95
						Ruminoecoccus	10	95
						Ruminoecoccus	3	92
						Ruminoecoccus	2	98
						Anaerostipes	2	96
						17 Eubacterium	1	92
						Eubacterium	16	92
						Eubacterium	17	98
						Bacteroides	2	98
						Bacteroides	13	90
						Bacteroides	2	96
						Collinsella	2	99
						Collinsella	1	88
95	Actinobacteria	2 Actinobacteria (class)	2 Coriobacteriales	2 Coriobacteriaceae	2 Collinsella	2 Collinsella aerofaciens	95	88
	Unclassified bacteria	1 Unclassified bacteria	1 Unclassified bacteria	1 Unclassified bacteria	1 Unclassified bacteria	1 Unclassified bacteria	95	88

no. 15	superkingdom	Num	phylum	Num	class	Num	order	Num	family	Num	genus	Num	species	Num	Blast	Max%	Blast	Min%														
83	Proteobacteria	5	Gamma-proteobacteria	5	Enterobacteriales	5	Enterobacteriales	5	Enterobacteriaceae	5	Escherichia	5	Escherichia coli	5	100	99	98															
	Firmicutes	66	"Erysipelotrichi"	10	Erysipelotrichales	10	Erysipelotrichales	10	Erysipelotrichaceae	10	Erysipelotrichaceae	10	Streptococcus pneumoniae	10	100	100	99															
		Bacilli	4	Lactobacillales	4	Lactobacillales	4	Streptococcaceae	1	Streptococcus	1	Streptococcus	1	Clostridium sporiforme	1	99	99	99														
		Clostridia	52	Clostridiales	52	Clostridiales	52	Lactobacillaceae	3	Lactobacillus	3	Lactobacillus	3	Clostridium ramosum	3	98	98	90														
83	Unclassified bacteria	1	Unclassified bacteria	1	Unclassified bacteria	1	Unclassified bacteria	1	Unclassified bacteria	1	Unclassified bacteria	1	Unclassified bacteria	1	Unclassified bacteria	1	Unclassified bacteria	1														
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no.	29	superkingdom	Num. phylum	Num. class	Num. order	Num. family	Num. genus	Num. species	Num. Blast Max%	Blast Min%
87	Bacteria	Firmicutes	51 "Erysipelotrichi"	2 Erysipelotrichales	2 Erysipelotrichaceae	1 Phascolarctobacterium	2 Eubacterium bifforme	1	98	97
87	Actinobacteria	Actinobacteria (class)	1 Coriobacteriales	1 Coriobacteriales	1 Coriobacteriaceae	1 Collinsella	1 Collinsella aerofaciens	1	99	95
83	Bacteroidetes	Bacteroides (class)	34 Bacteroidales	34 Bacteroidales	34 Bacteroidaceae	11 Bacteroides	11 Bacteroides	1	98	95
83	Bacteroidetes	Bacteroides (class)	15 Bacteroidales	15 Bacteroidales	15 Bacteroidaceae	14 Bacteroides	14 Bacteroides	1	98	95
83	Actinobacteria	Actinobacteria (class)	2 Bifidobacteriales	2 Bifidobacteriales	2 Bifidobacteriaceae	1 Porphyromonas	1 Porphyromonas	1	98	95

Intestinal bacterial flora count and destruction rate after oral administration of preB®

	Weight	Color	Hardness	Quantity of food residue	Flora count before test	Flora count after test	Destruction rate (%)
1	0.100	Dark brown	Hard	Small	7.4×10^{10}	4.1×10^9	83.2
2	0.100	Brown	Average	Small	6.9×10^{10}	4.9×10^8	78.9
3	0.100	Greenish brown	Soft	Small	9.6×10^9	1.7×10^8	94.8
4	0.100	Brown	Average	Average	5.8×10^{10}	1.7×10^9	91.2
5	0.100	Brown	Soft	Average	6.9×10^{10}	2.6×10^9	88.8
6	0.100	Ocher	Soft	Small	7.4×10^{10}	3.0×10^9	87.7
7	0.100	Brown	Average	Average	4.8×10^{10}	1.9×10^9	88.5
8	0.100	Ocher	Soft (partly sludged)	Small	5.5×10^{10}	2.2×10^9	87.8
9	0.100	Brown	Average	Small	8.2×10^{10}	9.5×10^8	96.5
10	0.100	Brown	Soft	Average	6.5×10^{10}	2.4×10^9	88.8
11	0.101	Brown	Hard	Average	7.0×10^{10}	8.4×10^8	96.4
12	0.099	Brown	Soft	Large	4.3×10^{10}	1.8×10^8	98.7
13	0.100	Ocher	Soft	Average	4.3×10^{10}	2.7×10^8	98.2
14	0.100	Ocher	Soft	Average	1.1×10^{10}	1.2×10^8	96.8
15	0.097	Dark brown	Hard	Small	1.1×10^{11}	7.5×10^7	99.8
16	0.097	Brown	Hard	Small	7.4×10^{10}	1.3×10^9	94.9
17	0.107	Brown	Soft	Average	3.8×10^{10}	3.3×10^8	97.4
18	0.101	Ocher	Average	Small	5.2×10^{10}	5.7×10^8	96.7
19	0.099	Dark brown	Hard	Average	7.2×10^{10}	3.4×10^8	98.6
20	0.101	Brown	Soft	Average	5.4×10^{10}	5.6×10^8	96.9
21	0.035	Greenish brown	Soft	Small	3.1×10^{10}	9.0×10^7	99.1
22	0.103	Brown	Average	Average	4.5×10^{10}	1.3×10^9	91.5
23	0.102	Brown	Hard	Average	4.8×10^{10}	7.3×10^8	95.4
24	0.098	Brown	Soft	Average	4.0×10^{10}	1.5×10^9	88.8
25	0.101	Brown	Soft	Average	3.5×10^{10}	1.2×10^9	89.7
26	0.091	Dark brown	Hard	Large	7.1×10^{10}	2.3×10^9	90.4
27	0.098	Greenish brown	Soft	Large	3.2×10^{10}	5.7×10^7	99.5
28	0.099	Greenish brown	Soft	Small	3.4×10^{10}	1.4×10^8	98.8
29	0.098	Brown	Soft	Small	7.6×10^{10}	1.5×10^9	94.1
30	0.101	Brown	Soft	Average	6.7×10^{10}	2.5×10^9	89.0

Intestinal bacterial flora analysis after oral administration of preB

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no. 13															
Supertaxonomy	Num	phylum	Num	class	Num	order	Num	family	Num	genus	Num	species	Num	Max%	Min%
Bacteria	91	Firmicutes	56	"Erysipelotrichi"	2	Erysipelotrichales	2	Erysipelotrichaceae	23	Clostridium	2	Clostridium apiflorum	2	94	89
				Clostridia	54	Clostridiales	54	Clostridiaceae			18	Clostridium cellulolyticum	2	90	89
												Clostridium sporosphaeroides	2	91	91
												Clostridium nexie	3	97	97
												Clostridium saccharolyticum	2	54	83
												Clostridium halloyi	2	95	94
												Clostridium lactofermentans	2	56	96
												Clostridium botulinum	8	55	95
												Dorea longipetasma	1	89	99
												Faecalibacterium prausnitzii	4	59	92
												Roseburia intestinalis	1	82	92
												Ruminococcus obeum	10	97	95
												Ruminococcus luti	1	98	98
												Ruminococcus acetivivax	1	96	96
												Lachnospira pectinoscizae	1	96	96
												Anaerostipes caecae	8	96	93
												Eubacterium eligens	3	98	92
												Eubacterium hallii	4	98	98
												Eubacterium ramulus	2	97	97
												Bacteroides vulgatus	8	99	98
												Bacteroides distasonis	1	98	98
												Bacteroides eggerthii	4	98	98
												Bacteroides ovatus	1	98	98
												Bacteroides merdae	4	99	98
												Bacteroides stercoris	5	92	92
												Bacteroides caecae	10	86	86
												Unclassified bacterium aduifae12.25	2	99	99
Unclassified bacteria	91	Unclassified bacteria	91	Unclassified bacteria	91	Unclassified bacteria	91	Unclassified bacteria	91	Unclassified bacteria	91	Unclassified bacteria	91	91	91

no. 14															
Supertaxidom	Num.	phylum	Num.	class	Num.	order	Num.	family	Num.	genus	Num.	species	Num.	Max.	Min.
Bacteria	92	Proteobacteria	3	Gammaproteobacteria	1	Enterobacteriales	1	Enterobacteriaceae	1	Escherichia	1	Escherichia coli	1	100	100
				Betaproteobacteria	2	Burkholderiales	2	Burkholderiaceae	2	Ralstonia	2	Ralstonia camphensis	2	80	89
				Firmicutes	74	Bacilli	61	Bacillales	59	Streptococcus	59	Streptococcus salivarius	5	100	99
												Streptococcus pyogenes	1	99	99
												Streptococcus lutealis	52	100	99
												Streptococcus sinensis	1	99	99
												Clostridium botulinum	5	95	95
												Dorea longicatena	1	99	99
												Lachnospira pectinocitiza	1	98	99
												Eubacterium hallii	1	98	99
												Eubacterium rectale	5	99	98
												Fusobacterium portiformis	2	95	94
												Bacteroides vulgatus	13	99	98
	92	Fusobacteria	2	Fusobacteria (class)	2	Fusobacteriales	2	Fusobacteriaceae	2	Fusobacterium	2	Fusobacterium portiformis	2	95	94
		Bacteroidetes	13	Bacteroides (class)	13	Bacteroidales	13	Bacteroidaceae	13	Bacteroides	13	Bacteroides vulgatus	13	99	98

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