



STUDY REPORT

**STUDY No.
181003/AGG/PC-a**

STUDY TITLE

**EFFECT OF PREB® MACROBIOTIC SUPERFOOD POWDER
OVER INTESTINAL MICROFLORA
OF SWISS ALBINO MICE**

Sponsor's name and Address

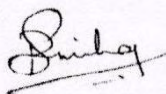
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Study Report Approval

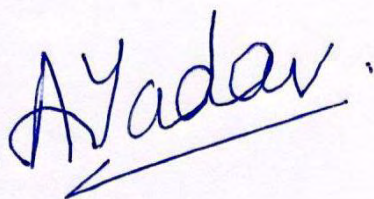
On Behalf of Vedic Lifesciences Pvt. Ltd.



22.06.2020

Date/Month/Year

Study Monitor- Dr Pamela Sinha



22 JUN 2020

Date/Month/Year

QAU- Anil Yadav

On behalf of Sponsor

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Mr. John Jarmul

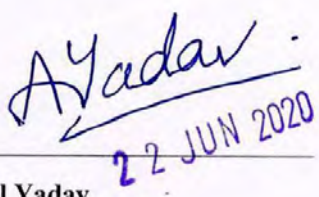
GOOD LABORATORY PRACTICE COMPLIANCE STATEMENT

This study was conducted in accordance with OECD Principles of Good Laboratory Practice (GLP), document no. ENV/MC/CHEM (98)17 (as revised in 1997) and adopted by the decision of the OECD Council [C(97)186/Final]. This study was performed in accordance with the Standard Operating Procedures and signed Study Plan.

There were no circumstances that might have affected the quality or integrity of the study.

No circumstances in the study have been left unreported which might have influence on the quality or integrity of the study.

This is also to certify that the results presented in this report are complete, true and accurate reflection of the raw data obtained during the conduct of the study and I, hereby accept the responsibility for the validity of the data.



Anil Yadav
QAU

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SUMMARY

The objective of the study was to assess the effect of prebiotic powder and compare the number of intestinal micro flora in excrement of mice before and after administration and evaluating the function of test item in adjusting the intestinal flora function of mice; when administered repeatedly for 14 consecutive days by oral route. The test was carried out according to the method for intestinal flora examination for “adjusting intestinal flora function” in the Technical Specification for Inspection and Evaluation of Health Food (version 2003).

Animals were acclimatized for minimum 5 days before the initiation of treatment. A total of 30 male Swiss Albino mice were randomly divided into three (G1 to G3) groups. Each group comprised of 10 males. Animals in group G2 and G3 were administered with test item (PREB® macrobiotic super food powder) at the dose levels of 0.205 and 0.400 g/kg b.w. respectively. Animals in group G1 were administered with vehicle (0.5 % carboxy methyl cellulose). The administration of test item formulations and vehicle was performed by oral gavage for a period of 14 consecutive days. The dose formulations were prepared daily just before dosing.

Animals were observed for cage side clinical signs once daily and mortality and morbidity twice during working days and once during holidays. Body weight was measured daily during treatment and on day 15 (terminal body weight) prior to necropsy.

All the mice were sacrificed terminally on day 15. The sacrificed animals were subjected to detailed gross pathological examination.

For assessment of microbial load of intestinal excrement faecal pellets of approximately 0.1 g, was collected from each mouse under sterile conditions, both before and after administration of test item. Subsequent dilutions were made and inoculated on respective culture medium. Later have obtained colonies were characterized morphologically followed by gram staining and biochemical testing as confirmative tests.

No mortality and adverse clinical signs were observed throughout the experiment across all the groups. No treatment related adverse effect on the body weight and body weight gain was observed.

No treatment related gross pathological changes were observed during necropsy in any of the groups.

The PREB® macrobiotic super food powder increased the microbial load of *Bifidobacterium*, *Lactobacillus* and *Enterobacterium* when administered repeatedly for 14 consecutive days up to a dose level of 0.400 g/kg.

LIST OF ABBREVIATIONS

%	Percent
±	Plus or Minus
°C	Degree Centigrade
µg	Microgram
µL	Micro liter
CFU	Colony Forming Unit
COA	Certificate of Analysis
e.g.	Example
EMB	Eosin Methylene Blue
g	Gram
h/hr	Hour
Kg	Kilogram
mg	Milligram
mL	Milliliter
mm	Millimeter
No.	Number
PPE	Personal Protective Equipment
RO	Reverse Osmosis

1.0 OBJECTIVE

The study is to assess the effect of PreB® Macrobiotic Superfood Powder on the intestinal micro flora in excrement of mice before and after administration.

2.0 PREFACE

2.1 GENERAL

Title of the study : Effect of PreB® Macrobiotic Superfood Powder over Intestinal Micro Flora of Swiss Albino Mice

Monitoring Scientist : Dr.Pamela Sinha
Vedic Life Sciences Pvt. Ltd.,
203, Morya Landmark 1, Off New Link Road,
Andheri (West), Mumbai 400053, India

2.2 STUDY SCHEDULE

Study Initiation Date	20 th Feb. 2020
Experiment Start Date	20 th Feb. 2020
Experiment Completion Date	21 st Mar. 2020
Study Completion Date	22 nd Jun. 2020

2.3 SAFETY PRECAUTIONS

Safety precautions like use of Personal Protective Equipment (PPE) namely apron, facemask, head cap, gloves and goggles and isolation of test material from the other exposure conditions were followed to ensure the health and safety of the personnel. All study related activity was performed in bio safety cabinet/Laminar air flow unit wherever applicable.

2.4 AMENDMENTS AND DEVIATIONS

No Amendment to the study plan was raised during the conduct of the study. No from the study plan were recorded during the study.

2.5 ARCHIVING

Vedic Lifesciences Pvt. Ltd. will retain the study plan, a sample of the test item (till expiry/ ten year which ever earlier), raw data and final report of the present study and

all the soft copies for at least ten years. No data will be discarded without the Sponsor's written consent.

3.0 TEST ITEM DETAILS

The identity, composition, concentration and stability of the test item were the responsibility of the Sponsor. No analysis was performed at VLPL, India to confirm the same. The following are the characteristic details of test item as provided by Sponsor.

Test Item

Test Item Name	:	PreB® Macrobiotic Superfood Powder
Batch No.	:	080417-0535
Physical Appearance	:	Powder and light brownish orange
Date of Manufacture	:	16 th Aug. 2017
Date of Expiry	:	15 th Aug. 2020
Storage Conditions	:	21-29°C
Manufactured by	:	Anderson Global Group

4.0 CONTROLS

4.1 VEHICLE CONTROL

0.5 % sodium salt of carboxy methyl cellulose (prepared in autoclaved RO water) was used as vehicle for the dose formulation.

The following were the characteristic details of vehicle

Vehicle Name	:	Carboxy Methyl Cellulose Sodium Salt
Physical Appearance	:	Almost white powder
Batch Number	:	2183670817
Manufacture Date	:	August, 2017
Retest Date	:	August, 2022

5.0 TEST SYSTEM

Species	:	Mice (<i>Mus Musculus</i>)
Sex	:	Male
Strain	:	Swiss Albino

Number of animals per group	:	10
Total Number of animals	:	36
Age at the start of acclimatization	:	6-8 weeks
Body weight range	:	On the day of randomization the weight variation of the animals did not exceed $\pm 20\%$ of the mean body weight
Animal source	:	From CPCSEA approved vendor

The screening of intestinal micro flora (Bifidobacterium, Lactobacillus, Enterococcus and Enterobacterium) of mice was conducted using faecal matter from different sources of animals. Based on the results from screening test the source of animals was selected.

5.1 JUSTIFICATION OF TEST SYSTEM

Mouse is the preferred animal which has been used for many years as suitable experimental animal in gut micro flora investigations. Literature data related to such investigations are also available, which refers to the use of mice as experimental animals.

6.0 ANIMAL HUSBANDRY

6.1 ENVIRONMENTAL CONDITIONS

Animals were maintained in a controlled environment of the experimental animal room with a temperature of 19-25° C, relative humidity of $50 \pm 20\%$, a light/dark cycle of ~12 hours.

6.2 HOUSING

The animals were housed group wise having maximum 3 animals per cage throughout the study period in clean, sterilized polycarbonate rodent cages (Dimension; L 23.5 X B 16.0 X H 12.5 cubic centimeter) covered with stainless steel grid top mesh having provision for water bottles and feed. Autoclaved clean corn cob was used as a bedding material. The bedding material was analyzed for microbial and contaminant analysis as per routine analysis procedures of test facility. Authorized photo copies of microbial and contaminant analysis reports of bedding material were part of study raw data file.

6.3 ROOM SANITATION

The floor and work top of the experimental room was mopped with 0.03% sodium hypochlorite twice daily on working days and once on holidays.

6.4 FEED AND WATER

The animals were fed *ad libitum* with autoclaved pellet feed. Drinking water processed by Reverse Osmosis followed by autoclaving was provided *ad libitum* to all animals via water bottles. Water was analyzed for microbial and chemical contaminants as per routine analysis procedures of test facility. An authorized photocopy of such analyzed reports is maintained in the study raw data file. An authorized photocopy of feed analysis reports of nutritional components and contaminants provided by vendor is kept as a part of study raw data file.

6.5 ACCLIMATIZATION

Animals were acclimatized at least for 5 days before the initiation of treatment. A thorough physical examination was performed before selecting the animals. Animals without any visual signs of illness were used for the study. All animals were observed for cage side clinical signs once daily during acclimatization.

6.6 RANDOMIZATION AND GROUPING

A total of 36 animals will be used for the study,

Each group was containing 10 animals. Animals were randomized and grouped one day prior to initiation of dosing of each phase based on the body weight. Randomization was done using Microsoft excel. Extra 6 animals not selected for randomization were returned to the animal house veterinarian.

6.7 ANIMAL IDENTIFICATION

The animals were marked (at the tip of tail) with temporary animal numbers at the start of acclimatization. The animals were marked with animal permanent numbers with indelible marker at the base of tail.

During acclimatization, cages were identified by cage cards which had the details like; Study No., Study Code, Species, Strain, Sex, Cage No., Animal No., Acclimatization Start Date, Acclimatization End Date, Sign & Date. After randomization, cages were identified by cage cards (Treatment Cage Card) which had details like; Study No. Test Item Code, Species, Strain, Sex, Cage No., Group No., Dose, Animal No., Treatment Start Date, Date of Necropsy, Sign & Date.

7.0 EXPERIMENTAL PROCEDURE

7.1 STUDY DESIGN

Animals in G1 to G3 will be dosed in three phases

Group No.	Product details	Treatment Group	Dose (g/kgb.wt.)	Conc. (g/mL)	No. of Animals / Group	Animal No.
G1	-	Negative Control	-	0	10	01 - 10
G2	PreB® Macrobiotic Superfood Powder	Low Dose	0.205	0.0205	10	11 - 20
G3		High Dose	0.400	0.400	10	21 - 30

Phase	Animal No.
I	G1 : 1-3, G2 : 11-13, G3 : 21-23
II	G1 : 4-6, G2 : 14-16, G3 : 24-26
III	G1 : 7-10, G2 : 17-20, G3 : 27-30

7.2 DOSAGE

Vehicle control group animals (G1) was treated with vehicle continuously up to 14 days. Test item group animals (G2 and G3) were treated continuously up to 14 days with respective dose concentrations. Test item dose groups are as per Section 7.1. Dosing was started on day 1 for phase I, on day 4 for phase II and on day 7 for phase III animals respectively. The dose volume was maintained constant at 10 mL/kg body weight for all the dose groups. Volume of dose to be administered to each animal was calculated based on most recent body weight using below mentioned formula.

$$\text{Dose Volume (mL)} = \text{Body Weight (g)} \times 10/1000$$

7.3 JUSTIFICATION FOR SELECTION OF DOSE AND ROUTE OF ADMINISTRATION

The doses were selected based on sponsor suggestion. Oral route is the intended route in humans. Therefore to understand resistance of intestinal micro flora after and before treatment, oral route of administration was selected for this study.

7.4 DOSE FORMULATION PREPARATION

The dose formulations were prepared daily just before dosing. The required quantity of test item was initially suspended in small volume of 0.5 % carboxy methyl cellulose using mortar and pestle, after which the formulation was further mixed with 0.5 % carboxy methyl cellulose to attain the desired concentration of dose formulation. For low and intermediate doses dilutions were made similarly.

7.5 DOSE ADMINISTRATION

Route of administration : Oral

Prepared dose formulations were administered to mice by oral gavage using 1 mL disposable syringe attached to a 21 Gavage needle.

8.0 OBSERVATIONS

8.1 CLINICAL SIGNS

All animals were observed for cage side clinical signs once daily during experiment. Detailed clinical signs were performed outside the home cage for all animals on the day of randomization and on days 7 and 14. The clinical signs observation included but not limited to changes in skin, eyes and mucous membranes, occurrence of secretions and excretions and autonomic activity (e.g. lacrimation and respiratory pattern) etc.

Animals were observed for mortality and morbidity twice during working days and once during holidays.

8.2 BODY WEIGHT

All animals were weighed on the day of receipt, prior to randomization and daily during treatment. Weight changes were calculated and reported.

8.3 COLLECTION OF INTESTINAL EXCREMENT

From each animal approximately 0.1 gm of excrement was collected aseptically in of thioglycolate broth medium on the day of randomization and on day 15.

8.4 EUTHANASIA

All animals were humanely euthanized using carbon dioxide asphyxiation on day 15.

8.5 GROSS PATHOLOGY

All animals were subjected to complete gross necropsy, including examination of external surface of the body, all orifices, and cavities (cranial, thoracic and abdominal) and for detailed internal examination of viscera.

8.6 MICROBIAL LOAD OF INTESTINAL EXCREMENT

Excrement was diluted with 1 mL of thioglycolate broth medium and then viable count was performed on serially diluted samples in thioglycolate broth and plated in selective medium in duplicate by pour plate method (~20 mL of medium) to determine the microbial load of intestinal micro flora per gram. The plates were incubated at $37 \pm 2^\circ\text{C}$ for about 48 to 72 hours. Post incubation colonies were counted in each plate and recorded.

Based on the colony morphology the following tests were performed as a confirmatory test for *Bifidobacterium*, *Lactobacillus*, *Enterococcus* and *Enterobacterium*, for all individual animals:

Name of the organism	Culture response, biochemical tests, Activity	Result
<i>Bifidobacterium</i>	Growth on Bifidobacterium selective agar	Present
	Gram staining	Gram positive bacilli, Y shaped
	Motility	Non motile
	Bile esculin	Positive
	Oxidase	Negative
	Catalase	Negative
<i>Lactobacillus</i>	Growth on lactobacillus selective agar	Present, large, white colonies.
	Gram staining	Gram positive rods
	Motility	Non motile
	Catalase	Negative
	Oxidase	Negative
<i>Enterococcus</i>	Growth on Enterococcus selective agar	Present, pink - dark red (maroon) colored colonies
	Gram staining	Gram positive cocci
	Bile esculin	Positive
<i>Enterobacterium</i>	Growth on EMB agar	Present, confirmed followed by Indole methyl red, Vogues proskaur, Lactose, Citrate, Urease, TSI, Oxidase etc..tests

Note: Refer Appendix 7 for the results of individual animal culture response, biochemical tests, and identification results.

Colony count obtained for all the groups will be recorded, calculated per gram of excrement using below mentioned formula.

Bacterial colony logarithm change value (%) will be calculated using below mentioned formula.

$$\text{CFU per gram of fecal sample} = \frac{\text{Mean no. of colony counted on plates} \times \text{dilution factor} \times \text{volume of stock}}{\text{Weight of fecal sample}}$$

Bacterial colony logarithm change value (%) will be calculated using below mentioned formula.

$$\text{Bacterial colony logarithm change value (\%)} = 100 \times \frac{(\text{bacterial colony logarithm after test item administration} - \text{bacterial colony logarithm before test item administration})}{\text{bacterial colony logarithm before test item administration}}$$

The Following Chemicals/ Reagents/ Solutions were used for experiment

Name	Make	Catalogue	Batch No.
Fluid thioglycollate medium	Himedia	M009	0000311824, 0000349789
Bifidobacterium agar, Modified	Himedia	M1858	0000298501, 0000351197
bifidobacteriumagar supplement	Himedia	FD285	0000364225
EMB agar	Himedia	M317	0000345757
M enterococcus agar base	Himedia	M1108	0000308470, 0000337556
Lactobacillus selection Agar Base	Himedia	M1180	0000382160
3% Catalase solution	NA	NA	NA
Oxygen indicator	Himedia	LE065	0000406692
Lactose Fermentation tubes	NA	NA	NA
Sodium Carbonate	Finar	11560SG500	786410218EQ
Ethanol	Chnagshu hongsheng	NA	20161220
Esculin Supplement	Himedia	FD050	0000409453
Peptone water	Himedia	M028	0000303570

Acetone	Finar	10020LM500	539980209AQ
Urea 40%	Himedia	FD048	0000323287
Anaerogas pack 3.5L	Himedia	LE002A	18-1034
Anaero Bag	Himedia	LE 010	18-1031
Kovacs Indole Reagent	Himedia	R008	0000312971
Triple sugar iron agar	Himedia	M021	0000328595
Urea agar base	TM media	TM 394	0000302556
Gram stains kit	Himedia	K001	0000314160, 0000360822
Anaero indicator tablet	Himedia	LE065	19-1041
Pottasium Hydroxide pellets	Finar	11290SG500	75890020710
Methyl red solution	Nice	NA	304329
α -Naphthol	Himedia	GRM1392	0000268394
Simmons citrate agar	Himedia	M099	0000255405

The Following Instruments were used for the experiment:

Name of the consumable /Instrument	Make	Model
Bio-Safety Cabinet Level II	Laminar Flow systems	-
Laminar Air flow unit	Laminar Flow systems	-
BOD Incubator	Newtronic	NEC 108RTSS1
Micropipettes	Rainin, Eppendorf	-
Autoclave	Equitron	7441SLEFA
Petri dishes	Falcon	353146
Cyclomixer	Remi	CM-101
Refrigerator	Haier	HYC-360

9.0 DATA RECORDING

Summary and individual data of the animals for parameters like clinical signs, body weight, body weight gain and intestinal micro flora count were recorded in a tabular form.

10.0 STATISTICAL ANALYSIS

All continuous data like body weight, body weight change, each group intestinal micro flora obtained from the mice calculated and data was subjected for various statistical analyses using systat software. Data was evaluated for basic statistics, homogeneity of variance by barlett's test, ANOVA, Dunnett's two sided test for equal variance and Dunnett T3 for unequal variance. Data was evaluated by t- test as applicable. The parameters were analyzed at 5% ($p < 0.05$) level of significance.

11.0 REPORTING

Draft report was submitted to the Sponsor for review of the formatting and completeness. Following receipt of the Sponsor's comments two original sets of final report will be prepared. One (Original 01 of 02) will remain in the archives of VLPL, while another (Original 02 of 02) will be sent to the Sponsor.

12.0 RESULTS AND DISCUSSION

12.1 CLINICAL SIGNS AND MORTALITY

[Table 1 and 2: Summary of Mortality and Summary of Clinical Signs; Appendix 1: Individual Animal Clinical Signs]

No mortality and adverse clinical signs were observed throughout the experiment across all the groups.

12.2 BODY WEIGHT

[Table 3 and 4: Summary of Animal Body Weight (g) and Summary of Animal Body Weight Gain (g) respectively; Appendix 2 and 3: Individual Animal Body Weight (g) and Individual Animal Body Weight Gain (g)]

No statistically significant difference in the body weight and body weight gain was observed in groups G2, and G3 when compared with group G1 animals.

12.3 GROSS PATHOLOGY

[Table 5: Summary of Gross Pathology; Appendix No. 4: Individual Animal Gross Pathology]

No gross pathological changes were observed during necropsy across all groups.

12.4 MICROBIAL LOAD OF INTESTINAL EXCREMENT

[Table 6: Summary of Intestinal micro flora before and after treatment; Appendix No. 5 and 6: Individual Animal intestinal micro flora before treatment and Individual Animal intestinal micro flora after treatment].

Animals were dosed for 14 consecutive days. Animals in group G2 and G3 were administered with test item (PreB® Macrobiotic Superfood Powder) at the dose levels of 0.205 and 0.400 g/kg b.w. respectively. Animals in group G1 were administered with vehicle (0.5 % carboxy methyl cellulose). Before and after the consecutive 14 days administration of test item, intestinal microflora of all test item group animals were compared with vehicle control group animals.

OBSERVATIONS FOR GROUPS TREATED WITH PREB® MACROBIOTIC SUPERFOOD POWDER

In Group G2 (Low dose) the observed % change values (bacterial colony logarithm change value) for *Bifidobacterium*, *Lactobacillus*, *Enterococcus* and *Enterobacterium* were 4.227, -1.053, -1.158 and 2.005 respectively. In group G1 (vehicle control) the observed % change value for *Bifidobacterium*, *Lactobacillus*, *Enterococcus* and *Enterobacterium* were -0.528, -1.516, -0.564 and 2.013. No statistical significance was observed in any of the organism in pre and post microbial load analysis. However, the % change values for *Bifidobacterium* showed a substantial change in terms of increase in the post count. The % change values obtained for *Lactobacillus*, *Enterococcus* and *Enterobacterium* were comparable to that of vehicle control and did not show any statistical or biological significance.

In Group G3 (High dose) the observed % change values (bacterial colony logarithm change value) for *Bifidobacterium*, *Lactobacillus*, *Enterococcus* and *Enterobacterium* were 5.216, 0.553, -2.631 and 3.198 respectively. No statistical significance was observed in any of the organism in pre and post microbial load analysis. However, the % change values for *Bifidobacterium* showed a substantial change in terms of increase in the post count. The % change values obtained for *Lactobacillus* and *Enterobacterium* were slightly higher when compared to vehicle control. The % change values obtained for *Enterococcus* were comparable to that of vehicle control and did not show any statistical or biological significance.

13.0 CONCLUSION

Based on the above findings following conclusions were drawn,

The PreB® Macrobiotic Superfood Powder increased the microbial load of *Bifidobacterium*, *Lactobacillus* and *Enterobacterium* when administered repeatedly for 14 consecutive days up to a dose level of 0.400 g/kg.

14.0 REFERENCES

- Impact of a Resistant Dextrin on Intestinal Ecology: How Altering the Digestive Ecosystem with NUTRIOSE®, a Soluble Fiber with Prebiotic Properties, May Be Beneficial for Health, The Journal of International Medical Research, 2012; 40: 211 – 224 [first published online ahead of print as 40(1) 8].
- Nanjing Medical University Report No.: KY101KF2016002-03
- Katarzyna Śliżewska^{1*}, Zdzisława Libudziś¹, Renata Barczyńska², Dietary resistant dextrins positively modulate fecal and cecal microbiota composition in young rats. ABP, BIOCHIMICA POLONICA, Vol. 62, No 4/2015, 677–681
- C Lefranc-Millot, L Guérin-Deremau, D Wils, C Neut, LE Miller and MH Saniez-Degrave, Impact of a Resistant Dextrin on Intestinal Ecology: How Altering the Digestive Ecosystem with NUTRIOSE®, a Soluble Fibre with Prebiotic Properties, May Be Beneficial for Health DOI: 10.1177/147323001204000122 Journal of International Medical Research 2012 40: 211.
- Ananthanarayanan and Paniker's textbook of microbiology-Seventh Edition, 2007

TABLE – 1: SUMMARY OF MORTALITY

Group	Treatment	Dose (g/kg b.w.)	Mortality / No. of Animals
			Male
G1	Vehicle Control	0	0/10
G2	Low Dose	0.205	0/10
G3	High Dose	0.400	0/10

TABLE – 2: SUMMARY OF CLINICAL SIGNS

Group : G1						Treatment : Vehicle Control				
Sex : Male						Dose: 0 g/kg b.w.				
Observation	Study Day									
	1	2	3	4	5	6	7	8	9	10
Normal	10/10	10/10	10/10	10/10	10/10	10/10	10/10	10/10	10/10	10/10
Observation	Study Day									
	11	12	13	14						
Normal	10/10	10/10	10/10	10/10						

Group : G2					Treatment : Low Dose						
Sex : Male					Dose:0.205 g/kg b.w.						
Observation	Study Day										
	1	2	3	4	5	6	7	8	9	10	
Normal	10/10	10/10	10/10	10/10	10/10	10/10	10/10	10/10	10/10	10/10	
Observation	Study Day										
	11	12	13	14							
Normal	10/10	10/10	10/10	10/10							

Group : G3	Treatment : High Dose									
Sex : Male	Dose: 0.400 g/kg b.w.									
Observation	Study Day									
	1	2	3	4	5	6	7	8	9	10
Normal	10/10	10/10	10/10	10/10	10/10	10/10	10/10	10/10	10/10	10/10
Observation	Study Day									
	11	12	13	14						
Normal	10/10	10/10	10/10	10/10						

TABLE - 3: SUMMARY OF ANIMAL BODY WEIGHT (G)

Group	Treatment	Dose (g/kg b.w.)		Body Weight (g) on Day					
				1	2	3	4	5	6
G1	Vehicle Control	0	MEAN	28.31	28.19	28.47	28.81	29.27	29.38
			SD	1.40	1.48	1.46	1.49	1.48	1.48
			N	10	10	10	10	10	10
G2	Low Dose	0.205	MEAN	28.57	28.82	29.00	29.00	29.17	29.48
			SD	1.43	1.54	1.53	1.66	1.54	1.65
			N	10	10	10	10	10	10
G3	High Dose	0.400	MEAN	28.60	28.63	28.89	29.07	29.38	29.57
			SD	1.39	1.42	1.42	1.55	1.54	1.56
			N	10	10	10	10	10	10
Group	Treatment	Dose (g/kg b.w.)		Body Weight (g) on Day					
				7	8	9	10	11	12
G1	Vehicle Control	0	MEAN	29.57	29.86	29.91	30.22	30.39	30.52
			SD	1.41	1.53	1.48	1.46	1.50	1.55
			N	10	10	10	10	10	10
G2	Low Dose	0.205	MEAN	29.62	29.73	30.09	30.21	30.39	29.62
			SD	1.67	1.56	1.57	1.58	1.59	1.67
			N	10	10	10	10	10	10
G3	High Dose	0.400	MEAN	29.71	29.89	30.19	30.43	30.68	30.98
			SD	1.59	1.50	1.44	1.43	1.47	1.43
			N	10	10	10	10	10	10
Group	Treatment	Dose (g/kg b.w.)		Body Weight (g) on Day					
				13	14	15			
G1	Vehicle	0	MEAN	30.92	31.01	31.09			

Control			SD	1.57	1.56	1.64
			N	10	10	10
G2	Low Dose	0.205	MEAN	30.81	31.10	31.27
			SD	1.52	1.55	1.61
			N	10	10	10
G3	High Dose	0.400	MEAN	31.17	31.46	31.61
			SD	1.36	1.36	1.32
			N	10	10	10

TABLE – 4: SUMMARY OF ANIMAL BODY WEIGHT GAIN (G) - RELATIVE TO DAY 1

Group	Treatment	Dose (g/kg b.w.)		Body Weight Gain (g) relative to day 1				
				1 - 2	1 - 3	1 - 4	1 - 5	1 - 6
G1	Vehicle Control	0	MEAN	-0.12	0.15	0.50	0.95	1.07
			SD	0.65	0.69	0.91	0.97	0.91
			N	10	10	10	10	10
G2	Low Dose	0.205	MEAN	0.25	0.43	0.43	0.60	0.91
			SD	0.34	0.22	0.45	0.36	0.43
			N	10	10	10	10	10
G3	High Dose	0.400	MEAN	0.03	0.29	0.47	0.77	0.97
			SD	0.43	0.36	0.60	0.60	0.49
			N	10	10	10	10	10
Group	Treatment	Dose (g/kg b.w.)		Body Weight Gain (g) relative to day 1				
				1 - 7	1 -8	1 - 9	1-10	1 - 11
G1	Vehicle Control	0	MEAN	1.26	1.55	1.60	1.90	2.08
			SD	0.52	0.48	0.47	0.61	0.69
			N	10	10	10	10	10
G2	Low Dose	0.205	MEAN	1.05	1.16	1.51	1.64	1.82
			SD	0.36	0.27	0.32	0.50	0.49
			N	10	10	10	10	10
G3	High Dose	0.400	MEAN	1.11	1.28	1.58	1.83	2.08
			SD	0.66	0.58	0.65	0.58	0.59
			N	10	10	10	10	10
Group	Treatment	Dose (g/kg b.w.)		Body Weight Gain (g) relative to day 1				
				1 - 12	1 -13	1 - 14	1-15	
G1	Vehicle Control	0	MEAN	2.20	2.61	2.70	2.78	
			SD	0.87	0.66	0.71	0.68	

			N	10	10	10	10
			MEAN	2.06	2.24	2.53	2.70
G2	Low Dose	0.205	SD	0.41	0.26	0.28	0.42
			N	10	10	10	10
			MEAN	2.38	2.56	2.85	3.01
G3	High Dose	0.400	SD	0.70	0.71	0.73	0.74
			N	10	10	10	10

TABLE –5: SUMMARY OF GROSS PATHOLOGY

	Group	G1	G2	G3
Observation	Treatment	Vehicle Control	Low Dose (VLS/T03)	High Dose(VLS/T03)
	Dose (g/kg b.w.)	0	0.205	0.400
No Abnormality Detected	-	10/10	10/10	10/10



TABLE –6: SUMMARY OF INTESTINAL MICRO FLORA BEFORE AND AFTER TREATMENT

Group →		G1(Vehicle Control)	G2	G3
Dose (g/kg b.wt.)		0	0.205	0.4
<i>Bifidobacterium</i>				
Before test item	Mean	8.505	8.511	8.425
admi ni stration	SD	0.615	0.925	0.695
After test item	Mean	8.460	8.871	8.864
admi ni stration	SD	1.108	0.516	0.457
% change value		-0.528	4.227	5.216
<i>Lactobacillus</i>				
Before test item	Mean	8.161	7.415	7.450
admi ni stration	SD	0.886	1.258	0.785
After test item	Mean	8.037	7.337	7.491
admi ni stration	SD	0.649	0.698	0.430
% change value		-1.516	-1.053	0.553
<i>Enterococcus</i>				
Before test item	Mean	8.699	8.873	8.074
admi ni stration	SD	0.572	0.682	1.056
After test item	Mean	8.650	8.770	7.862
admi ni stration	SD	0.593	0.988	0.916
% change value		-0.564	-1.158	-2.631
<i>Enterobacterium</i>				
Before test item	Mean	8.078	8.482	8.141
admi ni stration	SD	1.396	0.967	1.218
After test item	Mean	8.240	8.652	8.402
admi ni stration	SD	0.908	0.954	0.844
% change value		2.013	2.005	3.198

APPENDIX – 1: INDIVIDUAL ANIMAL CLINICAL SIGNS

Group	: G1					Treatment : Vehicle Control				
Sex	: Male					Dose: 0 g/kg b.w.				
Animal	Study Day									
No.	1	2	3	4	5	6	7	8	9	10
1	1	1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1	1	1	1
8	1	1	1	1	1	1	1	1	1	1
9	1	1	1	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1	1	1	1
Animal	Study Day									
No.	11	12	13	14						
1	1	1	1	1						
2	1	1	1	1						
3	1	1	1	1						
4	1	1	1	1						
5	1	1	1	1						
6	1	1	1	1						
7	1	1	1	1						
8	1	1	1	1						
9	1	1	1	1						
10	1	1	1	1						

Key: 1 – Normal

APPENDIX – 1: INDIVIDUAL ANIMAL CLINICAL SIGNS Contd.

Group	: G2					Treatment : Low Dose				
Sex	: Male					Dose: 0.205 g/kg b.w.				
Animal	Study Day									
No.	1	2	3	4	5	6	7	8	9	10
11	1	1	1	1	1	1	1	1	1	1
12	1	1	1	1	1	1	1	1	1	1
13	1	1	1	1	1	1	1	1	1	1
14	1	1	1	1	1	1	1	1	1	1
15	1	1	1	1	1	1	1	1	1	1
16	1	1	1	1	1	1	1	1	1	1
17	1	1	1	1	1	1	1	1	1	1
18	1	1	1	1	1	1	1	1	1	1
19	1	1	1	1	1	1	1	1	1	1
20	1	1	1	1	1	1	1	1	1	1
Animal	Study Day									
No.	11	12	13	14						
11	1	1	1	1						
12	1	1	1	1						
13	1	1	1	1						
14	1	1	1	1						
15	1	1	1	1						
16	1	1	1	1						
17	1	1	1	1						
18	1	1	1	1						
19	1	1	1	1						
20	1	1	1	1						

Key: 1 – Normal

APPENDIX – 1: INDIVIDUAL ANIMAL CLINICAL SIGNS Contd.

Group	: G3					Treatment : High Dose				
Sex	: Male					Dose: 0.400 g/kg b.w.				
Animal	Study Day									
No.	1	2	3	4	5	6	7	8	9	10
21	1	1	1	1	1	1	1	1	1	1
22	1	1	1	1	1	1	1	1	1	1
23	1	1	1	1	1	1	1	1	1	1
24	1	1	1	1	1	1	1	1	1	1
25	1	1	1	1	1	1	1	1	1	1
26	1	1	1	1	1	1	1	1	1	1
27	1	1	1	1	1	1	1	1	1	1
28	1	1	1	1	1	1	1	1	1	1
29	1	1	1	1	1	1	1	1	1	1
30	1	1	1	1	1	1	1	1	1	1
Animal	Study Day									
No.	11	12	13	14						
21	1	1	1	1						
22	1	1	1	1						
23	1	1	1	1						
24	1	1	1	1						
25	1	1	1	1						
26	1	1	1	1						
27	1	1	1	1						
28	1	1	1	1						
29	1	1	1	1						
30	1	1	1	1						

Key: 1 - Normal

APPENDIX – 2: INDIVIDUAL ANIMAL BODY WEIGHT (G)

Group	: G1	Treatment : Vehicle Control				
Sex	: Male	Dose: 0 g/kg b.w.				
Animal	Body Weight (g) on Day					
No.	1	2	3	4	5	6
1	26.713	26.413	26.569	27.346	28.641	28.637
2	28.308	29.150	29.838	30.552	31.108	31.304
3	30.147	30.575	30.647	31.213	31.501	31.527
4	27.897	27.988	27.955	28.119	28.157	28.294
5	28.674	27.247	28.022	28.059	29.052	29.002
6	29.758	28.846	28.737	28.763	29.117	29.708
7	26.145	26.254	26.424	26.754	26.914	27.023
8	27.478	27.349	28.037	28.617	28.964	29.012
9	27.794	27.879	28.012	28.125	28.245	28.273
10	30.214	30.224	30.427	30.597	30.974	31.003

Group	: G1	Treatment : Vehicle Control				
Sex	: Male	Dose: 0 g/kg b.w.				
Animal	Body Weight (g) on Day					
No.	7	8	9	10	11	12
1	28.400	28.342	29.020	29.468	29.270	30.081
2	30.633	30.892	30.198	31.312	31.509	31.443
3	31.680	31.983	32.406	32.062	32.502	32.983
4	28.578	28.797	29.119	29.210	29.257	29.379
5	29.557	30.427	29.861	29.866	29.452	29.102
6	30.500	31.078	31.099	31.864	31.952	31.996
7	27.210	27.341	27.452	27.628	27.942	28.004
8	29.124	29.257	29.476	29.645	30.123	30.145
9	28.819	28.974	28.791	29.350	29.951	30.027
10	31.245	31.540	31.687	31.745	31.978	32.012

APPENDIX – 2: INDIVIDUAL ANIMAL BODY WEIGHT (g) Contd.

Group	: G1	Treatment : Vehicle Control		
Sex	: Male	Dose: 0 g/kg b.w.		
Animal No.	Body Weight (g) on Day			
	13	14	15	
1	30.323	30.751	29.927	
2	31.853	31.221	31.948	
3	33.413	33.678	33.749	
4	29.647	29.779	30.119	
5	30.920	30.396	30.148	
6	32.207	32.642	32.815	
7	28.124	28.451	28.425	
8	30.245	30.412	30.517	
9	30.054	30.198	30.570	
10	32.456	32.587	32.679	

Group	: G2	Treatment : Low Dose				
Sex	: Male	Dose: 0.205 g/kg b.w.				
Animal	Body Weight (g) on Day					
No.	1	2	3	4	5	6
11	27.547	27.125	27.618	27.523	27.914	28.451
12	29.647	29.729	29.838	29.941	30.021	30.426
13	30.457	30.952	31.083	31.940	31.456	31.945
14	28.204	28.975	28.973	28.153	28.179	28.700
15	28.976	29.627	29.507	29.658	30.246	30.742
16	29.879	29.912	30.516	30.360	30.489	30.847
17	26.245	26.457	26.578	26.847	26.978	27.001
18	27.168	27.245	27.459	27.314	27.658	27.548
19	27.541	27.847	27.945	28.012	28.245	28.451
20	30.057	30.354	30.457	30.247	30.547	30.678

Group	: G2	Treatment : Low Dose				
Sex	: Male	Dose: 0.205 g/kg b.w.				
Animal	Body Weight (g) on Day					
No.	7	8	9	10	11	12
11	28.512	28.913	29.283	29.763	29.247	29.565
12	30.982	30.651	31.062	31.468	31.964	32.538
13	32.121	32.146	32.179	32.258	32.342	32.458
14	29.161	29.475	29.608	29.149	29.069	29.846
15	30.285	30.115	30.978	31.596	31.684	31.661
16	31.001	31.245	31.794	31.423	31.798	31.746
17	27.124	27.245	27.427	27.579	27.978	28.015
18	27.487	27.948	28.421	28.578	29.124	29.254
19	28.645	28.647	28.974	29.016	29.245	29.486
20	30.874	30.957	31.127	31.259	31.457	31.776

Group	: G2	Treatment : Low Dose		
Sex	: Male	Dose: 0.205 g/kg b.w.		
Animal No.	Body Weight (g) on Day			
	13	14	15	
11	29.872	30.073	30.284	
12	32.168	32.662	32.987	
13	32.624	33.045	33.124	
14	30.564	30.710	31.066	
15	31.693	31.943	31.989	
16	32.157	32.169	32.254	
17	28.127	28.457	28.034	
18	29.345	29.456	29.974	
19	29.578	30.124	30.456	
20	31.948	32.379	32.579	

APPENDIX – 2: INDIVIDUAL ANIMAL BODY WEIGHT (g) Contd.

Group	: G3	Treatment : High Dose				
Sex	: Male	Dose: 0.400 g/kg b.w.				
Animal	Body Weight (g) on Day					
No.	1	2	3	4	5	6
21	27.469	27.966	28.173	28.923	29.198	29.004
22	28.996	28.528	29.049	28.963	29.047	29.764
23	30.647	31.342	31.251	31.866	32.294	32.490
24	28.884	29.048	29.748	29.995	29.954	30.124
25	28.976	28.233	28.604	28.606	29.011	29.264
26	29.768	29.511	29.899	30.199	30.697	30.947
27	26.412	26.478	26.578	26.687	26.978	27.145
28	27.123	27.245	27.425	27.532	28.045	28.128
29	27.648	27.875	27.958	27.679	28.036	28.269
30	30.124	30.086	30.245	30.247	30.497	30.579
Group	: G3	Treatment : High Dose				
Sex	: Male	Dose: 0.400 g/kg b.w.				
Animal	Body Weight (g) on Day					
No.	7	8	9	10	11	12
21	29.126	29.037	29.936	29.830	29.902	30.269
22	30.061	30.049	30.570	31.087	31.349	31.941
23	32.998	32.876	32.761	33.044	33.432	33.789
24	30.334	30.681	30.897	30.907	31.043	31.133
25	29.532	29.979	30.043	30.446	30.647	31.099
26	30.767	30.797	31.007	31.256	31.733	31.616
27	27.245	27.456	27.587	28.023	28.456	29.012
28	28.678	29.045	29.657	29.845	30.047	30.458
29	28.124	28.457	28.479	28.644	28.758	28.947
30	30.249	30.479	30.954	31.247	31.459	31.578

APPENDIX – 2: INDIVIDUAL ANIMAL BODY WEIGHT (g) Contd.

Group	: G3	Treatment : High Dose	
Sex	: Male	Dose: 0.400 g/kg b.w.	
Animal No.	Body Weight (g) on Day		
	13	14	15
21	30.544	30.436	30.712
22	31.634	31.812	31.705
23	33.923	34.018	34.158
24	31.478	31.553	31.613
25	31.102	31.614	32.269
26	32.097	32.777	32.473
27	29.456	30.123	30.457
28	30.678	31.023	31.045
29	29.124	29.257	29.345
30	31.649	31.971	32.321

APPENDIX – 3: INDIVIDUAL ANIMAL BODY WEIGHT GAIN (G) -RELATIVE TO DAY 1

Group	: G1	Treatment : Vehicle Control					
Sex	: Male	Dose: 0 g/kg b.w.					
Animal No.	Body Weight Gain (g) relative to day 1						
	1-2	1-3	1-4	1-5	1-6	1-7	1-8
1	-0.300	-0.144	0.633	1.928	1.924	1.687	1.629
2	0.842	1.530	2.244	2.800	2.996	2.325	2.584
3	0.428	0.500	1.066	1.354	1.380	1.533	1.836
4	0.091	0.058	0.222	0.260	0.397	0.681	0.900
5	-1.427	-0.652	-0.615	0.378	0.328	0.883	1.753
6	-0.912	-1.021	-0.995	-0.641	-0.050	0.742	1.320
7	0.109	0.279	0.609	0.769	0.878	1.065	1.196
8	-0.129	0.559	1.139	1.486	1.534	1.646	1.779
9	0.085	0.218	0.331	0.451	0.479	1.025	1.180
10	0.010	0.213	0.383	0.760	0.789	1.031	1.326
Group	: G1	Treatment : Vehicle Control					
Sex	: Male	Dose: 0 g/kg b.w.					
Animal No.	Body Weight Gain (g) relative to day 1						
	1-9	1-10	1-11	1-12	1-13	1-14	1-15
1	2.307	2.755	2.557	3.368	3.610	4.038	3.214
2	1.890	3.004	3.201	3.135	3.545	2.913	3.640
3	2.259	1.915	2.355	2.836	3.266	3.531	3.602
4	1.222	1.313	1.360	1.482	1.750	1.882	2.222
5	1.187	1.192	0.778	0.428	2.246	1.722	1.474
6	1.341	2.106	2.194	2.238	2.449	2.884	3.057
7	1.307	1.483	1.797	1.859	1.979	2.306	2.280
8	1.998	2.167	2.645	2.667	2.767	2.934	3.039
9	0.997	1.556	2.157	2.233	2.260	2.404	2.776
10	1.473	1.531	1.764	1.798	2.242	2.373	2.465

APPENDIX – 3: INDIVIDUAL ANIMAL BODY WEIGHT GAIN (g) - Relative to day 1
1Contd.

Group	: G2	Treatment : Low Dose					
Sex	: Male	Dose: 0.205 g/kg b.w.					
Animal No.	Body Weight Gain (g) relative to day 1						
	1-2	1-3	1-4	1-5	1-6	1-7	1-8
11	-0.422	0.071	-0.024	0.367	0.904	0.965	1.366
12	0.082	0.191	0.294	0.374	0.779	1.335	1.004
13	0.495	0.626	1.483	0.999	1.488	1.664	1.689
14	0.771	0.769	-0.051	-0.025	0.496	0.957	1.271
15	0.651	0.531	0.682	1.270	1.766	1.309	1.139
16	0.033	0.637	0.481	0.610	0.968	1.122	1.366
17	0.212	0.333	0.602	0.733	0.756	0.879	1.000
18	0.077	0.291	0.146	0.490	0.380	0.319	0.780
19	0.306	0.404	0.471	0.704	0.910	1.104	1.106
20	0.297	0.400	0.190	0.490	0.621	0.817	0.900
Group	: G2	Treatment : Low Dose					
Sex	: Male	Dose: 0.205 g/kg b.w					
Animal No.	Body Weight Gain (g) relative to day 1						
	1-9	1-10	1-11	1-12	1-13	1-14	1-15
11	1.736	2.216	1.700	2.018	2.325	2.526	2.737
12	1.415	1.821	2.317	2.891	2.521	3.015	3.340
13	1.722	1.801	1.885	2.001	2.167	2.588	2.667
14	1.404	0.945	0.865	1.642	2.360	2.506	2.862
15	2.002	2.620	2.708	2.685	2.717	2.967	3.013
16	1.915	1.544	1.919	1.867	2.278	2.290	2.375
17	1.182	1.334	1.733	1.770	1.882	2.212	1.789
18	1.253	1.410	1.956	2.086	2.177	2.288	2.806
19	1.433	1.475	1.704	1.945	2.037	2.583	2.915
20	1.070	1.202	1.400	1.719	1.891	2.322	2.522

APPENDIX – 3: INDIVIDUAL ANIMAL BODY WEIGHT GAIN (g) - Relative to day 1
1Contd.

Group	: G3	Treatment : High Dose					
Sex	: Male	Dose: 0.400 g/kg b.w.					
Animal No.	Body Weight Gain (g) relative to day 1						
	1-2	1-3	1-4	1-5	1-6	1-7	1-8
21	0.497	0.704	1.454	1.729	1.535	1.657	1.568
22	-0.468	0.053	-0.033	0.051	0.768	1.065	1.053
23	0.695	0.604	1.219	1.647	1.843	2.351	2.229
24	0.164	0.864	1.111	1.070	1.240	1.450	1.797
25	-0.743	-0.372	-0.370	0.035	0.288	0.556	1.003
26	-0.257	0.131	0.431	0.929	1.179	0.999	1.029
27	0.066	0.166	0.275	0.566	0.733	0.833	1.044
28	0.122	0.302	0.409	0.922	1.005	1.555	1.922
29	0.227	0.310	0.031	0.388	0.621	0.476	0.809
30	-0.038	0.121	0.123	0.373	0.455	0.125	0.355
Group	: G3	Treatment : High Dose					
Sex	: Male	Dose: 0.400 g/kg b.w.					
Animal No.	Body Weight Gain (g) relative to day 1						
	1-9	1-10	1-11	1-12	1-13	1-14	1-15
21	2.467	2.361	2.433	2.800	3.075	2.967	3.243
22	1.574	2.091	2.353	2.945	2.638	2.816	2.709
23	2.114	2.397	2.785	3.142	3.276	3.371	3.511
24	2.013	2.023	2.159	2.249	2.594	2.669	2.729
25	1.067	1.470	1.671	2.123	2.126	2.638	3.293
26	1.239	1.488	1.965	1.848	2.329	3.009	2.705
27	1.175	1.611	2.044	2.600	3.044	3.711	4.045
28	2.534	2.722	2.924	3.335	3.555	3.900	3.922
29	0.831	0.996	1.110	1.299	1.476	1.609	1.697
30	0.830	1.123	1.335	1.454	1.525	1.847	2.197

APPENDIX –4: INDIVIDUAL ANIMAL GROSS PATHOLOGY

Group	: G1	Treatment:	Vehicle Control
Sex	: Male	Dose:	0 g/kg b.w.
Animal No.	Mode of Sacrifice	Gross Pathology Observation	
		External	Internal
1	TS	NAD	NAD
2	TS	NAD	NAD
3	TS	NAD	NAD
4	TS	NAD	NAD
5	TS	NAD	NAD
6	TS	NAD	NAD
7	TS	NAD	NAD
8	TS	NAD	NAD
9	TS	NAD	NAD
10	TS	NAD	NAD
Group	: G2	Treatment:	Low Dose
Sex	: Male	Dose:	0.205 g/kg b.w.
Animal No.	Mode of Sacrifice	Gross Pathology Observation	
		External	Internal
11	TS	NAD	NAD
12	TS	NAD	NAD
13	TS	NAD	NAD
14	TS	NAD	NAD
15	TS	NAD	NAD
16	TS	NAD	NAD
17	TS	NAD	NAD
18	TS	NAD	NAD
19	TS	NAD	NAD
20	TS	NAD	NAD

Keys: TS - Terminal Sacrifice, NAD - No Abnormality Detected

APPENDIX –4: INDIVIDUAL ANIMAL GROSS PATHOLOGY Contd.

Group	: G3	Treatment:	High Dose
Sex	: Male	Dose:	0.400 g/kg b.w.
Animal No.	Mode of Sacrifice	Gross Pathology Observation	
		External	Internal
21	TS	NAD	NAD
22	TS	NAD	NAD
23	TS	NAD	NAD
24	TS	NAD	NAD
25	TS	NAD	NAD
26	TS	NAD	NAD
27	TS	NAD	NAD
28	TS	NAD	NAD
29	TS	NAD	NAD
30	TS	NAD	NAD

APPENDIX –5: INDIVIDUAL ANIMAL INTESTINAL MICRO FLORA BEFORE TREATMENT

Name of the organism: Bifidobacterium

Group : G1		Treatment : Vehicle Control					
Sex : Male		Dose: 0 g/kg b.w.					
Animal No: 1							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	16	4	74074074.07	7.87
	R2	TNTC	TNTC	24	5		
Animal No: 2							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	65	1312500000	9.12
	R2	TNTC	TNTC	TNTC	61		
Animal No: 3							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	41	4	225000000	8.35
	R2	TNTC	TNTC	49	5		
Animal No: 4							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	23	171232876.7	8.23
	R2	TNTC	TNTC	TNTC	27		
Animal No: 5							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	75	13	177777777.8	8.25
	R2	TNTC	TNTC	85	12		
Animal No: 6							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	55	4	100819672.1	8.00
	R2	TNTC	TNTC	68	3		
Animal No: 7							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	112	1288043478	9.11
	R2	TNTC	TNTC	TNTC	125		
Animal No: 8							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	121	2284313725	9.36
	R2	TNTC	TNTC	TNTC	112		
Animal No: 9							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	51	9	43750000	7.64
	R2	TNTC	TNTC	54	3		
Animal No: 10							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	113	1288888889	9.11
	R2	TNTC	TNTC	TNTC	119		

R= Replicate, TNTC= Too Numerous To Count

APPENDIX –5: INDIVIDUAL ANIMAL INTESTINAL MICRO FLORA BEFORE TREATMENT Contd.

Name of the organism: Bifidobacterium

Group : G2			Treatment : Low Dose				
Sex : Male			Dose: 0.205 g/kg b.w.				
Animal No: 11							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	250	3746376812	9.57
	R2	TNTC	TNTC	TNTC	267		
Animal No: 12							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	207	15	212244898	8.33
	R2	TNTC	TNTC	209	25		
Animal No: 13							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	70	9	Nil	35750000	7.55
	R2	TNTC	73	5	Nil		
Animal No: 14							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	33	6166666667	9.79
	R2	TNTC	TNTC	TNTC	41		
Animal No: 15							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	113	13	1	14101123.6	7.15
	R2	TNTC	138	17	2		
Animal No: 16							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	271	6021276596	9.78
	R2	TNTC	TNTC	TNTC	295		
Animal No: 17							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	48	437500000	8.64
	R2	TNTC	TNTC	TNTC	36		
Animal No: 18							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	107	13	130000000	8.11
	R2	TNTC	TNTC	101	7		
Animal No: 19							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	99	9	130985915.5	8.12
	R2	TNTC	TNTC	87	9		
Animal No: 20							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	48	5	116279069.8	8.07
	R2	TNTC	TNTC	52	7		

R= Replicate, TNTC= Too Numerous To Count

APPENDIX – 5: INDIVIDUAL ANIMAL INTESTINAL MICRO FLORA BEFORE TREATMENT Contd.

Name of the organism: Bifidobacterium

Group : G3		Treatment : High Dose					
Sex : Male		Dose: 4.00 g/kg b.w.					
Animal No: 21							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	157	16	158000000	8.20
	R2	TNTC	TNTC	159	19		
Animal No: 22							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	60	5	37847222.22	7.58
	R2	TNTC	TNTC	49	4		
Animal No: 23							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	93	466666667	9.67
	R2	TNTC	TNTC	TNTC	103		
Animal No: 24							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	48	819672131.1	8.91
	R2	TNTC	TNTC	TNTC	52		
Animal No: 25							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	35	3	23529411.76	7.37
	R2	TNTC	TNTC	29	3		
Animal No: 26							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	26	325000000	8.51
	R2	TNTC	TNTC	TNTC	26		
Animal No: 27							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	15	285714285.7	8.46
	R2	TNTC	TNTC	TNTC	17		
Animal No: 28							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	48	746153846.2	8.87
	R2	TNTC	TNTC	TNTC	49		
Animal No: 29							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	22	650000000	8.81
	R2	TNTC	TNTC	TNTC	17		
Animal No: 30							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	56	4	72535211.27	7.86
	R2	TNTC	TNTC	47	3		

R= Replicate, TNTC= Too Numerous To Count

APPENDIX –5: INDIVIDUAL ANIMAL INTESTINAL MICRO FLORA BEFORE TREATMENT Contd.

Name of the organism: Lactobacillus

Group : G1		Treatment : Vehicle Control					
Sex : Male		Dose: 0 g/kg b.w.					
Animal No: 1							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	106	12	383333333.3	8.58
	R2	TNTC	TNTC	101	14		
Animal No: 2							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	102	19	200000000	8.30
	R2	TNTC	TNTC	90	13		
Animal No: 3							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	26	1425000000	9.15
	R2	TNTC	TNTC	TNTC	31		
Animal No: 4							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	30	195205479.5	8.29
	R2	TNTC	TNTC	TNTC	27		
Animal No: 5							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	60	7	115555555.6	8.06
	R2	TNTC	TNTC	44	8		
Animal No: 6							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	278	4450819672	9.65
	R2	TNTC	TNTC	TNTC	265		
Animal No: 7							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	10	2	14130434.78	7.15
	R2	TNTC	TNTC	16	Nil		
Animal No: 8							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	65	6	132352941.2	8.12
	R2	TNTC	TNTC	70	9		
Animal No: 9							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	55	9	47916666.67	7.68
	R2	TNTC	TNTC	60	6		
Animal No: 10							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	36	3	Nil	4111111.111	6.61
	R2	TNTC	38	5	1		

R= Replicate, TNTC= Too Numerous To Count

APPENDIX –5: INDIVIDUAL ANIMAL INTESTINAL MICRO FLORA BEFORE TREATMENT Contd.

Name of the organism: Lactobacillus

Group : G2		Treatment : Low Dose					
Sex : Male		Dose: 0.205 g/kg b.w.					
Animal No: 11							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	39	550724637.7	8.74
	R2	TNTC	TNTC	TNTC	37		
Animal No: 12							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	94	11	1	Nil	1020408.163	6.01
	R2	106	9	1	Nil		
Animal No: 13							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	27	2	Nil	Nil	1225000	6.09
	R2	22	4	Nil	Nil		
Animal No: 14							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	95	10	1458333333	9.16
	R2	TNTC	TNTC	80	4		
Animal No: 15							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	21	4	3	Nil	269662.9213	5.43
	R2	27	6	Nil	Nil		
Animal No: 16							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	130	15	282978723.4	8.45
	R2	TNTC	TNTC	136	12		
Animal No: 17							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	103	12	1	10052083.33	7.00
	R2	TNTC	90	5	1		
Animal No: 18							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	97	5	118750000	8.07
	R2	TNTC	TNTC	93	4		
Animal No: 19							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	26	3	38732394.37	7.59
	R2	TNTC	TNTC	29	2		
Animal No: 20							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	168	9	1	39534883.72	7.60
	R2	TNTC	172	16	3		

R= Replicate, TNTC= Too Numerous To Count

APPENDIX –5: INDIVIDUAL ANIMAL INTESTINAL MICRO FLORA BEFORE TREATMENT Contd.

Name of the organism: Lactobacillus

Group : G3		Treatment : High Dose					
Sex : Male		Dose: 4.00 g/kg b.w.					
Animal No: 21							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	85	8	80500000	7.91
	R2	TNTC	TNTC	76	9		
Animal No: 22							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	57	3	36458333.33	7.56
	R2	TNTC	TNTC	48	5		
Animal No: 23							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	50	5	1	22142857.14	7.35
	R2	TNTC	43	10	1		
Animal No: 24							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	55	5	2	8442622.951	6.93
	R2	TNTC	48	4	Nil		
Animal No: 25							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	30	3	Nil	1911764.706	6.28
	R2	TNTC	22	4	Nil		
Animal No: 26							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	75	9	89375000	7.95
	R2	TNTC	TNTC	68	14		
Animal No: 27							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	24	410714285.7	8.61
	R2	TNTC	TNTC	TNTC	22		
Animal No: 28							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	60	2	80000000	7.90
	R2	TNTC	TNTC	44	8		
Animal No: 29							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	24	4	73333333.33	7.87
	R2	TNTC	TNTC	20	4		
Animal No: 30							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	21	1	1408450.704	6.15
	R2	TNTC	TNTC	12	1		

R= Replicate, TNTC= Too Numerous To Count

APPENDIX – 5: INDIVIDUAL ANIMAL INTESTINAL MICRO FLORA BEFORE TREATMENT Contd.

Name of the organism: Enterococcus

Group : G1		Treatment : Vehicle Control					
Sex : Male		Dose: 0 g/kg b.w.					
Animal No: 1							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	224	29	2	83518518.52	7.92
	R2	TNTC	227	26	8		
Animal No: 2							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	42	5	104166666.7	8.02
	R2	TNTC	TNTC	58	9		
Animal No: 3							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	94	14	445000000	8.65
	R2	TNTC	TNTC	84	3		
Animal No: 4							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	81	606164383.6	8.78
	R2	TNTC	TNTC	TNTC	96		
Animal No: 5							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	180	17	413333333.3	8.62
	R2	TNTC	TNTC	192	14		
Animal No: 6							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	287	4795081967	9.68
	R2	TNTC	TNTC	TNTC	298		
Animal No: 7							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	166	1891304348	9.28
	R2	TNTC	TNTC	TNTC	182		
Animal No: 8							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	57	5	128431372.5	8.11
	R2	TNTC	TNTC	74	14		
Animal No: 9							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	75	625000000	8.80
	R2	TNTC	TNTC	TNTC	75		
Animal No: 10							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	133	1400000000	9.15
	R2	TNTC	TNTC	TNTC	119		

R= Replicate, TNTC= Too Numerous To Count

APPENDIX – 5: INDIVIDUAL ANIMAL INTESTINAL MICRO FLORA BEFORE TREATMENT Contd.

Name of the organism: Enterococcus

Group : G2		Treatment : Low Dose					
Sex : Male		Dose: 0.205 g/kg b.w.					
Animal No: 11							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	65	992753623.2	9.00
	R2	TNTC	TNTC	TNTC	72		
Animal No: 12							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	109	9	114285714.3	8.06
	R2	TNTC	TNTC	115	10		
Animal No: 13							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	189	24	975000000	8.99
	R2	TNTC	TNTC	201	23		
Animal No: 14							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	245	26	3758333333	9.57
	R2	TNTC	TNTC	206	23		
Animal No: 15							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	236	19	3	27022471.91	7.43
	R2	TNTC	245	24	1		
Animal No: 16							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	246	29	535106383	8.73
	R2	TNTC	TNTC	257	21		
Animal No: 17							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	60	593750000	8.77
	R2	TNTC	TNTC	TNTC	54		
Animal No: 18							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	203	2487500000	9.40
	R2	TNTC	TNTC	TNTC	195		
Animal No: 19							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	284	3936619718	9.60
	R2	TNTC	TNTC	TNTC	275		
Animal No: 20							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	69	1534883721	9.19
	R2	TNTC	TNTC	TNTC	63		

R= Replicate, TNTC= Too Numerous To Count

APPENDIX – 5: INDIVIDUAL ANIMAL INTESTINAL MICRO FLORA BEFORE TREATMENT Contd.

Name of the organism: Enterococcus

Group : G3			Treatment : High Dose				
Sex : Male			Dose: 4.00 g/kg b.w.				
Animal No: 21							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	62	7	2	7900000	6.90
	R2	TNTC	96	13	1		
Animal No: 22							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	33	4	1	2604166.667	6.42
	R2	TNTC	42	5	Nil		
Animal No: 23							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	77	11	380952381	8.58
	R2	TNTC	TNTC	83	9		
Animal No: 24							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	44	5	77868852.46	7.89
	R2	TNTC	TNTC	51	5		
Animal No: 25							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	89	9	1	6838235.294	6.83
	R2	TNTC	97	8	1		
Animal No: 26							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	28	375000000	8.57
	R2	TNTC	TNTC	TNTC	32		
Animal No: 27							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	86	1607142857	9.21
	R2	TNTC	TNTC	TNTC	94		
Animal No: 28							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	59	938461538.5	8.97
	R2	TNTC	TNTC	TNTC	63		
Animal No: 29							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	72	2433333333	9.39
	R2	TNTC	TNTC	TNTC	74		
Animal No: 30							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	70	10	95774647.89	7.98
	R2	TNTC	TNTC	66	4		

R= Replicate, TNTC= Too Numerous To Count

APPENDIX – 5: INDIVIDUAL ANIMAL INTESTINAL MICRO FLORA BEFORE TREATMENT Contd.

Name of the organism: Enterobacterium

Group : G1		Treatment : Vehicle Control					
Sex : Male		Dose: 0 g/kg b.w.					
Animal No: 1							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	265	22	3	Nil	9148148.148	6.96
	R2	229	26	4	Nil		
Animal No: 2							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	109	11	Nil	Nil	2020833.333	6.31
	R2	85	10	2	Nil		
Animal No: 3							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	192	9475000000	9.98
	R2	TNTC	TNTC	TNTC	187		
Animal No: 4							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	162	16	4	11267123.29	7.05
	R2	TNTC	167	18	2		
Animal No: 5							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	22	1	Nil	6222222.222	6.79
	R2	TNTC	34	4	Nil		
Animal No: 6							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	112	18	1	26229508.2	7.42
	R2	TNTC	150	14	4		
Animal No: 7							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	245	2793478261	9.45
	R2	TNTC	TNTC	TNTC	269		
Animal No: 8							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	225	4588235294	9.66
	R2	TNTC	TNTC	TNTC	243		
Animal No: 9							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	67	6	50833333.33	7.71
	R2	TNTC	TNTC	55	5		
Animal No: 10							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	253	2861111111	9.46
	R2	TNTC	TNTC	TNTC	262		

R= Replicate, TNTC= Too Numerous To Count

APPENDIX - 5 INDIVIDUAL ANIMAL INTESTINAL MICRO FLORA BEFORE TREATMENT Contd.

Name of the organism: Enterobacterium

Group : G2		Treatment : Low Dose					
Sex : Male		Dose: 0.205 g/kg b.w.					
Animal No: 11							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	91	1340579710	9.13
	R2	TNTC	TNTC	TNTC	94		
Animal No: 12							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	49	474489795.9	8.68
	R2	TNTC	TNTC	TNTC	44		
Animal No: 13							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	69	6	1	34000000	7.53
	R2	TNTC	67	2	Nil		
Animal No: 14							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	43	7666666667	9.88
	R2	TNTC	TNTC	TNTC	49		
Animal No: 15							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	149	10	4	16516853.93	7.22
	R2	TNTC	145	8	Nil		
Animal No: 16							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	38	882978723.4	8.95
	R2	TNTC	TNTC	TNTC	45		
Animal No: 17							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	87	958333333.3	8.98
	R2	TNTC	TNTC	TNTC	97		
Animal No: 18							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	76	6	1	7812500	6.89
	R2	TNTC	49	6	1		
Animal No: 19							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	176	4	237323943.7	8.38
	R2	TNTC	TNTC	161	5		
Animal No: 20							
		10^-1	10^-2	10^-3	10^-4	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	74	1534883721	9.19
	R2	TNTC	TNTC	TNTC	58		

R= Replicate, TNTC= Too Numerous To Count

APPENDIX - 5 INDIVIDUAL ANIMAL INTESTINAL MICRO FLORA BEFORE TREATMENT Contd.

Name of the organism: Enterobacterium

Group : G3			Treatment : High Dose				
Sex : Male			Dose: 4.00 g/kg b.w.				
Animal No: 21							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	252	26	Nil	24900000	7.40
	R2	TNTC	246	21	2		
Animal No: 22							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	167	17	1	11805555.56	7.07
	R2	TNTC	173	16	2		
Animal No: 23							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	88	4523809524	9.66
	R2	TNTC	TNTC	TNTC	102		
Animal No: 24							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	132	10	230327868.9	8.36
	R2	TNTC	TNTC	149	10		
Animal No: 25							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	92	9	1	6911764.706	6.84
	R2	TNTC	96	7	1		
Animal No: 26							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	101	14	2	12625000	7.10
	R2	TNTC	101	16	1		
Animal No: 27							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	70	7	3	13928571.43	7.14
	R2	TNTC	86	15	3		
Animal No: 28							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	124	19	180000000	8.26
	R2	TNTC	TNTC	110	10		
Animal No: 29							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	286	9716666667	9.99
	R2	TNTC	TNTC	TNTC	297		
Animal No: 30							
		10-1	10-2	10-3	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	278	3971830986	9.60
	R2	TNTC	TNTC	TNTC	286		

R= Replicate, TNTC= Too Numerous To Count

APPENDIX –6: INDIVIDUAL ANIMAL INTESTINAL MICRO FLORA AFTER TREATMENT

Name of the organism: Bifidobacterium

Group : G1		Treatment : Vehicle Control					
Sex : Male		Dose: 0 g/kg b.w.					
Animal No: 1							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	193	19	Nil	Nil	2432926.829	6.39
	R2	206	19	Nil	Nil		
Animal No: 2							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	44	4	7558139.535	6.88
	R2	TNTC	TNTC	47	4		
Animal No: 3							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	297	1899350649	9.28
	R2	TNTC	TNTC	TNTC	288		
Animal No: 4							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	65	369318181.8	8.57
	R2	TNTC	TNTC	TNTC	65		
Animal No: 5							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	297	2878787879	9.46
	R2	TNTC	TNTC	TNTC	273		
Animal No: 6							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	62	6	143333333.3	8.16
	R2	TNTC	TNTC	67	7		
Animal No: 7							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	142	1084070796	9.04
	R2	TNTC	TNTC	TNTC	103		
Animal No: 8							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	295	8083333333	9.91
	R2	TNTC	TNTC	TNTC	287		
Animal No: 9							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	42	401869158.9	8.60
	R2	TNTC	TNTC	TNTC	44		
Animal No: 10							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	121	12	211475409.8	8.33
	R2	TNTC	TNTC	137	13		

R= Replicate, TNTC= Too Numerous To Count

APPENDIX - 6: INDIVIDUAL ANIMAL INTESTINAL MICRO FLORA AFTER TREATMENT Contd.

Name of the organism: Bifidobacterium

Group : G2		Treatment : Low Dose					
Sex : Male		Dose: 0.205 g/kg b.w.					
Animal No: 11							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	74	73333333.3	8.87
	R2	TNTC	TNTC	TNTC	102		
Animal No: 12							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	29	36666666.7	8.56
	R2	TNTC	TNTC	TNTC	26		
Animal No: 13							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	99	1090000000	9.04
	R2	TNTC	TNTC	TNTC	119		
Animal No: 14							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	56	5	134883720.9	8.13
	R2	TNTC	TNTC	60	2		
Animal No: 15							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	35	421348314.6	8.62
	R2	TNTC	TNTC	TNTC	40		
Animal No: 16							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	55	2403846154	9.38
	R2	TNTC	TNTC	TNTC	70		
Animal No: 17							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	120	6190476190	9.79
	R2	TNTC	TNTC	TNTC	140		
Animal No: 18							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	134	2286885246	9.36
	R2	TNTC	TNTC	TNTC	145		
Animal No: 19							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	157	17	33333333.3	8.52
	R2	TNTC	TNTC	149	13		
Animal No: 20							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	97	8	270270270.3	8.43
	R2	TNTC	TNTC	103	12		

R= Replicate, TNTC= Too Numerous To Count

APPENDIX - 6: INDIVIDUAL ANIMAL INTESTINAL MICRO FLORA AFTER TREATMENT Contd.

Name of the organism: Bifidobacterium

Group : G3		Treatment : High Dose					
Sex : Male		Dose: 4.00 g/kg b.w.					
Animal No: 21							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	224	25	914000000	8.96
	R2	TNTC	TNTC	233	23		
Animal No: 22							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	257	1727891156	9.24
	R2	TNTC	TNTC	TNTC	251		
Animal No: 23							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	205	2494318182	9.40
	R2	TNTC	TNTC	TNTC	234		
Animal No: 24							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	250	2239130435	9.35
	R2	TNTC	TNTC	TNTC	265		
Animal No: 25							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	297	30	4	206785714.3	8.32
	R2	TNTC	282	35	3		
Animal No: 26							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	245	26	167320261.4	8.22
	R2	TNTC	TNTC	267	22		
Animal No: 27							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	203	25	853846153.8	8.93
	R2	TNTC	TNTC	241	21		
Animal No: 28							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	234	17	389230769.2	8.59
	R2	TNTC	TNTC	272	22		
Animal No: 29							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	250	26	230476190.5	8.36
	R2	TNTC	TNTC	234	21		
Animal No: 30							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	90	14	2	1864583333	9.27
	R2	TNTC	89	6	1		

R= Replicate, TNTC= Too Numerous To Count

APPENDIX - 6: INDIVIDUAL ANIMAL INTESTINAL MICRO FLORA AFTER TREATMENT Contd.

Name of the organism: Lactobacillus

Group : G1		Treatment : Vehicle Control					
Sex : Male		Dose: 0 g/kg b.w.					
Animal No: 1							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	121	116	1	81707317.07	7.91
	R2	TNTC	125	18	3		
Animal No: 2							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	39	61461794.02	7.79
	R2	TNTC	TNTC	TNTC	35		
Animal No: 3							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	31	3	22727272.73	7.36
	R2	TNTC	TNTC	39	2		
Animal No: 4							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	40	218750000	8.34
	R2	TNTC	TNTC	TNTC	37		
Animal No: 5							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	43	5	40909090.91	7.61
	R2	TNTC	TNTC	38	1		
Animal No: 6							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	72	12	157777777.8	8.20
	R2	TNTC	TNTC	70	8		
Animal No: 7							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	63	7	55309734.51	7.74
	R2	TNTC	TNTC	62	4		
Animal No: 8							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	32	986111111.1	8.99
	R2	TNTC	TNTC	TNTC	39		
Animal No: 9							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	202	17	2	17476635.51	7.24
	R2	TNTC	172	21	2		
Animal No: 10							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	96	1524590164	9.18
	R2	TNTC	TNTC	TNTC	90		

R= Replicate, TNTC= Too Numerous To Count

APPENDIX - 6: INDIVIDUAL ANIMAL INTESTINAL MICRO FLORA AFTER TREATMENT Contd.

Name of the organism: Lactobacillus

Group : G2			Treatment : Low Dose				
Sex : Male			Dose: 0.205 g/kg b.w.				
Animal No: 11							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	40	6	1	4041666.667	6.61
	R2	TNTC	57	3	1		
Animal No: 12							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	80	7	1	10533333.33	7.02
	R2	TNTC	78	9	2		
Animal No: 13							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	39	365000000	8.56
	R2	TNTC	TNTC	TNTC	34		
Animal No: 14							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	70	14	Nil	16511627.91	7.22
	R2	TNTC	72	8	2		
Animal No: 15							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	83	10	Nil	9157303.371	6.96
	R2	TNTC	80	5	Nil		
Animal No: 16							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	23	4	90384615.38	7.96
	R2	TNTC	TNTC	24	2		
Animal No: 17							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	26	3	130952381	8.12
	R2	TNTC	TNTC	29	4		
Animal No: 18							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	50	7	1	10655737.7	7.03
	R2	TNTC	80	5	1		
Animal No: 19							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	37	3	34500000	7.54
	R2	TNTC	TNTC	32	3		
Animal No: 20							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	72	11	1	Nil	2270270.27	6.36
	R2	96	7	Nil	Nil		

R= Replicate, TNTC= Too Numerous To Count

APPENDIX - 6: INDIVIDUAL ANIMAL INTESTINAL MICRO FLORA AFTER TREATMENT Contd.

Name of the organism: Lactobacillus

Group : G3			Treatment : High Dose				
Sex : Male			Dose: 4.00 g/kg b.w.				
Animal No: 21							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	24	3	0	9400000	6.97
	R2	TNTC	23	2	0		
Animal No: 22							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	36	3	19727891.16	7.30
	R2	TNTC	TNTC	22	8		
Animal No: 23							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	35	2	40909090.91	7.61
	R2	TNTC	TNTC	37	1		
Animal No: 24							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	75	9	70434782.61	7.85
	R2	TNTC	TNTC	87	7		
Animal No: 25							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	51	4	Nil	36428571.43	7.56
	R2	TNTC	51	6	Nil		
Animal No: 26							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	29	3	20588235.29	7.31
	R2	TNTC	TNTC	34	4		
Animal No: 27							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	72	7	0	26346153.85	7.42
	R2	TNTC	65	8	0		
Animal No: 28							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	111	12	178461538.5	8.25
	R2	TNTC	TNTC	121	11		
Animal No: 29							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	69	7	68571428.57	7.84
	R2	TNTC	TNTC	75	6		
Animal No: 30							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	32	2	Nil	6354166.667	6.80
	R2	TNTC	29	3	Nil		

R= Replicate, TNTC= Too Numerous To Count

APPENDIX - 6: INDIVIDUAL ANIMAL INTESTINAL MICRO FLORA AFTER TREATMENT Contd.

Name of the organism: Enterococcus

Group : G1		Treatment : Vehicle Control					
Sex : Male		Dose: 0 g/kg b.w.					
Animal No: 1							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	180	18	2	22743902.44	7.36
	R2	TNTC	193	12	2		
Animal No: 2							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	112	182724252.5	8.26
	R2	TNTC	TNTC	TNTC	108		
Animal No: 3							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	245	1519480519	9.18
	R2	TNTC	TNTC	TNTC	223		
Animal No: 4							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	103	622159090.9	8.79
	R2	TNTC	TNTC	TNTC	116		
Animal No: 5							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	123	1323232323	9.12
	R2	TNTC	TNTC	TNTC	139		
Animal No: 6							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	123	7	267777777.8	8.43
	R2	TNTC	TNTC	118	12		
Animal No: 7							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	131	1146017699	9.06
	R2	TNTC	TNTC	TNTC	128		
Animal No: 8							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	152	12	425000000	8.63
	R2	TNTC	TNTC	154	18		
Animal No: 9							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	231	209813084.1	8.32
	R2	TNTC	TNTC	TNTC	218		
Animal No: 10							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	144	2245901639	9.35
	R2	TNTC	TNTC	TNTC	130		

APPENDIX - 6: INDIVIDUAL ANIMAL INTESTINAL MICRO FLORA AFTER TREATMENT Contd.

Name of the organism: Enterococcus

Group : G2		Treatment : Low Dose					
Sex : Male		Dose: 0.205 g/kg b.w.					
Animal No: 11							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	249	21	2	21833333.33	7.34
	R2	TNTC	275	26	3		
Animal No: 12							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	233	21	312000000	8.49
	R2	TNTC	TNTC	235	18		
Animal No: 13							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	260	2450000000	9.39
	R2	TNTC	TNTC	TNTC	230		
Animal No: 14							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	224	5267441860	9.72
	R2	TNTC	TNTC	TNTC	229		
Animal No: 15							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	179	12	1	20674157.3	7.32
	R2	TNTC	189	18	2		
Animal No: 16							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	178	8	613461538.5	8.79
	R2	TNTC	TNTC	141	19		
Animal No: 17							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	269	12976190476	10.11
	R2	TNTC	TNTC	TNTC	276		
Animal No: 18							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	249	23	403278688.5	8.61
	R2	TNTC	TNTC	243	24		
Animal No: 19							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	140	74	140000000	8.15
	R2	TNTC	TNTC	140	85		
Animal No: 20							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	211	6162162162	9.79
	R2	TNTC	TNTC	TNTC	245		

R= Replicate, TNTC= Too Numerous To Count

APPENDIX - 6: INDIVIDUAL ANIMAL INTESTINAL MICRO FLORA AFTER TREATMENT Contd.

Name of the organism: Enterococcus

Group : G3			Treatment : High Dose				
Sex : Male			Dose: 4.00 g/kg b.w.				
Animal No: 21							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	187	23	4	72600000	7.86
	R2	TNTC	176	14	1		
Animal No: 22							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	60	12	2	4183673.469	6.62
	R2	TNTC	63	9	2		
Animal No: 23							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	200	23	6	24602272.73	7.39
	R2	TNTC	233	33	4		
Animal No: 24							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	233	26	1	20347826.09	7.31
	R2	TNTC	235	25	2		
Animal No: 25							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	31	2	Nil	17857142.86	7.25
	R2	TNTC	19	3	Nil		
Animal No: 26							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	269	1673202614	9.22
	R2	TNTC	TNTC	TNTC	243		
Animal No: 27							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	84	14	2	30769230.77	7.49
	R2	TNTC	76	11	3		
Animal No: 28							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	259	4038461538	9.61
	R2	TNTC	TNTC	TNTC	266		
Animal No: 29							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	169	16	133333333.3	8.12
	R2	TNTC	TNTC	189	12		
Animal No: 30							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	249	36	3	54895833.33	7.74
	R2	TNTC	278	19	3		

R= Replicate, TNTC= Too Numerous To Count

**APPENDIX - 6: INDIVIDUAL ANIMAL INTESTINAL MICRO FLORA AFTER
TREATMENT Contd.**

Name of the organism: Enterobacterium

Group : G1		Treatment : Vehicle Control					
Sex : Male		Dose: 0 g/kg b.w.					
Animal No: 1							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	147	13	2	14634146.34	7.17
	R2	TNTC	153	11	Nil		
Animal No: 2							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	91	137043189.4	8.14
	R2	TNTC	TNTC	TNTC	74		
Animal No: 3							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	87	551948051.9	8.74
	R2	TNTC	TNTC	TNTC	83		
Animal No: 4							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	95	9	Nil	5511363.636	6.74
	R2	TNTC	99	7	Nil		
Animal No: 5							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	140	16	1	14242424.24	7.15
	R2	TNTC	142	15	5		
Animal No: 6							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	281	29	614444444.4	8.79
	R2	TNTC	TNTC	272	26		
Animal No: 7							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	92	836283185.8	8.92
	R2	TNTC	TNTC	TNTC	97		
Animal No: 8							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	62	1708333333	9.23
	R2	TNTC	TNTC	TNTC	61		
Animal No: 9							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	265	26	240186915.9	8.38
	R2	TNTC	TNTC	249	22		
Animal No: 10							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	84	1385245902	9.14
	R2	TNTC	TNTC	TNTC	85		

R= Replicate, TNTC= Too Numerous To Count

**APPENDIX - 6: INDIVIDUAL ANIMAL INTESTINAL MICRO FLORA AFTER
TREATMENT Contd.**

Name of the organism: Enterobacterium

Group : G2			Treatment : Low Dose				
Sex : Male			Dose: 0.205 g/kg b.w.				
Animal No: 11							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	235	26	2	19375000	7.29
	R2	TNTC	230	27	3		
Animal No: 12							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	140	1933333333	9.29
	R2	TNTC	TNTC	TNTC	150		
Animal No: 13							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	256	25	255500000	8.41
	R2	TNTC	TNTC	255	42		
Animal No: 14							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	245	29	1	55697674.42	7.75
	R2	TNTC	234	23	5		
Animal No: 15							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	265	16	289325842.7	8.46
	R2	TNTC	TNTC	250	28		
Animal No: 16							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	298	10903846154	10.04
	R2	TNTC	TNTC	TNTC	269		
Animal No: 17							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	85	4285714286	9.63
	R2	TNTC	TNTC	TNTC	95		
Animal No: 18							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	196	3024590164	9.48
	R2	TNTC	TNTC	TNTC	173		
Animal No: 19							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	288	29	2	28500000	7.45
	R2	TNTC	282	27	3		
Animal No: 20							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	198	18	532432432.4	8.73
	R2	TNTC	TNTC	196	26		

R= Replicate, TNTC= Too Numerous To Count

APPENDIX - 6: INDIVIDUAL ANIMAL INTESTINAL MICRO FLORA AFTER TREATMENT Contd.

Name of the organism: Enterobacterium

Group : G3		Treatment : High Dose					
Sex : Male		Dose: 4.00 g/kg b.w.					
Animal No: 21							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	82	13	3	32400000	7.51
	R2	TNTC	80	11	4		
Animal No: 22							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	60	425170068	8.63
	R2	TNTC	TNTC	TNTC	65		
Animal No: 23							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	127	13	1647727273	9.22
	R2	TNTC	TNTC	163	17		
Animal No: 24							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	195	1613043478	9.21
	R2	TNTC	TNTC	TNTC	176		
Animal No: 25							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	TNTC	78	5642857143	9.75
	R2	TNTC	TNTC	TNTC	80		
Animal No: 26							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	95	10	63071895.42	7.80
	R2	TNTC	TNTC	98	15		
Animal No: 27							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	102	10	380769230.8	8.58
	R2	TNTC	TNTC	96	12		
Animal No: 28							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	142	26	228461538.5	8.36
	R2	TNTC	TNTC	155	15		
Animal No: 29							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	TNTC	84	8	77142857.14	7.89
	R2	TNTC	TNTC	78	6		
Animal No: 30							
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	Final Count per gram	Bacterial colony log value
Replicate	R1	TNTC	55	5	Nil	11875000	7.07
	R2	TNTC	59	5	Nil		

R= Replicate, TNTC= Too Numerous To Count

APPENDIX – 7: INDIVIDUAL ANIMAL CULTURE RESPONSE, BIOCHEMICAL TESTS, IDENTIFICATION RESULTS

Bifidobacterium

Before treatment

Animal No.	Growth on <i>Bifido</i> <i>bacterium</i> selective agar	Gram staining, Morphology	Motility	Biochemical Tests		
				Bile esculin	Oxidase	Catalase
1	Present	Positive , Curved	Non Motile	Positive	Negative	Negative
2	Present	Positive , Curved	Non Motile	Positive	Negative	Negative
3	Present	Positive , Curved	Non Motile	Positive	Negative	Negative
4	Present	Positive , Y Shaped	Non Motile	Positive	Negative	Negative
5	Present	Positive , Y Shaped	Non Motile	Positive	Negative	Negative
6	Present	Positive , Y Shaped	Non Motile	Positive	Negative	Negative
7	Present	Positive , L Shaped	Non Motile	Positive	Negative	Negative
8	Present	Positive , Y Shaped	Non Motile	Positive	Negative	Negative
9	Present	Positive , L Shaped	Non Motile	Positive	Negative	Negative
10	Present	Positive , L Shaped	Non Motile	Positive	Negative	Negative
11	Present	Positive , Curved	Non Motile	Positive	Negative	Negative
12	Present	Positive , L Shaped	Non Motile	Positive	Negative	Negative
13	Present	Positive , Y Shaped	Non Motile	Positive	Negative	Negative
14	Present	Positive , Curved	Non Motile	Positive	Negative	Negative
15	Present	Positive , L Shaped	Non Motile	Positive	Negative	Negative
16	Present	Positive , Y Shaped	Non Motile	Positive	Negative	Negative
17	Present	Positive , Y Shaped	Non Motile	Positive	Negative	Negative
18	Present	Positive , L Shaped	Non Motile	Positive	Negative	Negative
19	Present	Positive , Curved	Non Motile	Positive	Negative	Negative
20	Present	Positive , Curved	Non Motile	Positive	Negative	Negative
21	Present	Positive , Curved	Non Motile	Positive	Negative	Negative
22	Present	Positive , L Shaped	Non Motile	Positive	Negative	Negative
23	Present	Positive , Y Shaped	Non Motile	Positive	Negative	Negative
24	Present	Positive , L Shaped	Non Motile	Positive	Negative	Negative
25	Present	Positive , L Shaped	Non Motile	Positive	Negative	Negative
26	Present	Positive , Y Shaped	Non Motile	Positive	Negative	Negative
27	Present	Positive , L Shaped	Non Motile	Positive	Negative	Negative
28	Present	Positive , L Shaped	Non Motile	Positive	Negative	Negative
29	Present	Positive , L Shaped	Non Motile	Positive	Negative	Negative
30	Present	Positive , L Shaped	Non Motile	Positive	Negative	Negative

APPENDIX – 7: INDIVIDUAL ANIMAL CULTURE RESPONSE, BIOCHEMICAL TESTS, IDENTIFICATION RESULTS Contd.

Lactobacillus
Before treatment

Animal No.	Growth on <i>Lactobacillus</i> selective agar	Gram staining, Morphology	Motility	Biochemical Tests	
				Oxidase	Catalase
1	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
2	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
3	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
4	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
5	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
6	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
7	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
8	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
9	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
10	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
11	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
12	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
13	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
14	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
15	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
16	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
17	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
18	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
19	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
20	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
21	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
22	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
23	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
24	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
25	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
26	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
27	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
28	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
29	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
30	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative

APPENDIX – 7: INDIVIDUAL ANIMAL CULTURE RESPONSE, BIOCHEMICAL TESTS, IDENTIFICATION RESULTS Contd.

Enterococcus
Before treatment

Animal No.	Growth on <i>Enterococcus</i> selective agar	Gram staining, Morphology	Bile esculin
1	Dark red colonies	Positive, Cocci in pairs	Positive
2	Dark red colonies	Positive, Cocci in pairs	Positive
3	Dark red colonies	Positive, Cocci in pairs	Positive
4	Dark red colonies	Positive, Cocci in pairs	Positive
5	Dark red colonies	Positive, Cocci in pairs	Positive
6	Dark red colonies	Positive, Cocci in pairs	Positive
7	Dark red colonies	Positive, Cocci in pairs	Positive
8	Dark red colonies	Positive, Cocci in pairs	Positive
9	Dark red colonies	Positive, Cocci in pairs	Positive
10	Dark red colonies	Positive, Cocci in pairs	Positive
11	Dark red colonies	Positive, Cocci in pairs	Positive
12	Dark red colonies	Positive, Cocci in pairs	Positive
13	Dark red colonies	Positive, Cocci in pairs	Positive
14	Dark red colonies	Positive, Cocci in pairs	Positive
15	Dark red colonies	Positive, Cocci in pairs	Positive
16	Dark red colonies	Positive, Cocci in pairs	Positive
17	Dark red colonies	Positive, Cocci in pairs	Positive
18	Dark red colonies	Positive, Cocci in pairs	Positive
19	Dark red colonies	Positive, Cocci in pairs	Positive
20	Dark red colonies	Positive, Cocci in pairs	Positive
21	Dark red colonies	Positive, Cocci in pairs	Positive
22	Dark red colonies	Positive, Cocci in pairs	Positive
23	Dark red colonies	Positive, Cocci in pairs	Positive
24	Dark red colonies	Positive, Cocci in pairs	Positive
25	Dark red colonies	Positive, Cocci in pairs	Positive
26	Dark red colonies	Positive, Cocci in pairs	Positive
27	Dark red colonies	Positive, Cocci in pairs	Positive
28	Dark red colonies	Positive, Cocci in pairs	Positive
29	Dark red colonies	Positive, Cocci in pairs	Positive
30	Dark red colonies	Positive, Cocci in pairs	Positive

APPENDIX – 7: INDIVIDUAL ANIMAL CULTURE RESPONSE, BIOCHEMICAL TESTS, IDENTIFICATION RESULTS Contd.

Enterobacter
Before Treatment

Animal No.	Growth on EMB agar	Biochemical Tests					
		Indole	Methyl red	Voges-Proskauer	Citrate	Triple Sugar Iron	Urease
1	Metallic sheen	—	—	—	—	—	—
2	No Metallic sheen	Negative	Negative	Positive	Positive	A/A, Gas	Negative
3	No Metallic sheen	Negative	Negative	Positive	Positive	A/A, Gas	Negative
4	Metallic sheen	—	—	—	—	—	—
5	No Metallic sheen	Negative	Positive	Negative	Positive	A/A, Gas +H ₂ S	Positive
6	No Metallic sheen	Negative	Negative	Positive	Positive	A/A, Gas	Negative
7	Metallic sheen	—	—	—	—	—	—
8	Metallic sheen	—	—	—	—	—	—
9	Metallic sheen	—	—	—	—	—	—
10	No Metallic sheen	Negative	Negative	Positive	Positive	A/A, Gas	Negative
11	No Metallic sheen	Negative	Positive	Negative	Positive	A/A, Gas +H ₂ S	Positive
12	Metallic sheen	—	—	—	—	—	—
13	Metallic sheen	—	—	—	—	—	—
14	Metallic sheen	—	—	—	—	—	—
15	Metallic sheen	—	—	—	—	—	—
16	Metallic sheen	—	—	—	—	—	—
17	No Metallic sheen	Negative	Negative	Positive	Positive	A/A, Gas	Negative
18	No Metallic sheen	Negative	Positive	Negative	Positive	A/A, Gas +H ₂ S	Positive
19	Metallic sheen	—	—	—	—	—	—
20	Metallic sheen	—	—	—	—	—	—
21	No Metallic sheen	Negative	Negative	Positive	Positive	A/A, Gas	Negative
22	Metallic sheen	—	—	—	—	—	—
23	Metallic sheen	—	—	—	—	—	—
24	No Metallic sheen	Negative	Positive	Negative	Positive	A/A, Gas +H ₂ S	Positive
25	No Metallic sheen	Negative	Negative	Positive	Positive	A/A, Gas	Negative
26	Metallic sheen	—	—	—	—	—	—
27	Metallic sheen	—	—	—	—	—	—
28	No Metallic sheen	Negative	Negative	Positive	Positive	A/A, Gas	Negative
29	Metallic sheen	—	—	—	—	—	—
30	Metallic sheen	—	—	—	—	—	—

APPENDIX – 7: INDIVIDUAL ANIMAL CULTURE RESPONSE, BIOCHEMICAL TESTS, IDENTIFICATION RESULTS Contd.

Bifidobacterium

After treatment

Animal No.	Growth on <i>Bifido</i> <i>bacterium</i> selective agar	Gram staining, Morphology	Motility	Biochemical Tests		
				Bile esculin	Oxidase	Catalase
1	Present	Positive , L Shaped	Non Motile	Positive	Negative	Negative
2	Present	Positive , Curved	Non Motile	Positive	Negative	Negative
3	Present	Positive , Curved	Non Motile	Positive	Negative	Negative
4	Present	Positive , Y Shaped	Non Motile	Positive	Negative	Negative
5	Present	Positive , Y Shaped	Non Motile	Positive	Negative	Negative
6	Present	Positive , Curved	Non Motile	Positive	Negative	Negative
7	Present	Positive , Curved	Non Motile	Positive	Negative	Negative
8	Present	Positive , Curved	Non Motile	Positive	Negative	Negative
9	Present	Positive , Y Shaped	Non Motile	Positive	Negative	Negative
10	Present	Positive , Curved	Non Motile	Positive	Negative	Negative
11	Present	Positive , L Shaped	Non Motile	Positive	Negative	Negative
12	Present	Positive , Curved	Non Motile	Positive	Negative	Negative
13	Present	Positive , L Shaped	Non Motile	Positive	Negative	Negative
14	Present	Positive , L Shaped	Non Motile	Positive	Negative	Negative
15	Present	Positive , Y Shaped	Non Motile	Positive	Negative	Negative
16	Present	Positive , L Shaped	Non Motile	Positive	Negative	Negative
17	Present	Positive , Y Shaped	Non Motile	Positive	Negative	Negative
18	Present	Positive , Curved	Non Motile	Positive	Negative	Negative
19	Present	Positive , L Shaped	Non Motile	Positive	Negative	Negative
20	Present	Positive , L Shaped	Non Motile	Positive	Negative	Negative
21	Present	Positive , L Shaped	Non Motile	Positive	Negative	Negative
22	Present	Positive , Curved	Non Motile	Positive	Negative	Negative
23	Present	Positive , L Shaped	Non Motile	Positive	Negative	Negative
24	Present	Positive , Y Shaped	Non Motile	Positive	Negative	Negative
25	Present	Positive , Curved	Non Motile	Positive	Negative	Negative
26	Present	Positive , L Shaped	Non Motile	Positive	Negative	Negative
27	Present	Positive , L Shaped	Non Motile	Positive	Negative	Negative
28	Present	Positive , L Shaped	Non Motile	Positive	Negative	Negative
29	Present	Positive , L Shaped	Non Motile	Positive	Negative	Negative
30	Present	Positive , Curved	Non Motile	Positive	Negative	Negative

APPENDIX – 7: INDIVIDUAL ANIMAL CULTURE RESPONSE, BIOCHEMICAL TESTS, IDENTIFICATION RESULTS Contd.

Lactobacillus
After treatment

Animal No.	Growth on <i>Lactobacillus</i> selective agar	Gram staining, Morphology	Motility	Biochemical Tests	
				Oxidase	Catalase
1	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
2	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
3	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
4	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
5	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
6	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
7	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
8	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
9	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
10	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
11	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
12	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
13	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
14	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
15	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
16	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
17	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
18	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
19	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
20	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
21	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
22	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
23	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
24	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
25	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
26	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
27	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
28	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
29	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative
30	Large white colonies	Positive, Slender Lengthy rods	Non Motile	Negative	Negative

APPENDIX – 7: INDIVIDUAL ANIMAL CULTURE RESPONSE, BIOCHEMICAL TESTS, IDENTIFICATION RESULTS Contd.

Enterococcus
After treatment

Animal No.	Growth on <i>Enterococcus</i> selective agar	Gram staining, Morphology	Bile esculin
1	Dark red colonies	Positive, Cocci in pairs	Positive
2	Dark red colonies	Positive, Cocci in pairs	Positive
3	Dark red colonies	Positive, Cocci in pairs	Positive
4	Dark red colonies	Positive, Cocci in pairs	Positive
5	Dark red colonies	Positive, Cocci in pairs	Positive
6	Dark red colonies	Positive, Cocci in pairs	Positive
7	Dark red colonies	Positive, Cocci in pairs	Positive
8	Dark red colonies	Positive, Cocci in pairs	Positive
9	Dark red colonies	Positive, Cocci in pairs	Positive
10	Dark red colonies	Positive, Cocci in pairs	Positive
11	Dark red colonies	Positive, Cocci in pairs	Positive
12	Dark red colonies	Positive, Cocci in pairs	Positive
13	Dark red colonies	Positive, Cocci in pairs	Positive
14	Dark red colonies	Positive, Cocci in pairs	Positive
15	Dark red colonies	Positive, Cocci in pairs	Positive
16	Dark red colonies	Positive, Cocci in pairs	Positive
17	Dark red colonies	Positive, Cocci in pairs	Positive
18	Dark red colonies	Positive, Cocci in pairs	Positive
19	Dark red colonies	Positive, Cocci in pairs	Positive
20	Dark red colonies	Positive, Cocci in pairs	Positive
21	Dark red colonies	Positive, Cocci in pairs	Positive
22	Dark red colonies	Positive, Cocci in pairs	Positive
23	Dark red colonies	Positive, Cocci in pairs	Positive
24	Dark red colonies	Positive, Cocci in pairs	Positive
25	Dark red colonies	Positive, Cocci in pairs	Positive
26	Dark red colonies	Positive, Cocci in pairs	Positive
27	Dark red colonies	Positive, Cocci in pairs	Positive
28	Dark red colonies	Positive, Cocci in pairs	Positive
29	Dark red colonies	Positive, Cocci in pairs	Positive
30	Dark red colonies	Positive, Cocci in pairs	Positive

APPENDIX – 7: INDIVIDUAL ANIMAL CULTURE RESPONSE, BIOCHEMICAL TESTS, IDENTIFICATION RESULTS Contd.

Enterobacter
After Treatment

Animal No.	Growth on EMB agar	Biochemical Tests					
		Indole	Methyl red	Voges-Proskauer	Citrate	Triple Sugar Iron	Urease
1	Metallic sheen	—	—	—	—	—	—
2	No Metallic sheen	Negative	Negative	Positive	Positive	A/A, Gas	Negative
3	Metallic sheen	—	—	—	—	—	—
4	Metallic sheen	—	—	—	—	—	—
5	Metallic sheen	—	—	—	—	—	—
6	No Metallic sheen	Negative	Positive	Negative	Positive	A/A, Gas +H ₂ S	Positive
7	No Metallic sheen	Negative	Negative	Positive	Positive	A/A, Gas	Negative
8	Metallic sheen	—	—	—	—	—	—
9	Metallic sheen	—	—	—	—	—	—
10	No Metallic sheen	Negative	Negative	Positive	Positive	A/A, Gas	Negative
11	No Metallic sheen	Negative	Negative	Positive	Positive	A/A, Gas	Negative
12	No Metallic sheen	Negative	Positive	Negative	Positive	A/A, Gas +H ₂ S	Positive
13	No Metallic sheen	Negative	Negative	Positive	Positive	A/A, Gas	Negative
14	No Metallic sheen	Negative	Positive	Negative	Positive	A/A, Gas +H ₂ S	Positive
15	No Metallic sheen	Negative	Positive	Negative	Positive	A/A, Gas +H ₂ S	Positive
16	Metallic sheen	—	—	—	—	—	—
17	No Metallic sheen	Negative	Positive	Negative	Positive	A/A, Gas +H ₂ S	Positive
18	Metallic sheen	—	—	—	—	—	—
19	Metallic sheen	—	—	—	—	—	—
20	No Metallic sheen	Negative	Positive	Negative	Positive	A/A, Gas +H ₂ S	Positive
21	Metallic sheen	—	—	—	—	—	—
22	Metallic sheen	—	—	—	—	—	—
23	Metallic sheen	—	—	—	—	—	—
24	No Metallic sheen	Negative	Negative	Positive	Positive	A/A, Gas	Negative
25	No Metallic sheen	Negative	Positive	Negative	Positive	A/A, Gas +H ₂ S	Positive
26	No Metallic sheen	Negative	Positive	Negative	Positive	A/A, Gas +H ₂ S	Positive
27	Metallic sheen	—	—	—	—	—	—
28	Metallic sheen	—	—	—	—	—	—
29	Metallic sheen	—	—	—	—	—	—
30	No Metallic sheen	Negative	Positive	Negative	Positive	A/A, Gas +H ₂ S	Positive

APPENDIX –8: CERTIFICATE OF ANALYSIS

Certificate of Analysis



preB® Macrobiotic Superfood Powder

Code:	BP3010	Lot #:	080417-0535
Manufacture Date:	16 AUG 2017	Retest Date:	15 AUG 2020
Country of Origin:	USA	Plant Parts:	Fruit, juice, root, leaf and seed

Tests	Methods	Parameters	Results
Appearance	Visual	Powder	Powder
Colour	Visual	Light brownish orange	Conforms
Flavor	Gustatory	Sweet, fruity, earthy	Conforms
Moisture (LOD)	USP 37	NMT 5%	3.5%
Lead (ppm)	ICP/MS	NMT 3.0 ppm	0.033ppm
Arsenic (ppm)	ICP/MS	NMT 1.0 ppm	0.091ppm
Cadmium (ppm)	ICP/MS	NMT 1.0 ppm	0.062ppm
Mercury (ppm)	ICP/MS	NMT 1.0 ppm	0.007ppm
Standard Plate Count (cfu/g)	AOAC 966.23	NMT 50,000	<10 cfu/g
Mold (cfu/g)	FDA BAM, Ch. 18	NMT 1,000	<10 cfu/g
Yeast (cfu/g)	FDA BAM, Ch. 18	NMT 1,000	<10 cfu/g
Coliforms (cfu/g)	AOAC 991.14	< 10 cfu/g	<10 cfu/g
E. Coli	AOAC 991.14	Negative	Negative
Salmonella	AOAC 989.13	Negative	Negative
Total Dietary Fiber	AOAC 991.43	NLT 20%	20.3%

Signature

August 29, 2017

Date



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