

Table S1: Symptom score for quantification of allergy-related symptoms

Allergy-related symptoms were evaluated in a blinded approach after oral boost and provocation according to the parameters indicated in the symptom score sheet.

Symptom Score	0	1	2
Behaviour	normal	calm	apathetic
Fur	normal	slightly ruffled	ruffled
Stool	normal	Soft	with mucus
Body temp.	$\Delta < -1^{\circ}\text{C}$	$\Delta < -1$ to -2°C	$\Delta > -2^{\circ}\text{C}$

Table S2: Composition of fiber adjusted diet

Food pellets ingredients of the control diet (20% cellulose) or the pectin diet (15% pectin plus 5% cellulose).

¹⁾ Calculated with 94 % fiber, ²⁾ Pectin provided by the customer: Herbapekt, ³⁾ Physiological fuel value

Ingredient	U	20% Cellulose AIN93G mod. S8144-E730	15% Pectin 5% Cellul. AIN93G S8144-E734 / E738
Casein	%	20.0000	20.0000
L-Cystine	%	0.3000	0.3000
Cellulose powder	%	20.0000	5.0000
Pectin ¹⁾²⁾	%	---	15.0000
Corn starch	%	26.7486	26.7486
Maltodextrin	%	13.2000	13.2000
Sucrose	%	10.0000	10.0000
Vitamin premix	%	1.0000	1.0000
Mineral premix	%	3.5000	3.5000
tBHQ	%	0.0014	0.0014
Choline bitartrate	%	0.2500	0.2500
Soybean oil	%	5.0000	5.0000
Proximate contents			
Crude protein	%	17.6	17.6
Crude fat	%	5.1	5.1
Crude fiber	%	19.9	19.1
Crude ash	%	3.2	3.2
Starch	%	25.7	25.7
Dextrin	%	13.0	13.0
Sugar	%	11.2	11.2
Energy (Atwater) ³⁾ MJ/kg		13.4	13.4
kcal% Protein		22	22
kcal% Fat		15	15
kcal% Carbohydrates		63	63

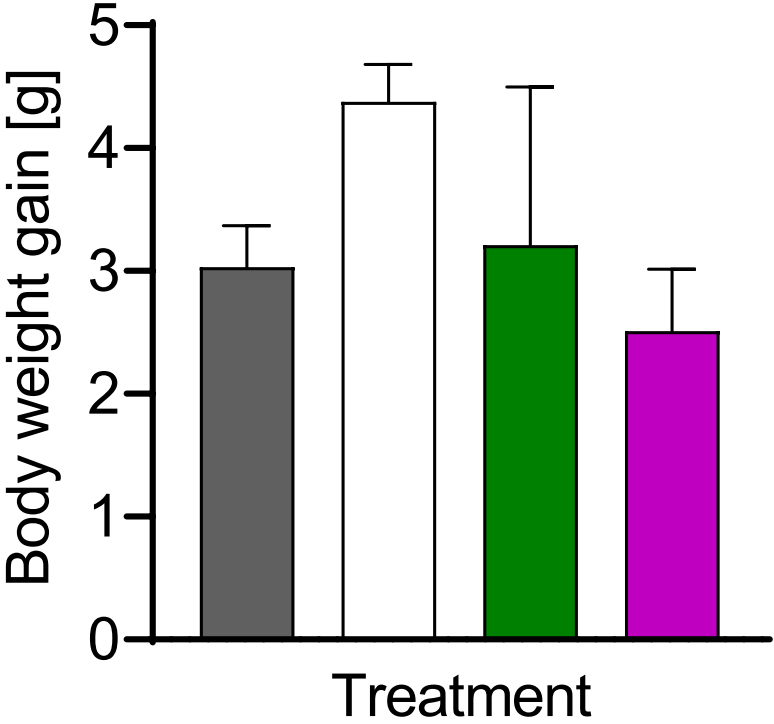
Table S3: Antibodies used for flow cytometry
Used antibodies and specifications for flow cytometry

<u>Target</u>	<u>Label</u>	<u>Clone</u>	<u>Company</u>
CD45	FITC	30-F11	BioLegend
CD11c	BV605	N418	BioLegend
CD11b	BV421	M1/70	BioLegend
MHCII	BV510	M5/114.15.2	BioLegend
CD64	PECy7	X54-5/7.1	BioLegend
CD117	BV711	2B8	BioLegend
Ly6G	Alexa647	1A8	BioLegend
SiglecF	PE	S17007L	BioLegend
CD3	BV421	17A2	BioLegend
CD4	PECy7	GK1.5	BioLegend
CD8a	BF510	53-6.7	BioLegend
CD19	PE-BV605	6D5	BioLegend
CD25	BV711	PC61	BioLegend
FoxP3	PE	150D	BioLegend

Figure S1: Monitoring of body weight gain and food intake

(a) Total body weight gain (g/mouse) and (b) food intake (g/mouse) over the period (26 days) of the experiment are depicted. n = 3-5

a



b

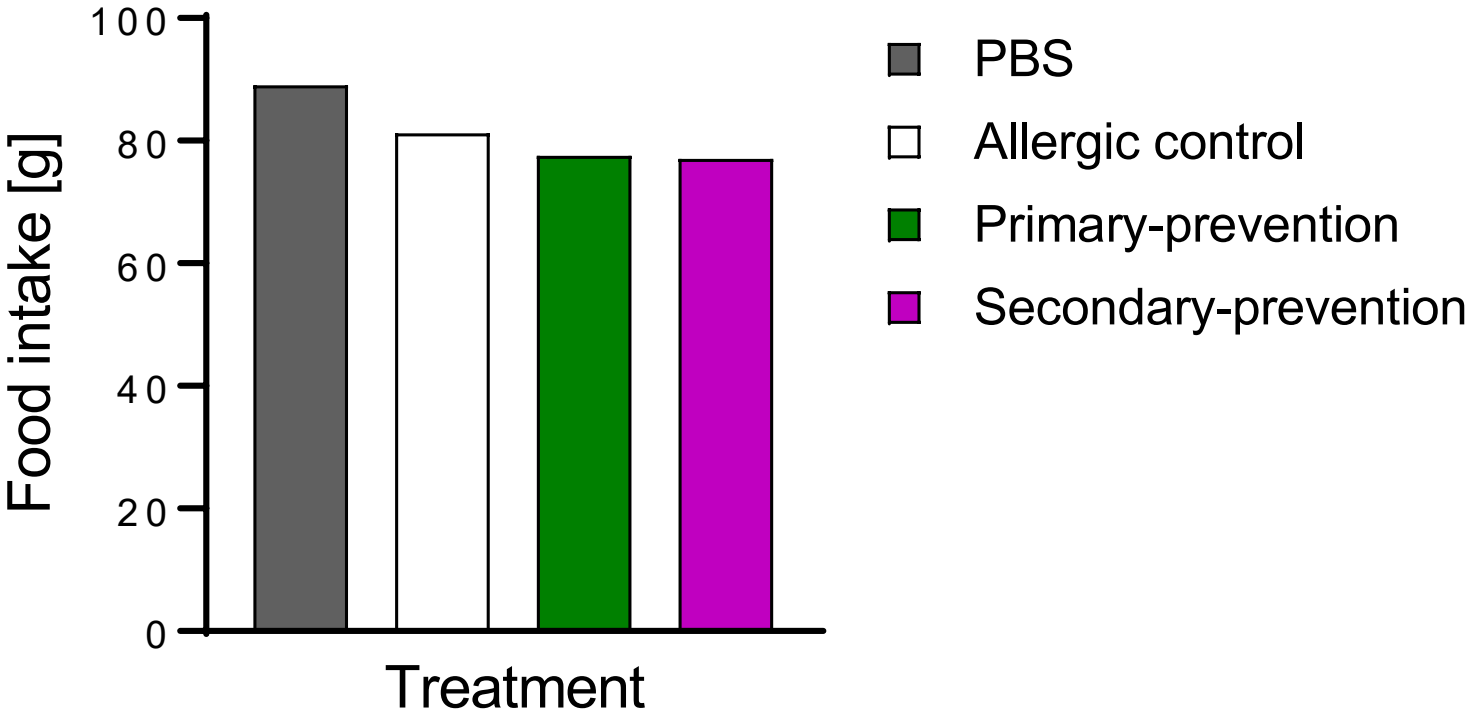


Figure S2: Intestinal size and histological analysis

(a) Length of small intestine, (b) large intestine and (c) caecum were measured after the provocation of the mice. n = 3-5; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

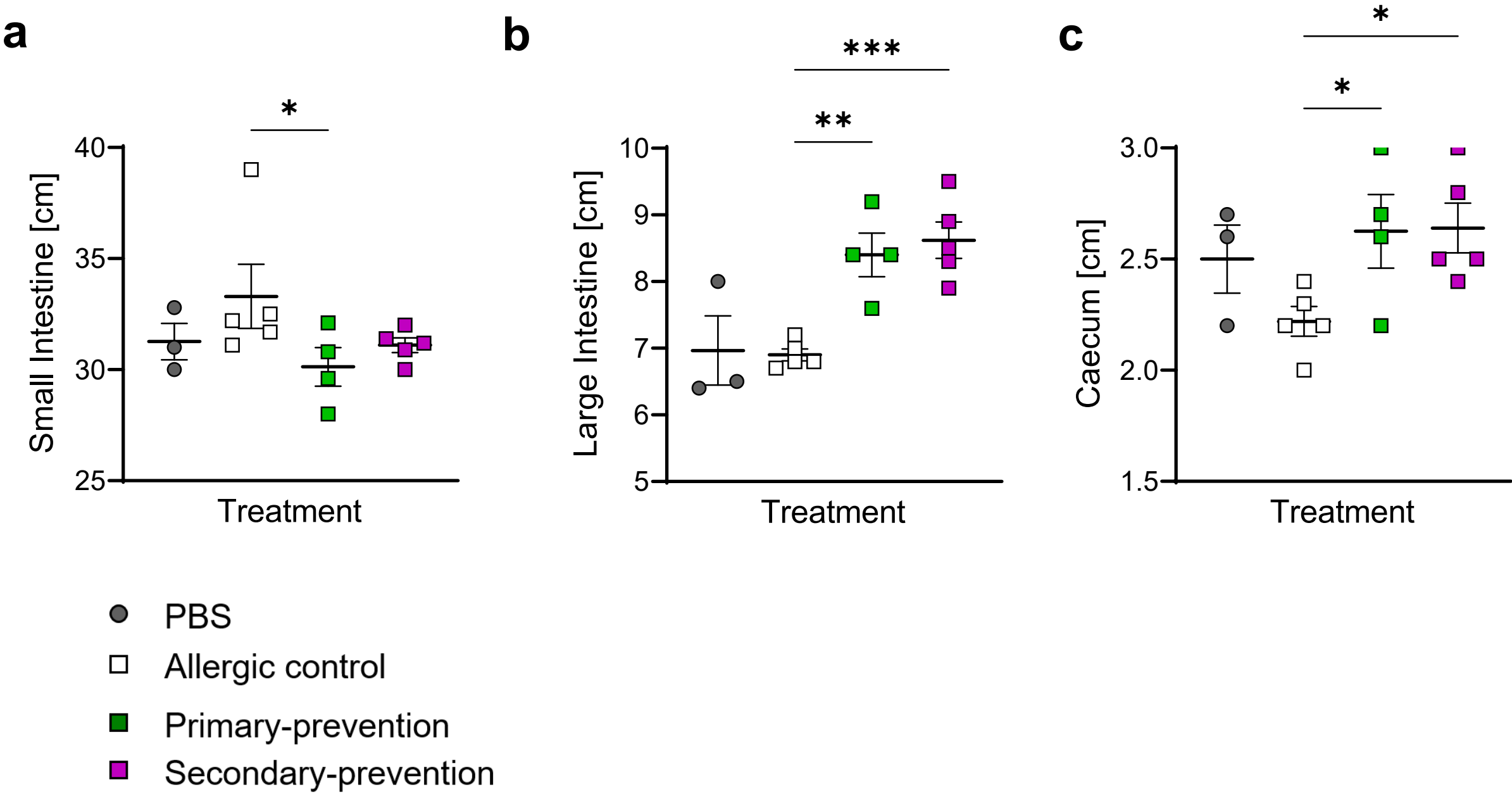


Figure S2

Figure S3: Relative frequency of Bacteroidaceae and Akkermansiaceae

Time dependent alteration of the relative frequency of Bacteroidaceae and Akkermansiaceae are depicted separately for each group.

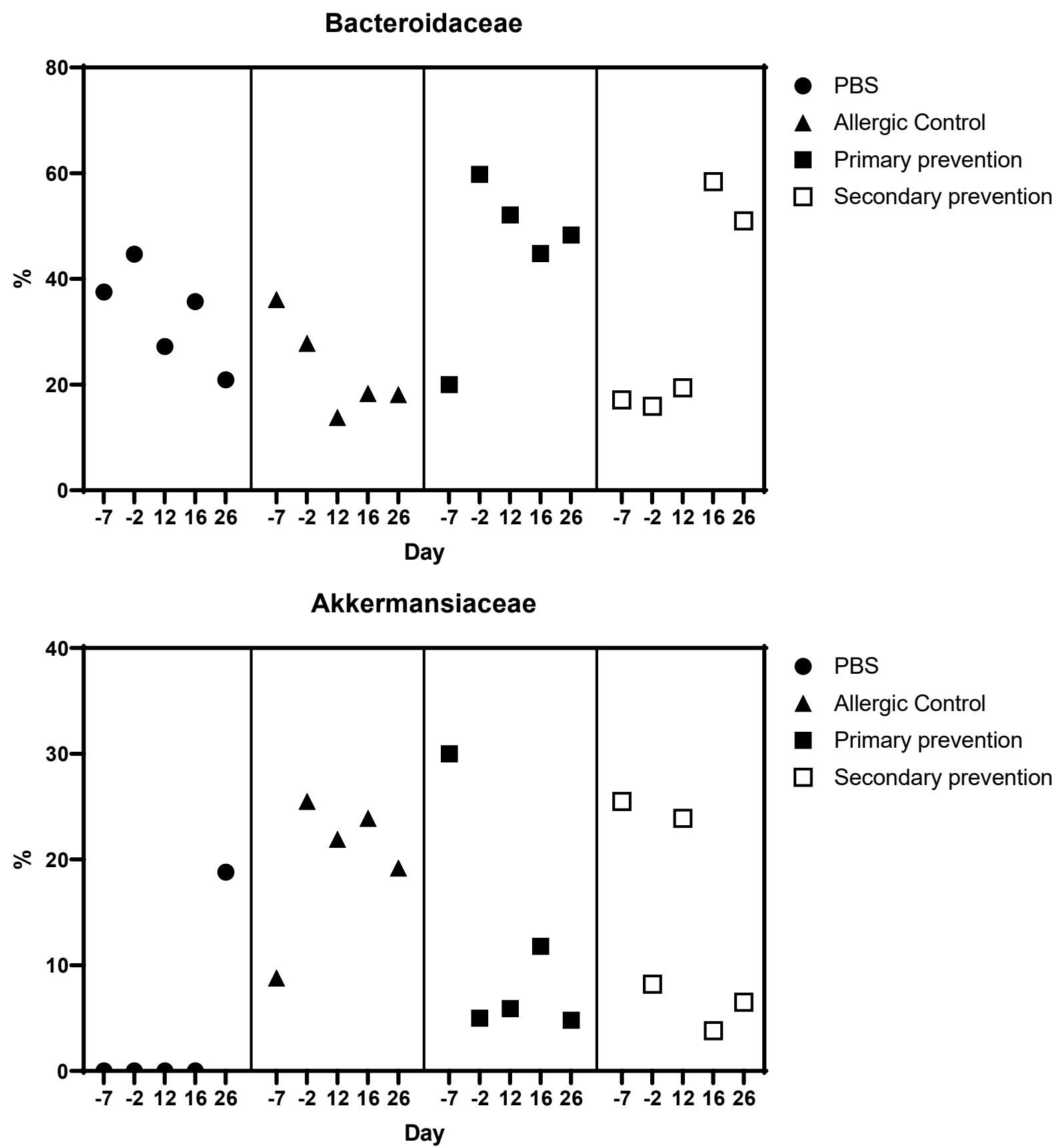


Table S4: Microbiota analysis

16S RNA analysis of 39 bacterial strains in each group (PBS control, peach allergy, prophylaxis = primary-prevention and therapy = secondary-prevention) depicted by number of reads (A) and relative frequency (%) in B. Results for Bacteroidaceae and Akkermansiaceae are highlighted.

index	Tannerellaceae	Bacteroidaceae	Akermansiaceae	Lachnospiraceae	Enterobacteriaceae	Erysipelotrichaceae	Enterococcaceae	Burkholderiaceae	Ruminococcaceae	Rikenellaceae	Rhodospirillales	Desulfotribionaceae	Muribaculaceae	Lactobacillaceae	Atopobiaceae	Streptococcaceae	Deferribacteraceae	Eggerthellaceae	Peptococcaceae	Clostridiales	Marinifiliaceae	Mollicutes	Defluviitaleaceae	Christensenellaceae	Mollicutes RF39	Prevotellaceae	Sacharimonadaceae	Bacteria unknown	Eubacteriaceae	Gastranaerophilales	Clostridiales vadinBB60	Unassigned	Betaproteobacteriales	Clostridiales_uncultured	Corynebacteriaceae	Peptostreptococcaceae	Clostridiaceae 1	Pseudomonadaceae	Clostridiales_		
PBS_-7	9.9%	37.5%	0.0%	26.2%	0.0%	1.7%	0.0%	0.8%	4.7%	6.2%	0.4%	0.8%	9.7%	0.3%	0.0%	0.3%	0.0%	0.9%	0.2%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
PBS_-2	21.0%	44.7%	0.0%	12.9%	8.9%	3.6%	0.2%	0.3%	2.3%	0.1%	0.2%	0.3%	0.0%	0.0%	0.0%	0.1%	0.0%	0.3%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
PBS_12	25.6%	27.2%	0.0%	18.6%	10.6%	3.7%	0.2%	0.1%	2.5%	1.3%	0.2%	0.1%	1.5%	0.1%	0.0%	0.1%	0.0%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
PBS_16	21.5%	35.7%	0.0%	22.7%	4.8%	6.5%	0.4%	0.2%	2.5%	0.7%	0.3%	0.0%	0.5%	0.1%	0.0%	0.1%	0.0%	0.3%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
PBS_26	18.7%	20.9%	18.8%	7.7%	20.9%	0.8%	0.7%	0.1%	1.6%	0.4%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Peach_-7	9.3%	36.1%	8.8%	23.5%	2.0%	7.8%	0.1%	0.7%	2.4%	0.9%	1.0%	0.7%	1.0%	0.1%	0.0%	0.2%	0.3%	0.5%	0.1%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Peach_-2	16.1%	27.8%	25.5%	13.5%	3.9%	2.0%	0.9%	0.3%	1.7%	0.7%	0.9%	0.3%	0.3%	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Peach_12	21.5%	13.8%	21.9%	10.4%	11.3%	1.2%	0.2%	0.3%	1.6%	0.7%	0.2%	0.3%	0.7%	0.1%	0.0%	0.2%	0.2%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Peach_16	20.8%	18.3%	23.9%	15.5%	5.4%	3.3%	0.3%	0.8%	3.2%	1.5%	0.3%	0.2%	1.7%	0.0%	0.2%	0.0%	0.1%	0.2%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Peach_26	23.4%	18.1%	19.2%	9.2%	17.5%	2.6%	0.5%	0.1%	1.8%	0.7%	0.5%	0.1%	0.5%	0.0%	0.4%	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Therapy_-7	22.3%	17.1%	25.5%	17.2%	0.1%	1.5%	0.8%	2.3%	3.9%	3.4%	0.6%	1.1%	2.7%	0.1%	0.0%	0.5%	0.1%	0.3%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Therapy_-2	32.3%	15.9%	8.2%	4.3%	9.7%	2.7%	0.0%	0.7%	2.6%	0.2%	0.0%	0.7%	0.2%	0.0%	0.0%	0.1%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Therapy_12	31.2%	19.4%	23.9%	11.9%	1.2%	1.6%	0.6%	3.2%	2.9%	1.3%	0.2%	0.7%	1.1%	0.0%	0.0%	0.2%	0.2%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Therapy_16	2.6%	58.4%	3.8%	21.0%	3.8%	5.9%	2.0%	0.0%	1.7%	0.0%	0.0%	0.0%	0.0%	0.4%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Therapy_26	5.0%	51.0%	6.5%	14.6%	14.3%	4.7%	0.9%	0.8%	1.0%	0.0%	0.0%	0.0%	0.0%	0.8%	0.2%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Profilaxis_-7	13.0%	20.0%	30.0%	14.7%	1.7%	4.0%	1.1%	2.3%	3.2%	2.1%	2.1%	0.6%	4.1%	0.1%	0.0%	0.1%	0.1%	0.3%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Profilaxis_-2	2.7%	59.8%	5.0%	15.1%	9.1%	4.8%	1.0%	0.4%	1.5%	0.0%	0.0%	0.0%	0.0%	0.3%	0.3%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Profilaxis_12	5.2%	52.1%	5.9%	13.8%	15.3%	4.3%	0.7%	1.1%	0.8%	0.0%	0.0%	0.0%	0.0%	0.4%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Profilaxis_16	7.4%	44.8%	11.8%	9.3%	18.1%	4.6%	0.6%	1.7%	0.9%	0.0%	0.0%	0.0%	0.0%	0.3%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Profilaxis_26	6.8%	48.3%	4.8%	11.9%	21.6%	3.7%	0.6%	0.9%	0.8%	0.0%	0.0%	0.0%	0.0%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Figure S4: Relative frequency of microbiota from fecal samples

Time dependent alteration of the relative frequency of gastrointestinal microbiota for individual mice of each group is shown (%).

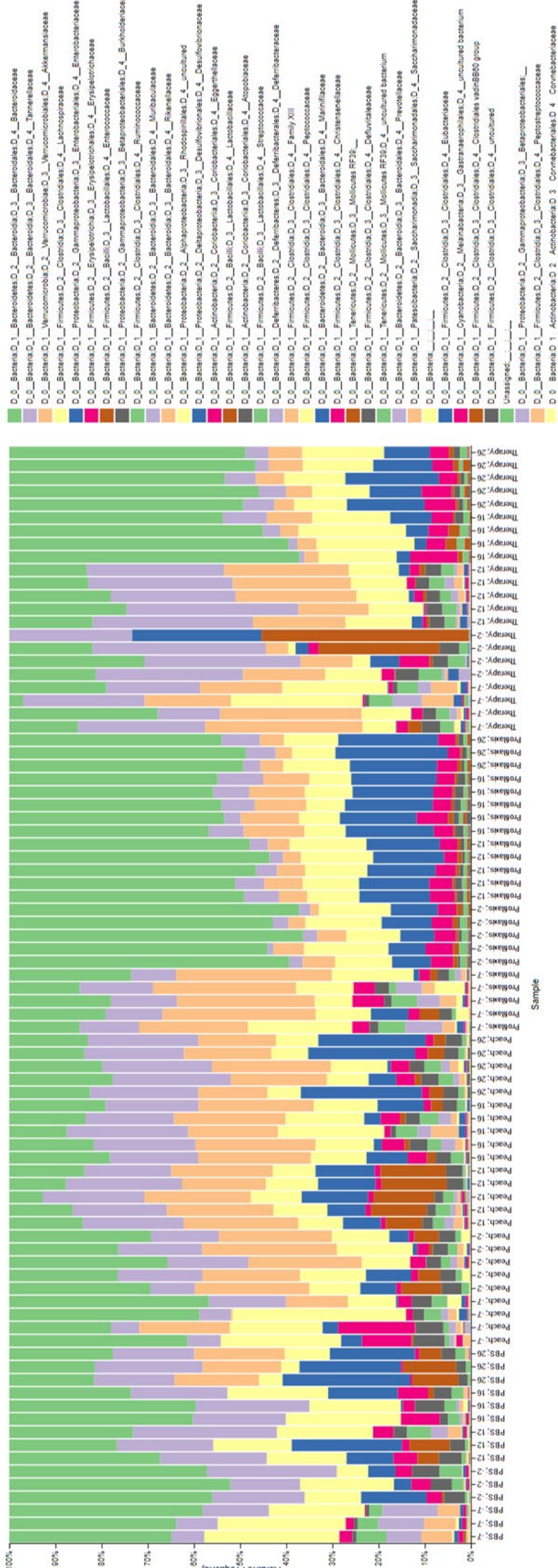


Figure S5: Histological analysis of small intestine

Histological changes in the jejunum were examined by H&E staining.

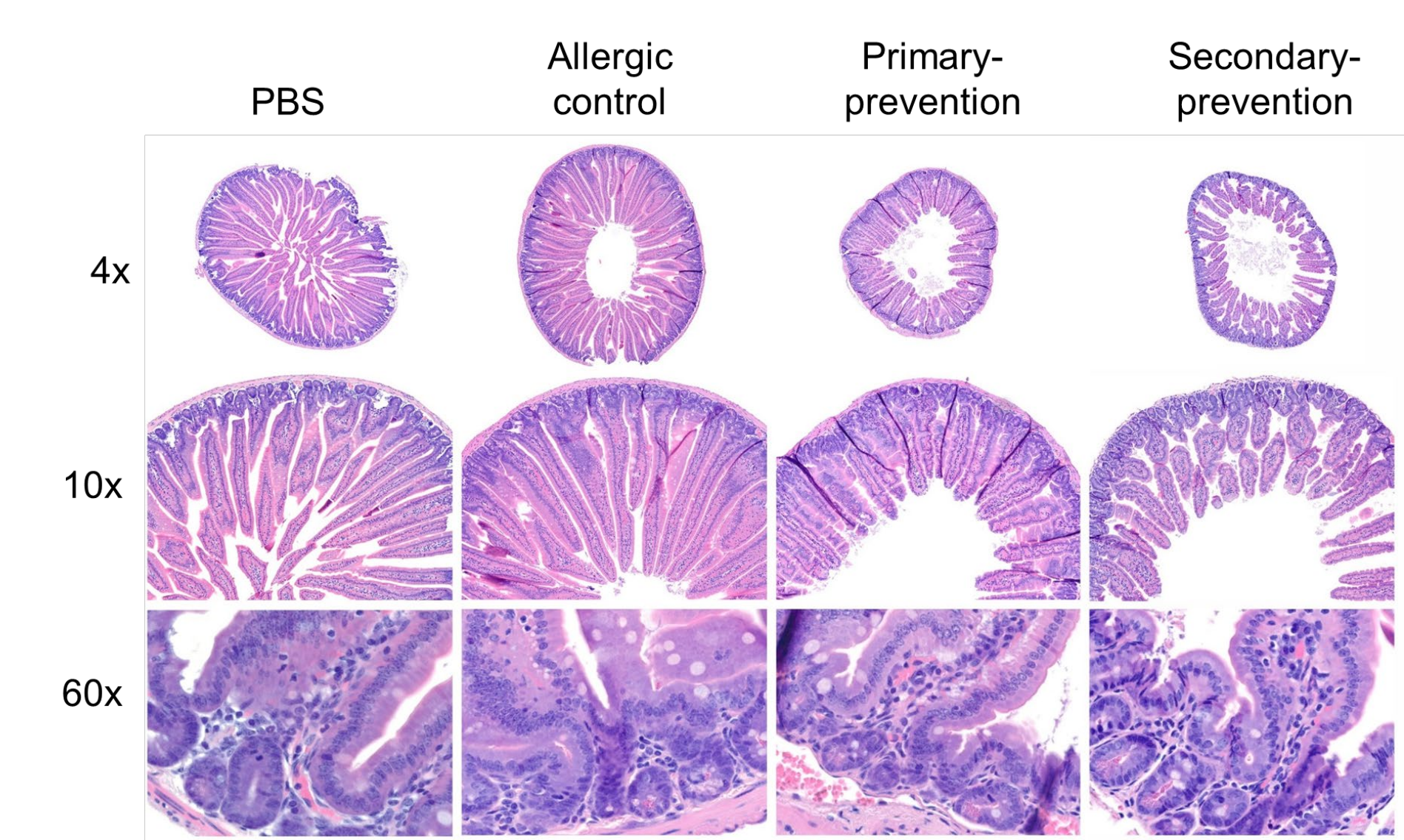


Figure S6: Gating strategy for T cell and B cell panel

Live lymphocytes were gated for FSC, SSC characteristics, cleaned up from doublets and identified as CD45+ live population. Among these, B cells were identified as CD19+CD3- and T cells as CD19-CD3+ cell population. T cells were further discriminated for CD8 or CD4 expression and Tregs were identified as Foxp3+ population among CD4 cells.

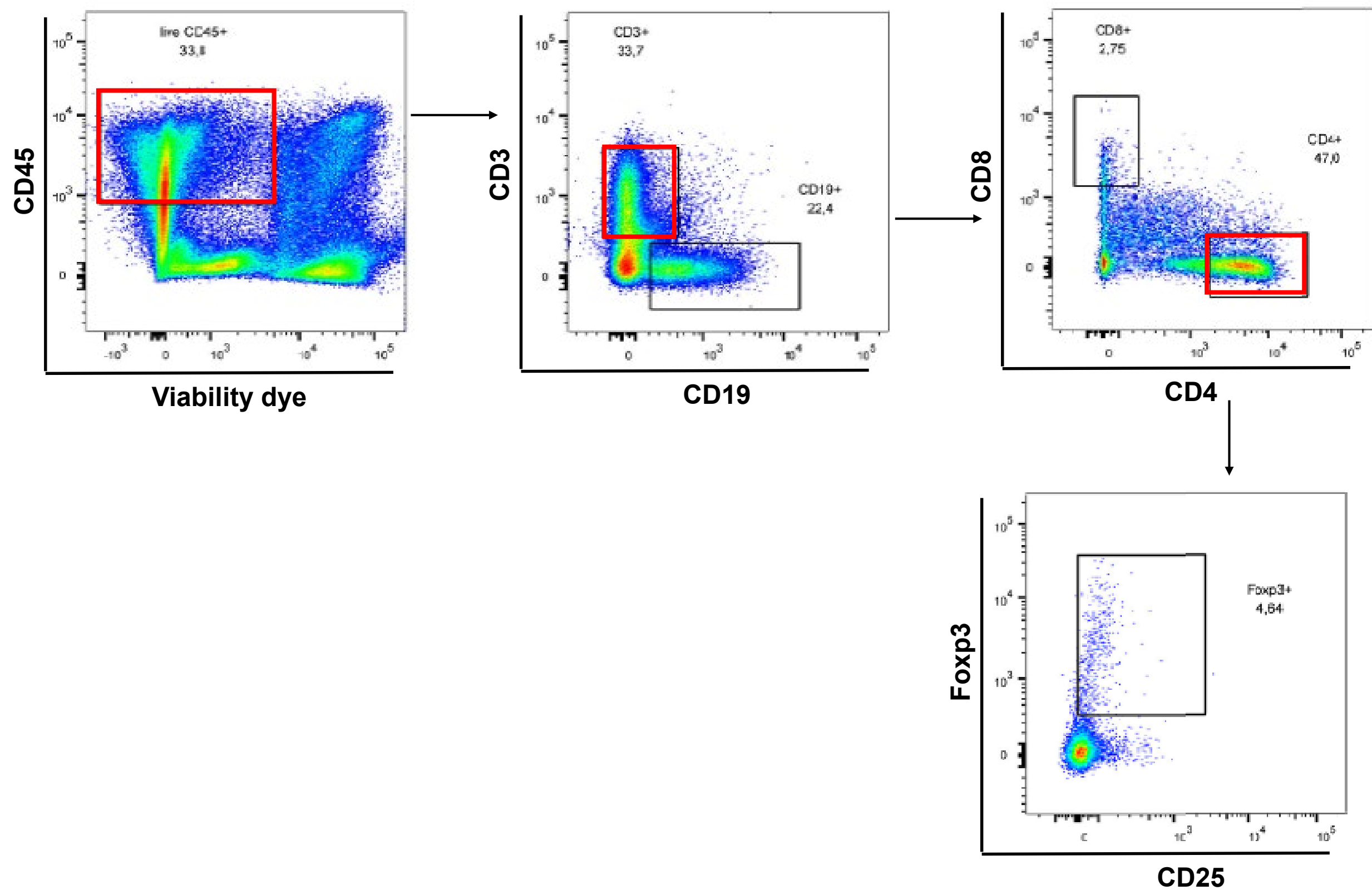


Figure S7: Gating strategy for granulocyte panel

Live lymphocytes were gated for FSC, SSC characteristics, cleaned up from doublets and identified as CD45+ live population. Among these, CD11b+ and CD11b- populations were gated and eosinophils were identified as SiglecF+Ly6G- among the CD11b+ population. Mast cells were gated as CD117+SiglecF- among the CD11b- population. Additionally, MHCII+ cells were identified among CD45+ live cells and subsequently analyzed for CD11c+CD64- conventional dendritic cells (cDCs) and CD11c+CD64+ macrophages.

