

**S4 Table. Variables significantly associated with the distribution of bacterial community structure in PlanHab experiment at the level of 97 % OTUs and genus.** The data were retrieved from the newly established in-house PlanHab database and used in variation partitioning. Please see Materials and methods next to Table S2 for additional information. A1AT – Alpha1 antitrypsin; TSOC – total soluble organic carbon, EDN – eosinophil derived neurotoxin; BSS – Bristol stool scale; polyphenol a1, b1, a3 – polyphenol peaks with currently unknown chemical structure.

**97 % OTU**

Environment	Experiment	Diet
Variable	Variable	Variable
iso-valeric acid	hypoxia	cholesterol
n-butyric acid	individual	histidine
n-capric acid	experimental variant	f18_3cn3 (alpha-linolenic acid)
A1AT	body traits (mass, height)	water
n-valeric acid		
TSOC		
EDN		
water content		
acetic acid		
bile acids		
reducing sugars		

**Genus**

Environment	Experiment	Diet
Variable	Variable	Variable
acetic acid	experimental variant	protein
n-butyric acid	hypoxia	fat
iso-valeric acid	time (day in experiment)	f18_2 (linoleic acid)
n-capric	individual	f18_3cn3 (alpha-linolenic acid)
A1AT	body traits (height, BMI)	serine
bile acids		sucrose
BSS		water
polyphenol a1		
polyphenol b1		
polyphenol a3		