

Supplemental materials

Supplemental Table 1 A table of micronutrients (mg/g per each item) of food items used in this study

Food item	Total Carbohydrate (kJ)	Protein (kJ)	Fat (kJ)	Sugar (kJ)
Chow	0.535 (9.10)	0.181 (3.08)	0.049 (1.82)	0 (0.00)
Meat pie	0.221 (3.76)	0.08 (1.37)	0.131 (4.86)	0.003 (0.06)
Dim sim	0.289 (4.91)	0.06 (1.02)	0.061 (2.26)	0.022 (0.37)
Cake	0.478 (8.13)	0.046 (0.78)	0.173 (6.40)	0.317 (5.39)
Cookie	0.632 (10.74)	0.043 (0.73)	0.206 (4.62)	0.332 (5.64)

Supplemental Table 2.1 Summary of PERMANOVA pairwise comparisons between time points in dams (p values)

Chow dams	Baseline	Premating	Mid-gestation	Mid-lactation	End-lactation
Baseline		0.0002	0.0002	0.0003	0.0003
Premating	0.0002		0.0525	0.0007	0.0003
Mid- gestation	0.0002	0.0525		0.0006	0.0007
Mid- lactation	0.0003	0.0007	0.0006		0.0048
End-lactation	0.0003	0.0003	0.0007	0.0048	
Caf dams	Baseline	Premating	Mid-gestation	Mid-lactation	End-lactation
Baseline		0.0001	0.0001	0.0001	0.0001
Premating	0.0001		0.0141	0.0364	0.0003
Mid- gestation	0.0001	0.0141		0.0079	0.0002
Mid- lactation	0.0001	0.0364	0.0079		0.0025
End-lactation	0.0001	0.0003	0.0002	0.0025	

Supplemental Table 2.2 Summary PERMIDISP pairwise comparisons between time points in dams (p values)

Chow dams	Baseline	Premating	Mid-gestation	Mid-lactation	End-lactation
Baseline		0.1877	0.1772	0.0019	0.0001
Premating	0.1877		0.9792	0.07	0.028
Mid- gestation	0.1772	0.9792		0.109	0.0559
Mid- lactation	0.0019	0.07	0.109		0.6757
End-lactation	0.0001	0.028	0.0559	0.6757	
Caf dams	Baseline	Premating	Mid-gestation	Mid-lactation	End-lactation
Baseline		0.3048	0.5955	0.3398	0.5664
Premating	0.3048		0.6802	0.8541	0.5157
Mid- gestation	0.5955	0.6802		0.6217	0.9778
Mid- lactation	0.3398	0.8541	0.6217		0.5563
End-lactation	0.5664	0.5157	0.9778	0.5563	

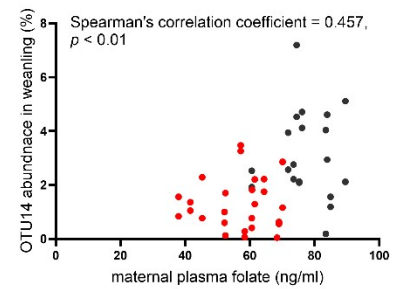
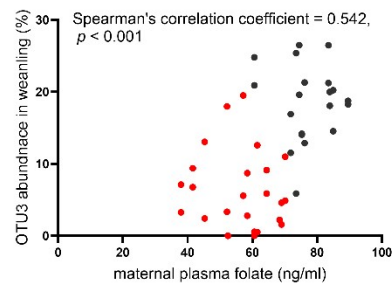
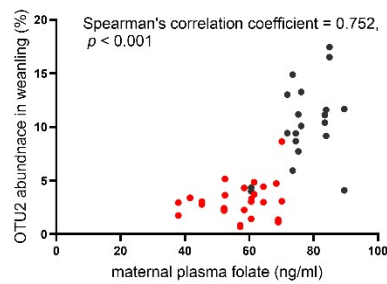
Supplemental Table 3. Maternal predictor variables for β diversity in dams, weanling and 14 weeks offspring

Variables	β diversity in dams	β diversity in weanlings	β diversity in 14 weeks offspring
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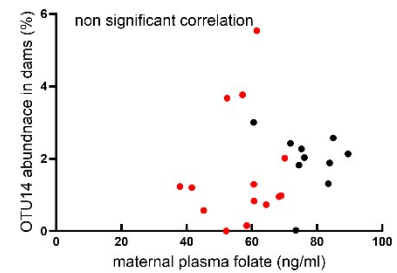
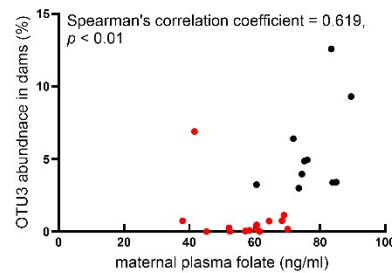
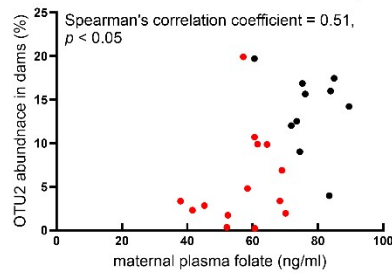
Distance based linear models (DistLM) examined associations between variables and β diversity in dams at end of lactation, weanlings and 14 weeks offspring. GWG gestational weight gain, * $p < .05$, ** $p < .01$, *** $p < .001$

	Pseudo-F	Pseudo-F	Pseudo-F
Maternal Plasma R12	1.8035*	3.1063**	1.6369*

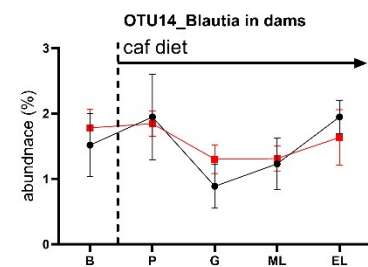
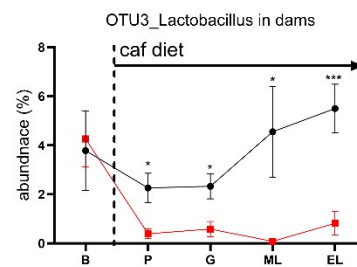
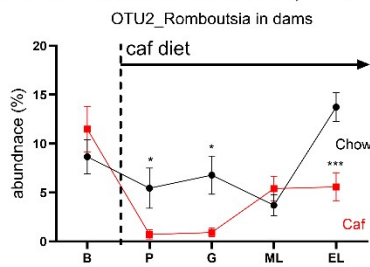
A maternal folate vs otu2, 3 & 14 in weanlings



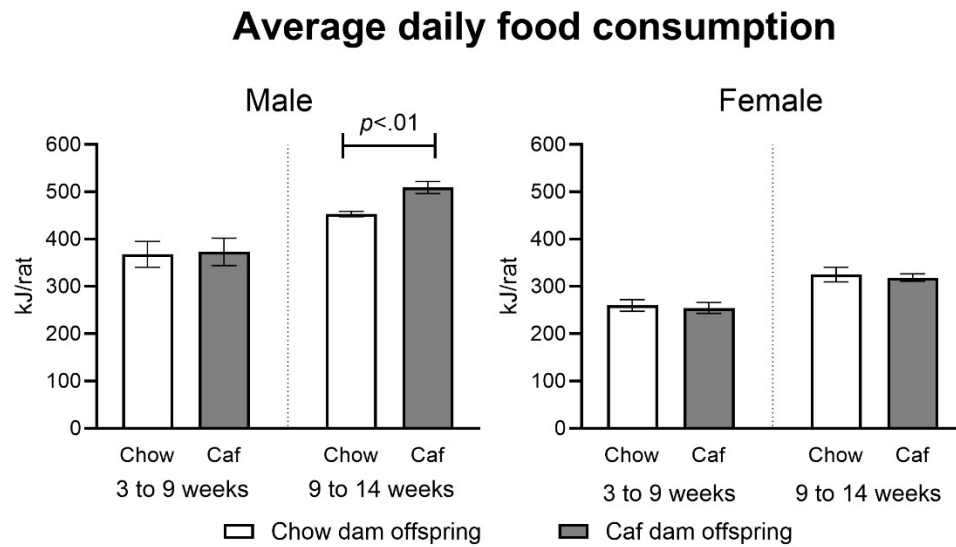
B maternal folate vs otu2, 3 & 14 in dams



C abundance of otu2, 3 & 14 in dams from baseline to end lactation



Supplemental figure 1 A) Spearman Correlations between maternal folate levels and OTU2_Romboutsia, OTU3_Lactobacillus and OTU14_Blautia abundance in weanlings; and B) Spearman Correlations between maternal folate levels and OTU2_Romboutsia, OTU3_Lactobacillus and OTU14_Blautia abundance in dams; Red dots indicate Caf weanlings and Black dots indicate Chow weanlings. C) Relative abundance of OTU2, OTU3 and OTU14 in dams from baseline to end lactation. Chow dam (n=10) and Caf dam (n=15). baseline (B), preparting (P), gestation (G), lactation (ML), and end of lactation (EL). Data are displayed $\pm$ SEM. * $p < 0.05$, *** $p < 0.001$.



Supplemental figure 2 Average daily food (chow) consumption (kJ/rat) at two age ranges, from 3 to 9 weeks, and 9 to 14 weeks. Data are shown for the number of rats indicated, based on calculation of food intake per cage. The corresponding cage numbers for food intake are Male offspring from Chow dam (n=34, 8 cages); Male offspring from Caf dam. (n=52, 15 cages); Female offspring from Chow dam (n=30, 9 cages); and Female offspring from Caf dam (n=56, 15 cages). Data are displayed as mean $\pm$ SEM.