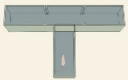
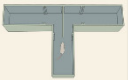
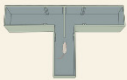



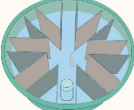





	Littersize		n	sex ratio	
	mean	SD		mean	SD
control	6,10	2,34	21	1,38	1,31
ABX	7,57*	1,78	21	1,58	1,00

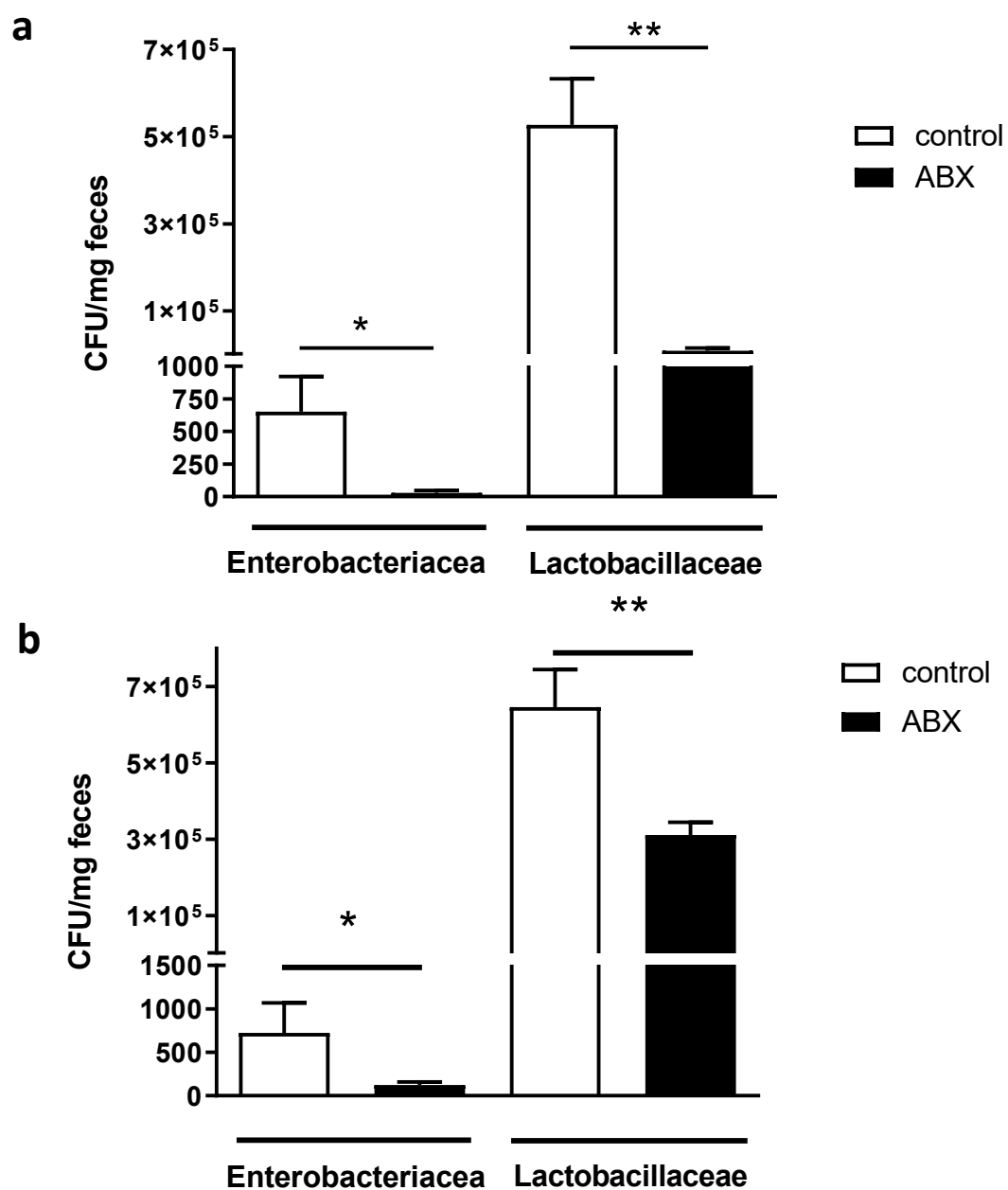
Supplementary Table S1: Litter characteristics

Litters from antibiotic-treated and control dams giving birth in the same period were compared. While sex ratio is indifferent, the size of the litters from antibiotics-treated dams (ABX) was even elevated (unpaired t-test, *p=0.027).

	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
Morning			<u>T-maze</u> 	<u>T-maze</u> 	<u>T-maze</u> 		<u>Nesting test</u> 
			Habituation (2 min)	Trial 1 (Right or left choice)	Trial 2 (Right or left choice)		Nesting Evaluation
Time			9:30 AM	9:30 AM	9:30 AM		9:00 AM
Afternoon	<u>Nesting test</u> 	<u>Nesting test</u> 	<u>RAWM</u> 		<u>Neophobia test</u> 	<u>Nesting test</u> 	<u>Nesting test</u> 
	Nesting material + paper towel	Nesting material (only)	Alternation of visible and invisible platform		Time to escape from the box (s)	No nesting material + No paper towel	Nesting material (only)
Time	5:00 PM	5:00 PM	1:30 PM		3:30 PM 5:00 PM	5:00 PM	

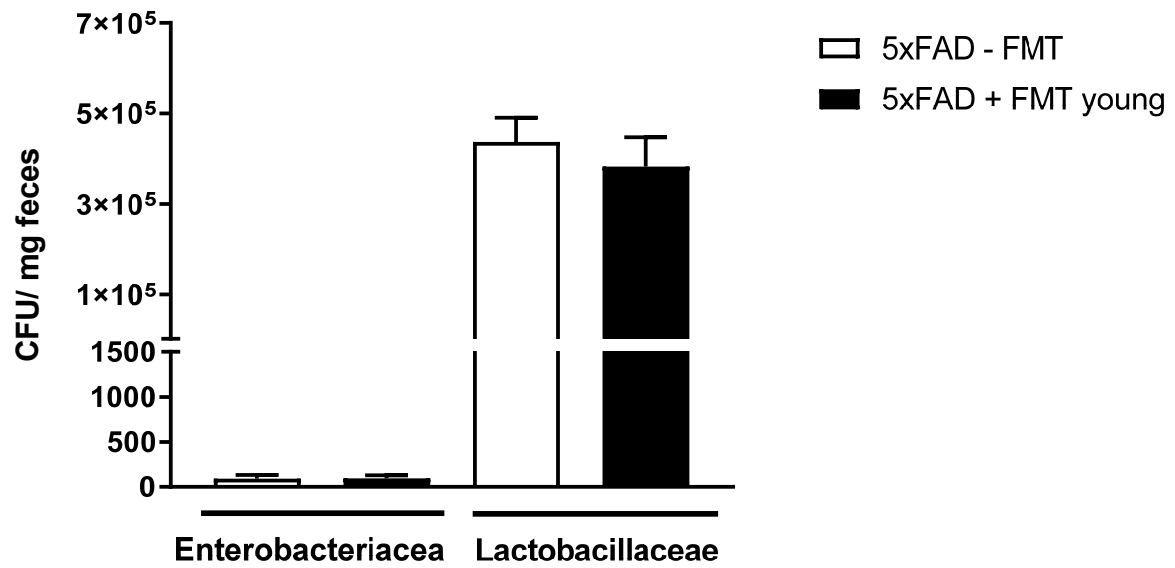
Supplementary Figure S1: Schedule for behavioral testing

Mice were tested within one week before sacrifice as indicated in Figure 1. Starting times for each test are indicated in the scheme.



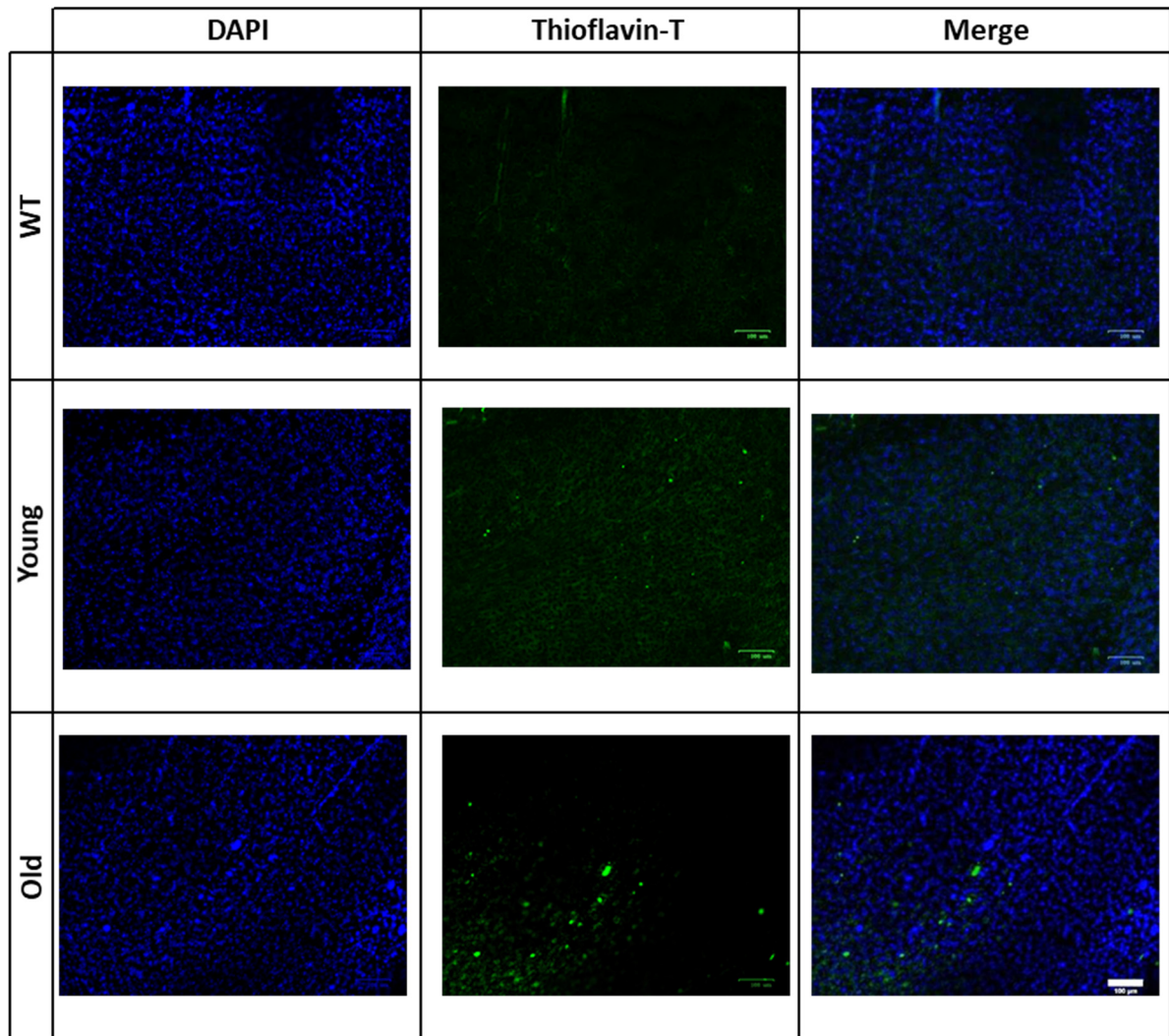
Supplementary Figure S2: Antibiotics treatment of mothers and offspring

Suspended and diluted fecal material from dams (a, n=9 per group) or offspring (aged 4 weeks) was subjected to specific bacterial growth plates and colony forming units (CFU) counted after 24 h of incubation. Animals were either treated with antibiotics (ABX, n=38) or with normal drinking water without supplements (control, n=18).



Supplementary Figure S3: Comparison of CFU from 5xFAD with and without age-matched FMT

Suspended and diluted fecal material was analyzed as described and colony forming units (CFU) counted after 24 h of incubation. Animals were either treated with PBS (-FMT, n=15) or with cecal material from age-matched (young donors) (+FMT young, n=20). Data are presented as mean + SEM.



Supplementary Figure S4: Prefrontal cortex slice as an example for Thioflavin-T staining

Slices from prefrontal cortex (PFC) from wild type (wt) animals or 5xFAD mice receiving fecal material from young (designated “young”) or old donors (designated “old”) were stained with Thioflavin-T (ThT) for A β aggregates and DAPI for neuronal nuclei labeling. Exemplary pictures and the merge of both signals are shown. Scale bar: 100 μ m.