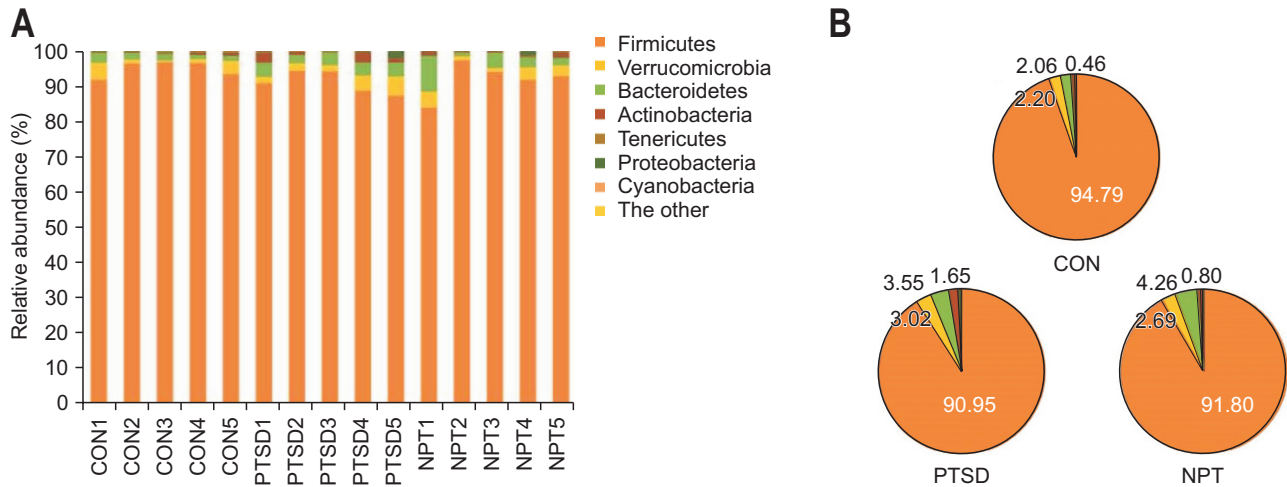
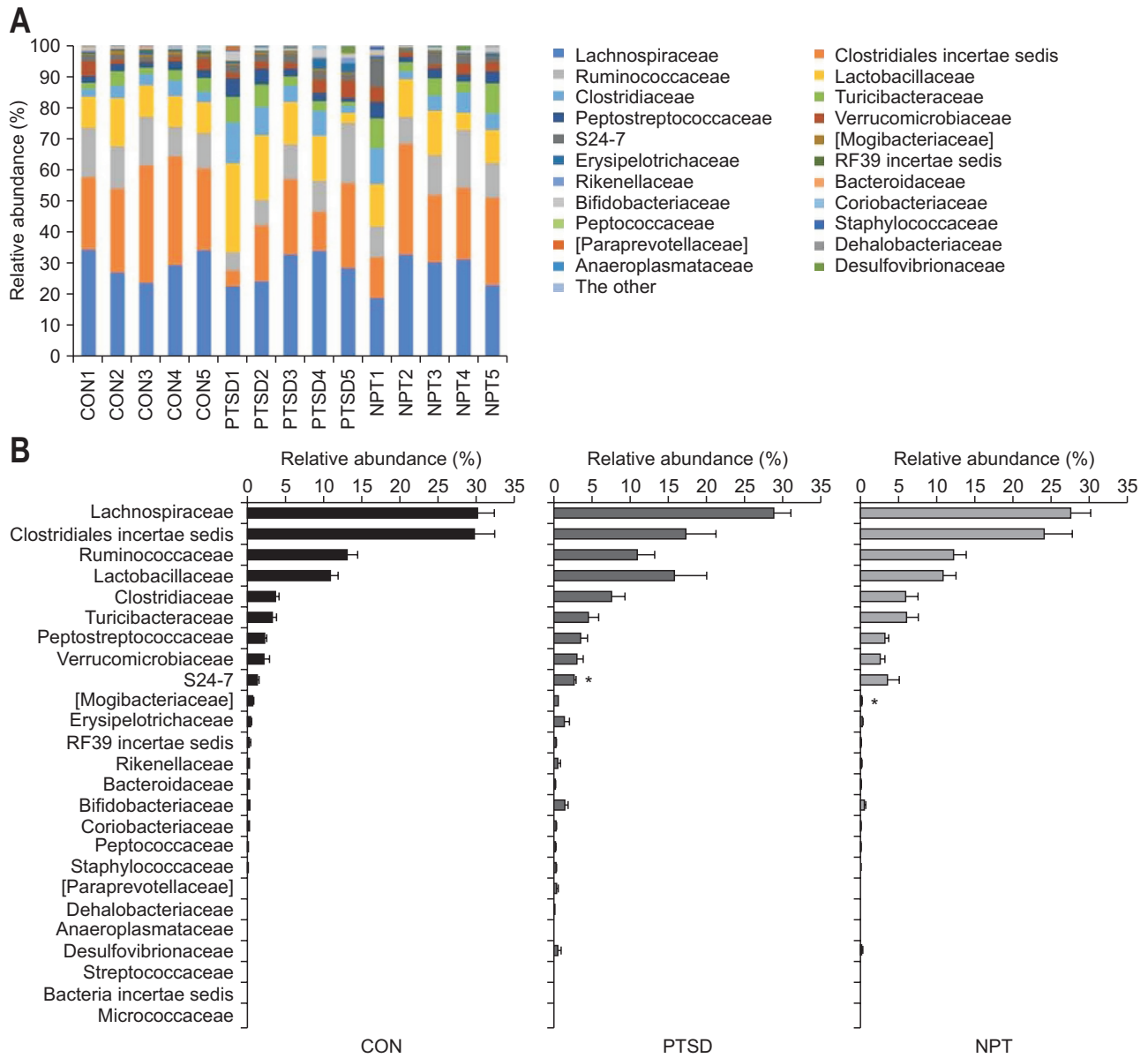


Supplementary Fig. 1. The mean threshold value of colorectal distension (CRD) in rats with or without posttraumatic stress disorder (PTSD). The mean threshold value of CRD in each rat (CON: 5 control rats given neither foot shock nor the avoidance/escape task procedure; PTSD: 5 rats diagnosed with PTSD; NPT: 5 rats diagnosed as not having PTSD) was measured after the behavior test.



Supplementary Fig. 2. Comparison of gut microbiota composition at the phylum level in rats with or without PTSD. (A) Variation in gut microbiota composition in the cecum at the phylum level in each rat (CON: 5 control rats given neither foot shock nor the avoidance/escape task procedure; PTSD: 5 rats diagnosed with PTSD; NPT: 5 rats diagnosed as not having PTSD). (B) Relative abundance of gut microbiota composition in the cecum at the phylum level in rats from each group.



Supplementary Fig. 3. Comparison of gut microbiota composition at the family level in rats with or without PTSD. (A) Variation in gut microbiota composition in the cecum at the family level in each rat (CON: 5 control rats given neither foot shock nor the avoidance/escape task procedure; PTSD: 5 rats diagnosed with PTSD; NPT: 5 rats diagnosed as not having PTSD). (B) Relative abundance of gut microbiota composition in the cecum at the family level in rats from each group. * $p < 0.05$ vs control rats. p -values obtained via the Kruskal-Wallis test followed by the Steel-Dwass *post hoc* test.

Supplementary Table 1. Mean Relative Abundance of Major Cecal Microbiota (>0.1%) at the Genus Level

Genus	CON (%)	PTSD (%)	NPT (%)	Kruskal-Wallis p-value	Steel-Dwass p-value
<i>Clostridiales incertae sedis</i>	29.6665±2.79	17.3119±3.98	24.1349±3.68	0.1604	
<i>Lachnospiraceae incertae sedis</i>	17.0738±2.68	12.2368±1.49	15.3486±2.09	0.1959	
<i>Lactobacillus</i>	10.8927±1.07	15.8846±4.16	11.0058±1.56	0.3570	
<i>Oscillospira</i>	7.7237±1.20	6.0160±1.93	6.5844±0.96	0.4449	
[<i>Ruminococcus</i>]	5.5351±0.77	6.7913±0.67	5.2015±0.50	0.2369	
<i>Coprococcus</i>	5.1522±1.76	7.1967±0.97	4.8760±0.53	0.2808	
<i>Turicibacter</i>	3.2801±0.54	4.5335±1.33	6.2138±1.42	0.2645	
<i>Ruminococcus</i>	3.1728±0.21	3.1113±0.24	3.5183±0.61	0.9139	
<i>Peptostreptococcaceae incertae sedis</i>	2.3304±0.20	3.5273±0.86	3.2292±0.62	0.3946	
<i>Akkermansia</i>	2.1974±0.80	3.0167±0.78	2.6875±0.67	0.5273	
<i>Clostridium</i>	2.1533±0.31	5.2927±1.51	3.0688±1.10	0.3362	
<i>Ruminococcaceae incertae sedis</i>	1.7582±0.23	1.4683±0.28	1.7876±0.22	0.8521	
<i>Roseburia</i>	1.6500±0.23	1.2325±0.53	1.5816±0.37	0.7334	
<i>SMB53</i>	1.4993±0.25	2.0821±0.35	2.9501±0.63	0.2645	
<i>S24-7 incertae sedis</i>	1.3917±0.20	2.6363±0.18	3.7050±1.41	0.0424	CON vs PTSD 0.0326
[<i>Mogibacteriaceae</i>] <i>incertae sedis</i>	0.7687±0.10	0.4987±0.03	0.3117±0.04	0.0037	CON vs NPT 0.0326
					PTSD vs NPT 0.0326
<i>Blautia</i>	0.5414±0.26	1.1470±0.66	0.3957±0.26	0.6907	
<i>RF39 incertae sedis</i>	0.3690±0.10	0.2179±0.05	0.1102±0.04	0.0545	
<i>Rikenellaceae incertae sedis</i>	0.3055±0.10	0.4488±0.28	0.2509±0.07	0.9139	
<i>Butyricoccus</i>	0.2925±0.16	0.2350±0.11	0.2941±0.08	0.8270	
<i>Bacteroides</i>	0.2730±0.07	0.1210±0.04	0.1610±0.08	0.0880	
<i>Bifidobacterium</i>	0.2420±0.05	1.3649±0.49	0.5881±0.21	0.2080	
<i>Erysipelotrichaceae incertae sedis</i>	0.2204±0.09	0.1373±0.04	0.1038±0.06	0.6771	
<i>Adlercreutzia</i>	0.1956±0.09	0.2476±0.08	0.1703±0.04	0.6771	
<i>Clostridium</i>	0.1533±0.07	0.0172±0.01	0.0861±0.04	0.3570	
<i>Clostridium</i>	0.1147±0.03	0.0897±0.02	0.0774±0.03	0.5655	
<i>Clostridium</i>	0.1021±0.03	0.0674±0.02	0.0708±0.01	0.9704	
[<i>Eubacterium</i>]	0.1010±0.07	0.0062±0.00	0.0294±0.02	0.2472	

Data are presented as mean±SE. CON (n=5), PTSD (n=5), and NPT (n=5).
 CON, control group; PTSD, post-traumatic stress group; NPT, not-PTSD group.
 Kruskal-Wallis test followed by Steel-Dwass *post hoc* test.