Tea plant-inspired nanoassembled supraparticles alleviate colitis and associated mental disorders via microbiota–gut–brain interactions

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Supplemental Figures and Table

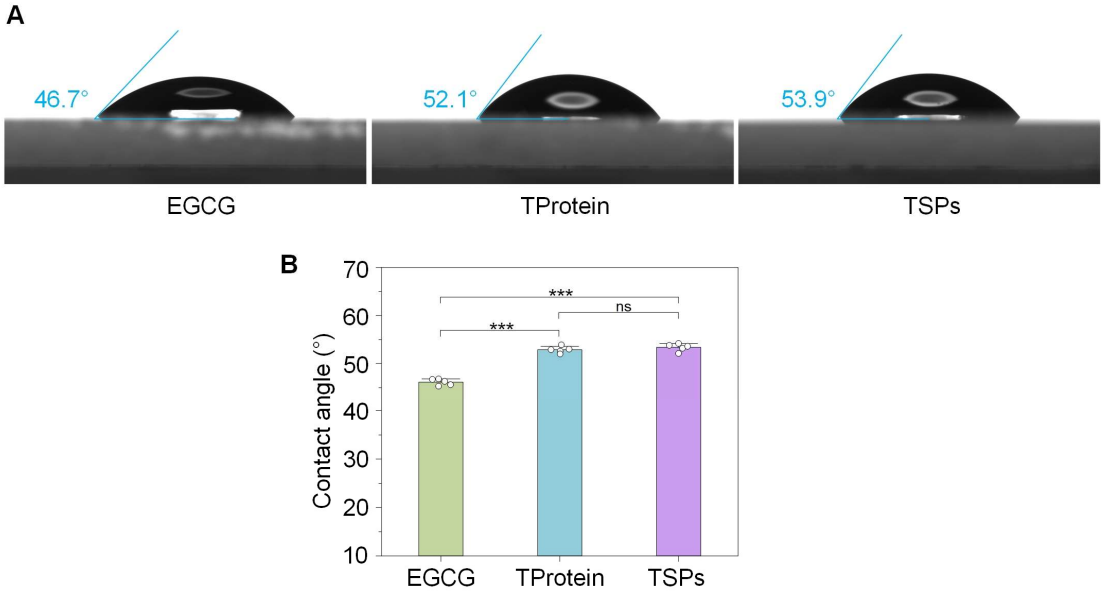

Figure S1. Picture of the contact angle of a droplet on a clean glass (A), and statistical results (B). Data are presented as means ± SD (n = 5). Statistical significance was determined using one-way Analysis of Variance (ANOVA) followed by a least significant difference (LSD) post-hoc test. ns > 0.05, *** $P < 0.001$.

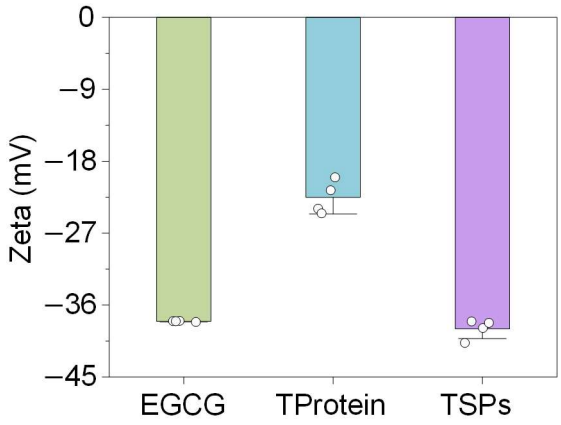

Figure S2. Zeta potential of TSPs. Data are presented as means ± SD (n = 4).

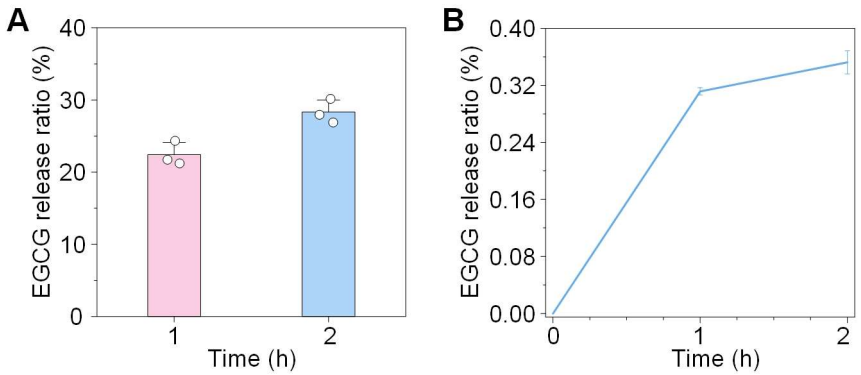

Figure S3. EGCG release from TSPs under simulated gastric conditions. (A) Release ratio of EGCG from TSPs at gastric fluid pH (pH=1.8). When the TSPs solution was adjusted to gastric fluid pH and incubated at 200 rpm for 2 h, less than 30% of EGCG was released. (B) Release of EGCG from freeze-dried TSPs in simulated gastric fluid (pH=1.8). Freeze-dried TSPs incubated in simulated gastric fluid (containing enzymes) for 2 h released less than 40% EGCG. Data are presented as means ± SD (n = 3).

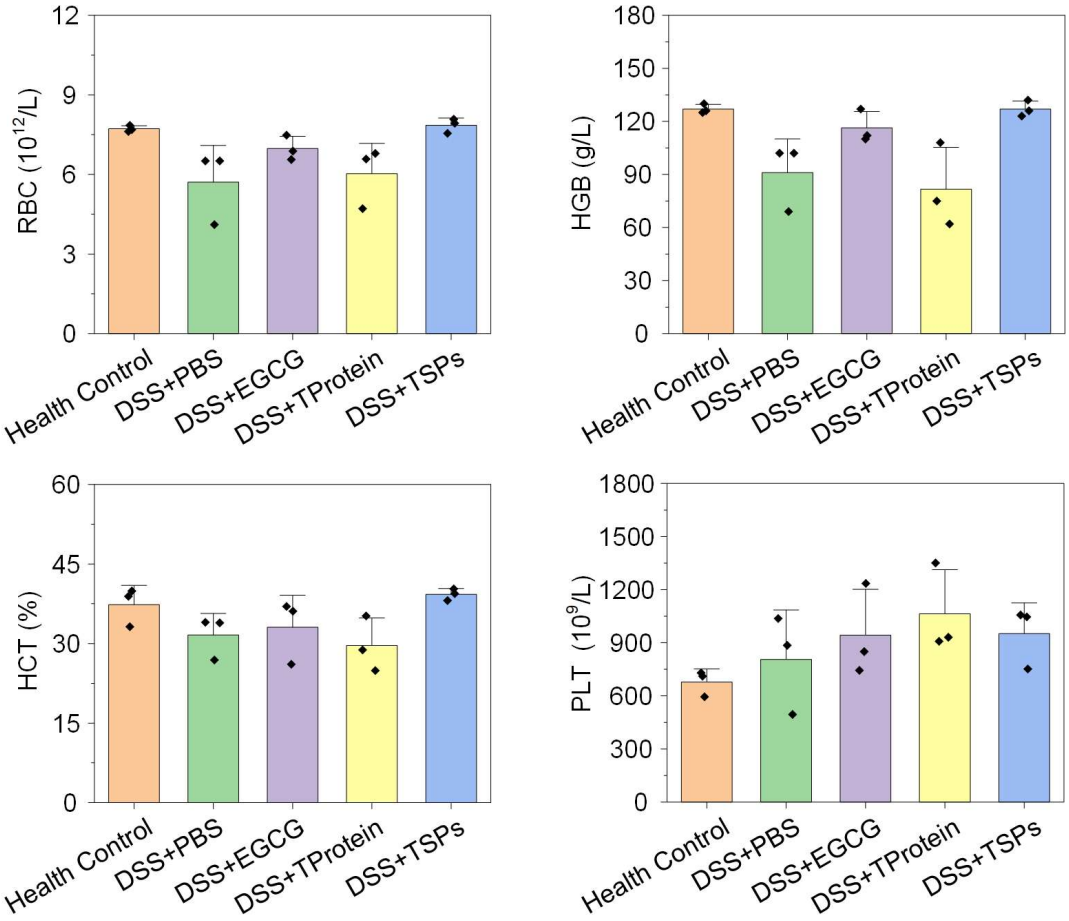

Figure S4. Comparison of red blood cell (RBC) counts, hemoglobin (HGB), hematocrit (HCT), and platelet count (PLT) in peripheral blood. The DSS+PBS group showed signs of iron-deficiency anemia with reduced RBC, HGB, and HCT levels, while TSPs treatment notably improved these parameters, approaching those of the health control group. Data are presented as means ± SD (n = 3). Statistical significance was determined using one-way ANOVA followed by an LSD post-hoc test. ns > 0.05, * P < 0.05.

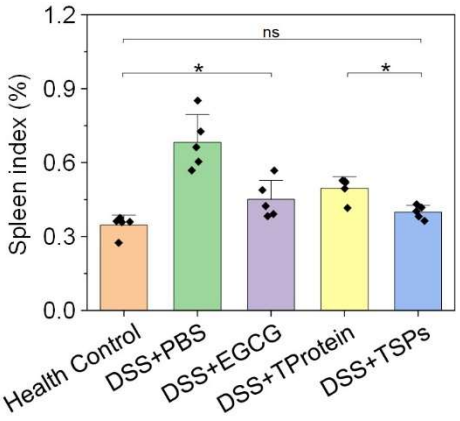

Figure S5. The changes of spleen index in different groups. Data are presented as means ± SD (n = 5). Statistical significance was determined using one-way ANOVA followed by an LSD post-hoc test. ns > 0.05, * P < 0.05.

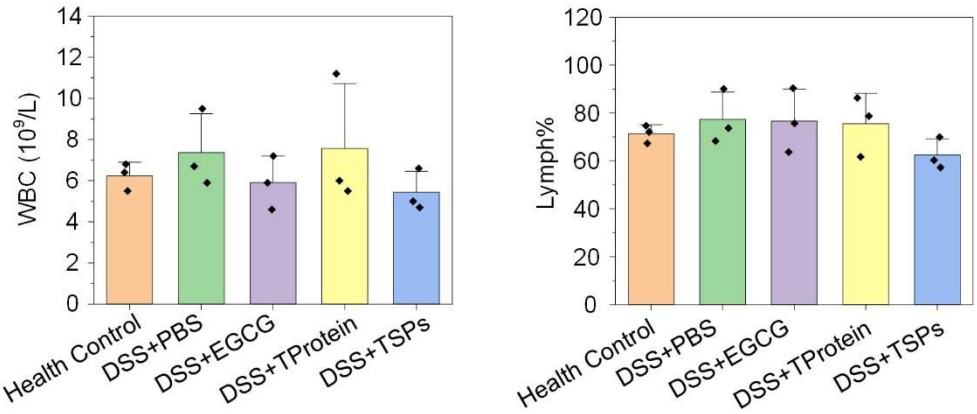

Figure S6. White blood cell (WBC) count and lymphocyte percentage (Lymph%) in peripheral blood from different treatment groups. Data are presented as means ± SD (n = 3).

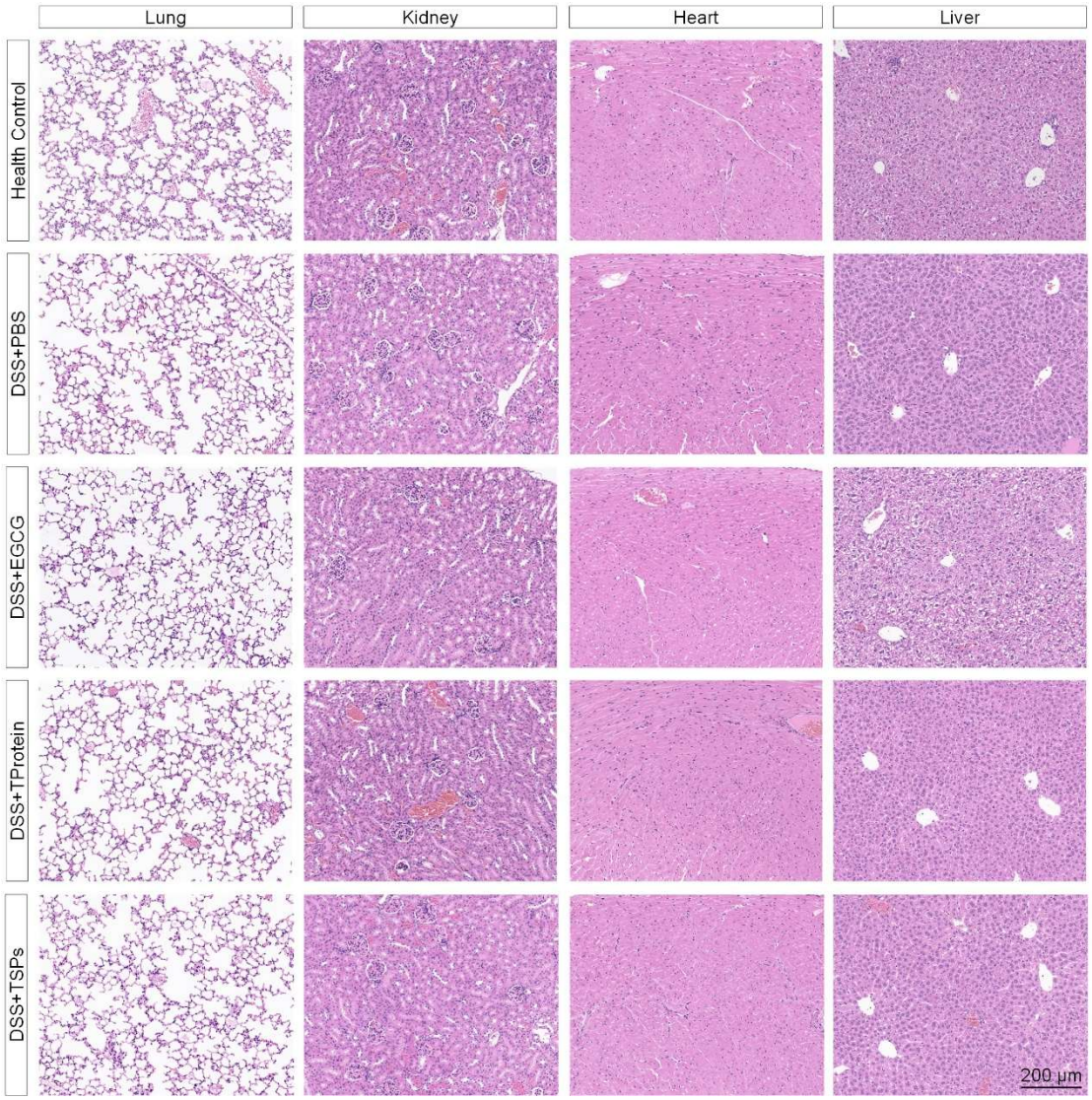

Figure S7. Safety evaluation of TSPs on tissues and organs. H&E staining of the major organs (lung, kidney, heart, and liver) of mice to evaluate the histological differences after different treatments.

Table S1. Secondary structure composition of tea and TProtein.

	α-helix	β-sheet	β-turn	random coli
Tea	9.05 ± 0.91	39.92 ± 0.75	40.57 ± 0.71	10.45 ± 0.47
TProtein	9.31 ± 0.71	34.68 ± 0.42	43.98 ± 0.59	12.03 ± 0.29

Note: Data are presented as means ± SD (n = 3).