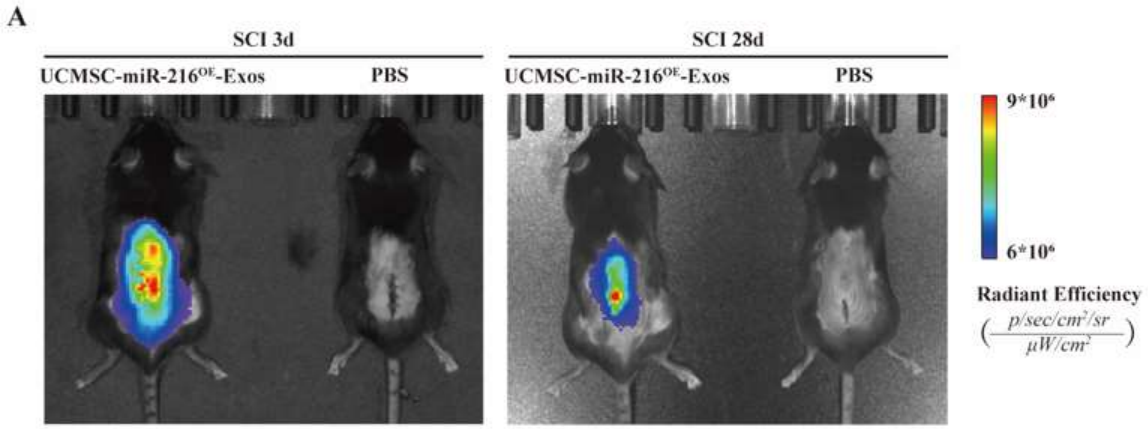

Figure S1: *In vivo* tracing of DiR-labeled UCMSC-miR-216^{OE}-Exos in the injured spinal cord in 3 days and 28 days post-SCI

(A) Representative images of In vivo tracing of DiR-labeled UCMSC-miR-216^{OE}-Exos in the injured spinal cord in 3 days and 28 days post-SCI

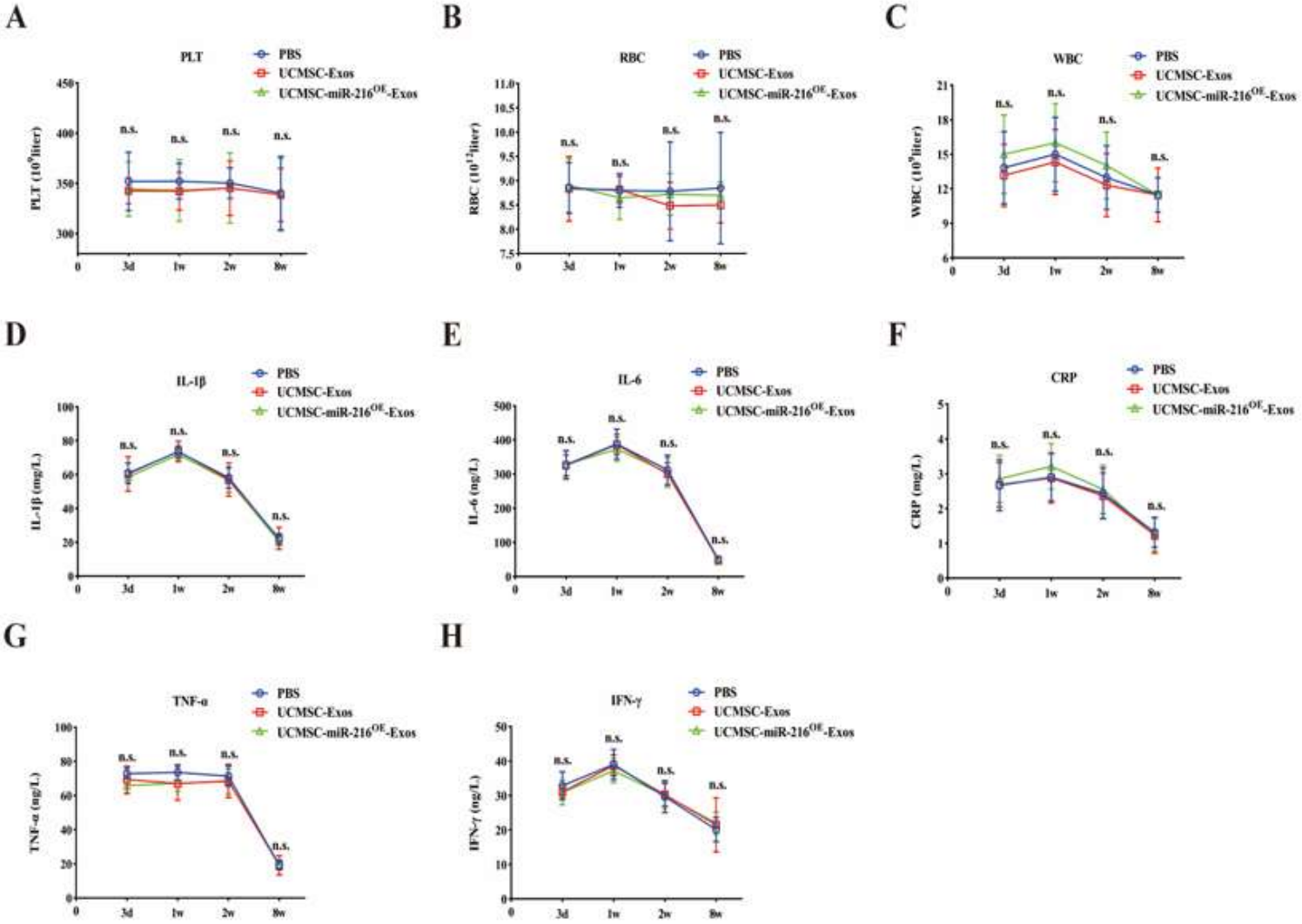

Figure S2. Toxicity studies to evaluate the safety of miR-216 overexpression *in vivo*.

(A) PLT concentration in peripheral blood at 3 days, 1 week, 2 weeks and 4 weeks post-SCI in each group

(B) RBC concentration in peripheral blood at 3 days, 1 week, 2 weeks and 4 weeks post-SCI in each group (C) WBC concentration in peripheral blood at 3 days, 1 week, 2 weeks and 4 weeks post-SCI in each group (D) IL-1β concentration in peripheral blood at 3 days, 1 week, 2 weeks and 4 weeks post-SCI in each group

(E) IL-6 concentration in peripheral blood at 3 days, 1 week, 2 weeks and 4 weeks post-SCI in each group. (F) CRP concentration in peripheral blood at 3 days, 1 week, 2 weeks and 4 weeks post-SCI in each group. (G) TNF-α concentration in peripheral blood at 3 days, 1 week, 2 weeks and 4 weeks post-SCI in each group

(H) IFN-γ concentration in peripheral blood at 3 days, 1 week, 2 weeks and 4 weeks post-SCI in each group

n=6 per group. Data are shown as mean ± SD. "" $P < 0.01$, 'n.s., no significance'. One-way ANOVA plus post Tukey's hoc test between multiple groups.

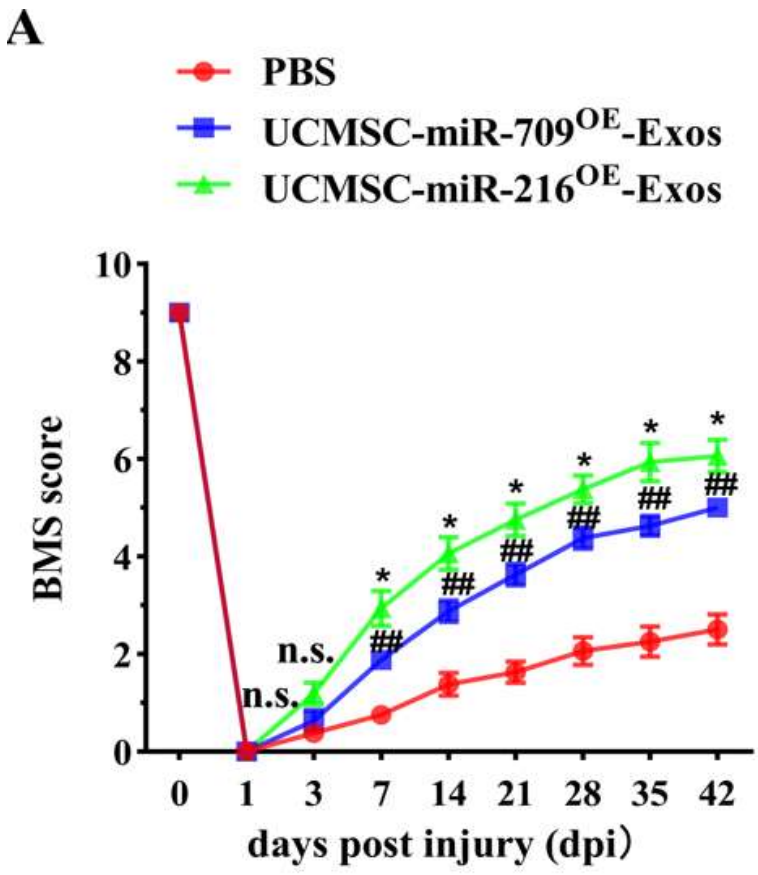

Figure S3. UCMSCs-miR-216^{OE}-Exos facilitated better functional recovery after spinal cord injury (SCI) than UCMSCs-miR-709^{OE}-Exos

(A) BMS scores in PBS, UCMSCs- miR-709^{OE}-Exos and UCMSCs-miR-216^{OE}-Exos-treated groups at different time points post-SCI. n = 10 per group. Data are shown as mean ± SD. '*' $P < 0.05$, '*' '#' $P < 0.01$, 'n.s., no significance'. Repeated measure two-way ANOVA was applied in BMS scores.