**Supplementary Material**



**Supplementary Fig. S1. Effect of WPH and treadmill exercise on gut microbiome diversity**.NOR, normal; CON, control; EXR, exercise; WPH-L/H, low-dose/high-dose whey protein hydrolysate; EWPH\_L/H, exercise + low-dose/high-dose whey protein hydrolysate



**Supplementary Fig. S2. Effect of WPH and treadmill exercise on the gut microbiome composition at the (A) class, (B) order, and (C) family level**. NOR, normal; CON, control; EXR, exercise; WPH-L/H, low-dose/high-dose whey protein hydrolysate; EWPH\_L/H, exercise + low-dose/high-dose whey protein hydrolysate.