**Supplementary Figure.**

Changes of peripheral immune B-cell subsets in participants (n=41) before (hollow column) and one month after hepatitis B booster dose (filled column). Children were grouped by different titers of anti-HBs pre-booster ([0,10) mIU/mL (red), [10,100) mIU/mL (green)). \*: A significant difference. \**P* < 0.05, \*\**P* < 0.01, \*\*\**P* < 0.001, \*\*\*\**P* < 0.0001. (A) Flow cytometry gating strategy for B-cell subsets. Stepwise gating strategy for identification of memory B-cell (CD19+CD27+), CD24hiCD38- memory B (CD19+CD24++CD38-), unswitched memory B (CD19+CD27+IgD+), double negative B cells (CD19+CD27-IgD-), mature naive B (CD24intCD38int); naive B-cell (CD19+CD27-IgD+), transitional B-cell (CD19+CD24++CD38++) subsets and plasmablasts (CD19+CD24 CD38++). (B) Among the peripheral lymphocytes, B-cell frequency decreased significantly in two groups (*P* =0.0002). (C) In children with low preexisting anti-HBs titer group ([0,10) mIU/mL), Naive B cells (*P*=0.0387) and DN B cells (*P*=0.0134) were significantly increased, whereas unswitched MB cells decreased (*P*=0.0005). In high preexisting anti-HBs titer group ([10,100) mIU/mL), Naive B cells (*P* < 0.0001) and and DN B cells (*P*= 0.0013) were significantly increased in responders, whereas plasmablasts (*P*=0.0456), Memory B cells (*P*=0.0001), unswitched MB cells (*P*=0.0002) and CD24hiCD38- memory B cells (*P*=0.0137) decreased. Abbreviations: Pre-: pre-booster; Post-: post-booster; MB: memory B cells; DN B: double negative B cells.

