Supplementary Figure legend

Supplementary Figure 1. The diagram of plasmids encoding L1 and L2 proteins of HPV16 and HPV18. The major enzymatic sites and features were indicated.

Supplementary Figure 2. The neutralization end-point of the purified antibody. Green line was labeled as rabbits receiving HPV16 L1-L2 VLPs immunization, Blue line was labeled as rabbits receiving HPV18 L1-L2 VLPs immunization, Black line was labeled as rabbits receiving PBS immunization. Red line was labeled as the positive control of Heparin x 10 (The real concentration of heparin is 10 times higher than that labeled in X axis). The end-point of the anti-sera from different groups inhibiting the infection of HPV16 (A), HPV18 (B), HPV 31 (C) and HPV45 (D), respectively. (E) Summary of the neutralization end-point (IC_{50} and IC_{90}) of the purified antibody against different subtypes of HPV.

Supplementary Figure 3. The neutralization of the third anti-sera. The blue line (YCL-01 and YCL02) indicated the animal number receiving our YCL-HPV 16/18 L1-L2 VLPs immunization, the pink line (GSK-01 and GSK-02) indicated the animal number receiving the immunization of the Cervarix of GSK., the third anti-sera from different animal neutralized HPV16 (A) HPV18 (B), HPV31(C) and HPV45 (D), respectively.

Supplementary Figure 4. Electron microscopy negative staining image showing VLPs based on L1-L2 protein of HPV6/11/31/52/58 at different scale as indicated.