

Figure S1. Schematic illustration of the synthesis of the T7. (A) Procedure of the synthesis of T7. (B) Calculation of ratio of MUC1 peptide conjugated with T7. T7, Toll-like receptor 7 agonist; MUC1, mucin 1.

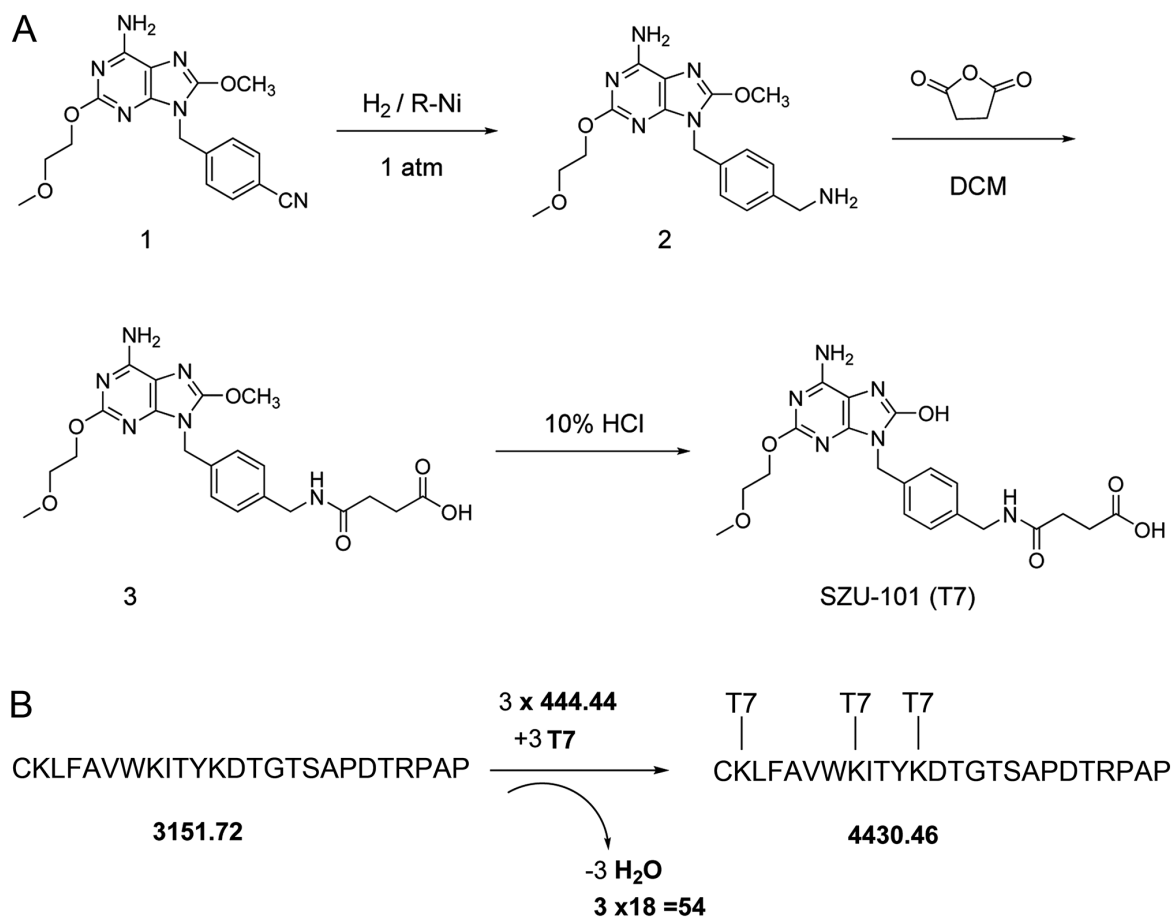


Figure S2. Structure confirmation of Toll-like receptor 7 agonist. (A)  $^{13}\text{C}$  NMR. (B)  $^1\text{H}$  NMR. NMR, nuclear magnetic resonance.

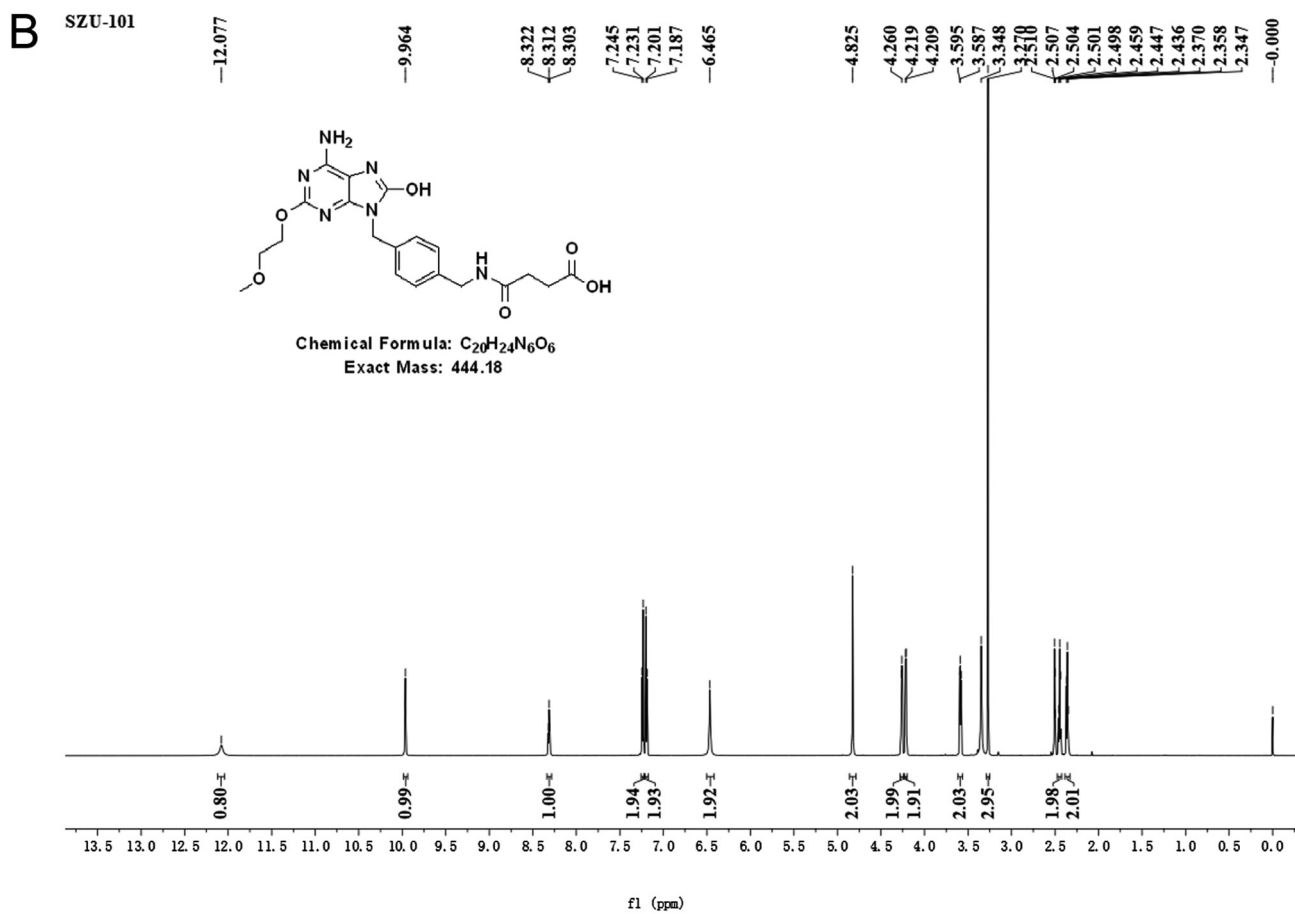
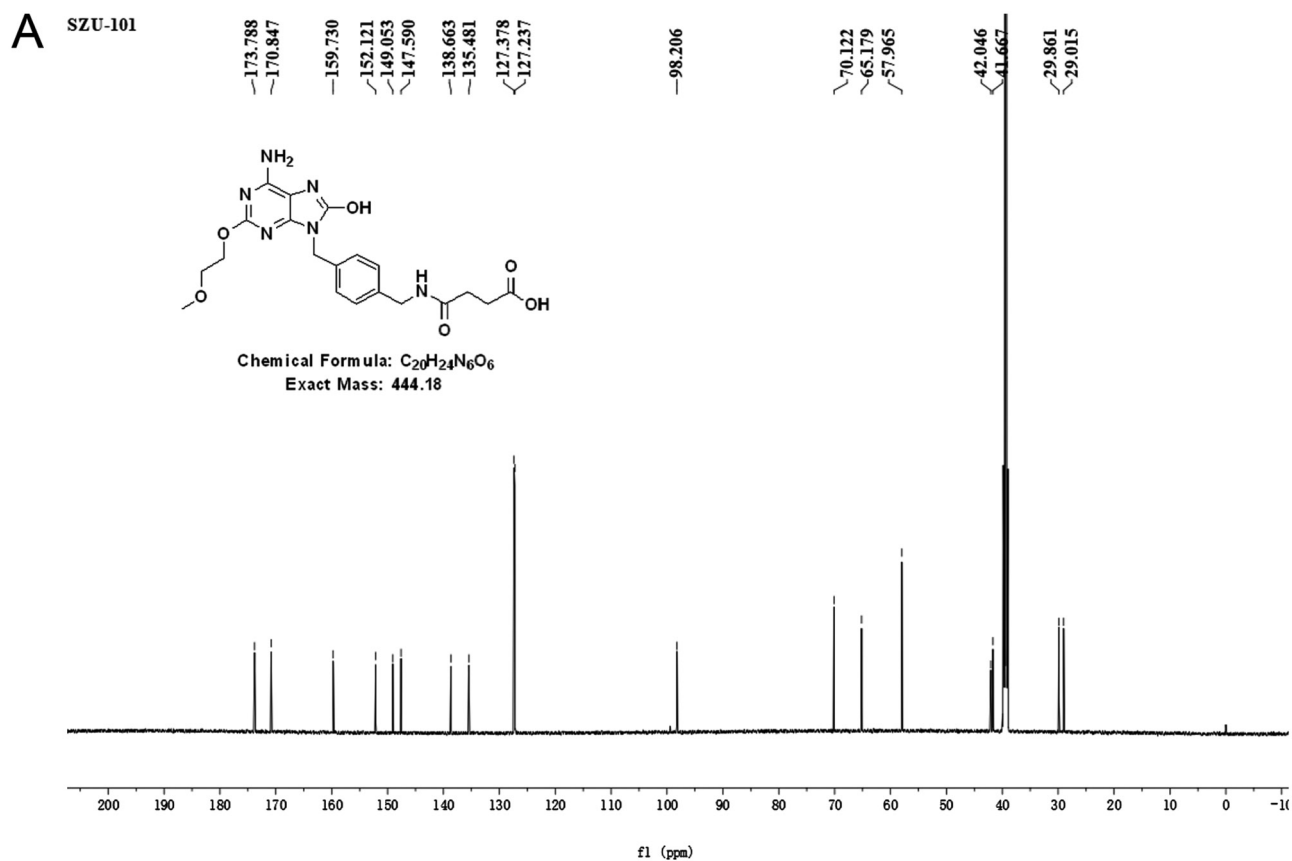


Figure S3. Certificate of analysis of T7-MUC1 conjugation by HYBIO. (A) Purity. (B) Molecular weight. T7, Toll-like receptor 7 agonist; MUC1, mucin 1.

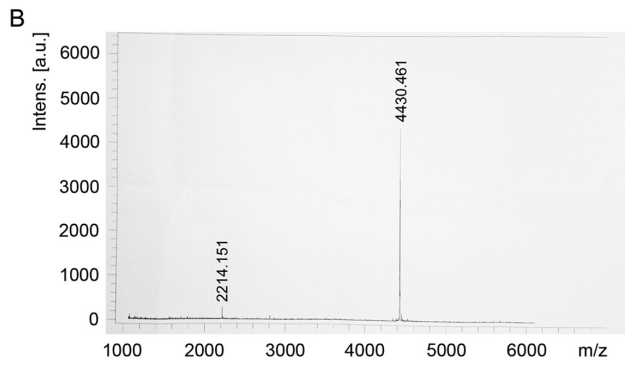
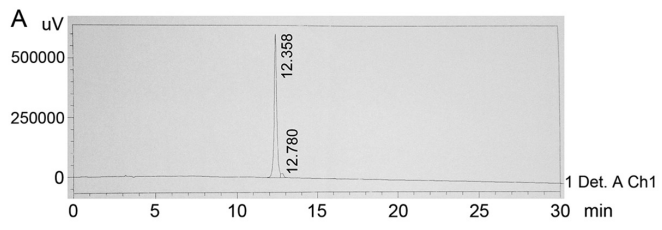


Figure S4. Representative flow cytometry plots of (A) CD3<sup>+</sup>/CD4<sup>+</sup> and (B) CD3<sup>+</sup>/CD8<sup>+</sup> T cells in splenocytes. T7, Toll-like receptor 7 agonist; MUC1, mucin 1.

