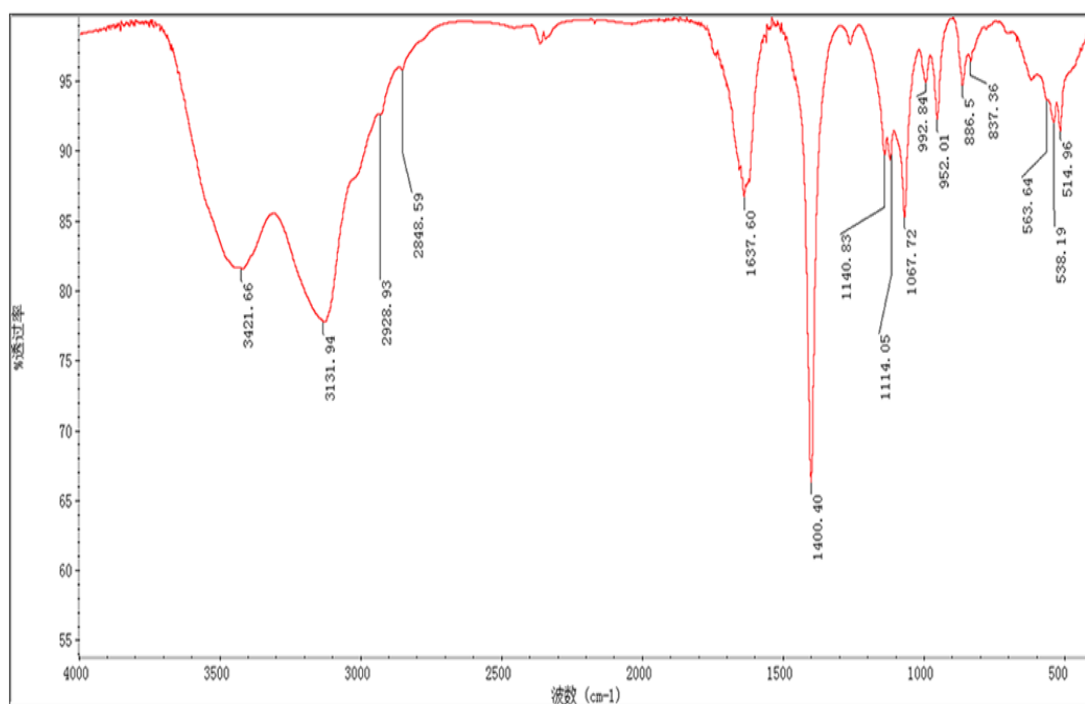


**Supplementary data 1** FT-IR of ACP2.



**Supplementary data 2** The methylated productions of ACP2 were analyzed by GC-MS. (A) Chromatogram spectrum of GC-MS of ACP2. (B) MS spectrum of 2,3,4-Me<sub>3</sub>-6-deoxy-Glcp. (C) MS spectrum of 2,3,4,6-Me<sub>4</sub>-Glcp. (D) MS spectrum of 2,4,6-Me<sub>3</sub>-Glcp. (E) MS spectrum of 2,3,4-Me<sub>3</sub>-Glcp. (F) MS spectrum of 2,3,4-Me<sub>3</sub>-Galp. (G) MS spectrum of 3,6-Me<sub>2</sub>-Glcp.

