

Supplementary Figure

Fig.S1

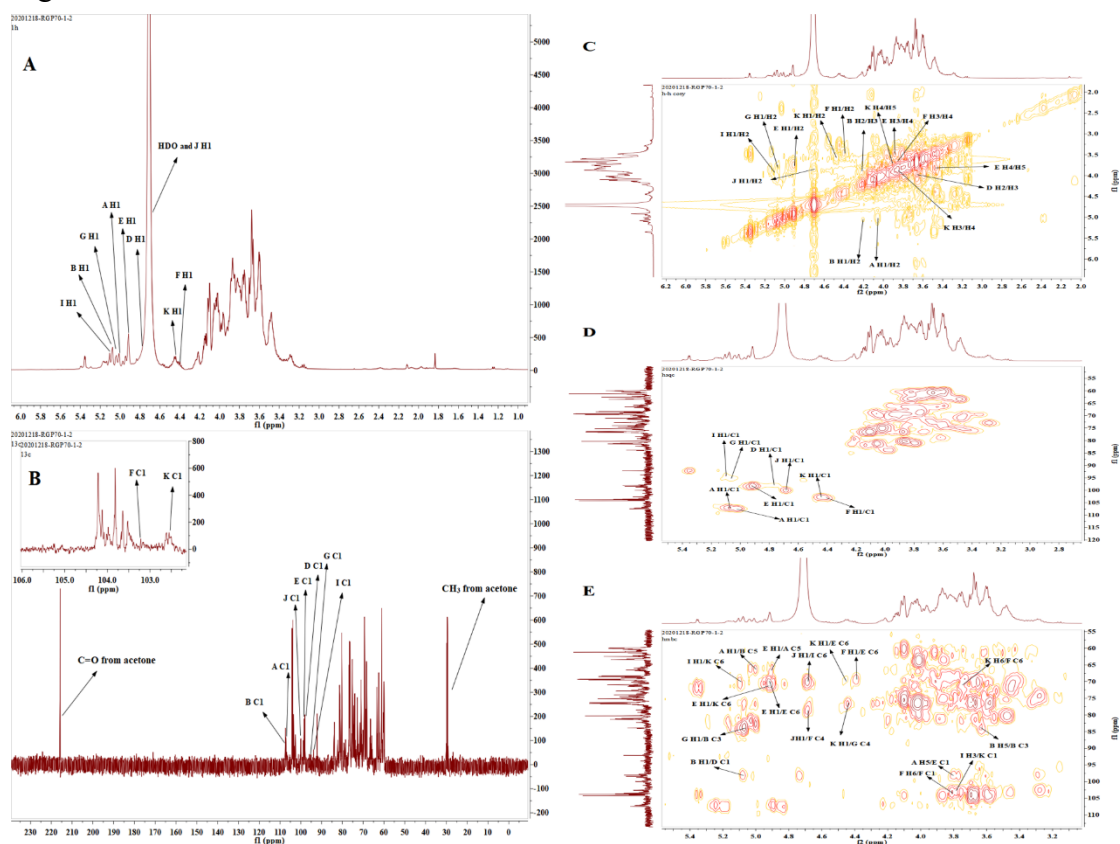


Fig.S1  $^1\text{H}$ -NMR (A),  $^{13}\text{C}$ -NMR (B),  $^1\text{H}$ - $^1\text{H}$  COSY (C), HSQC (D) and HMBC (E) spectra of RGP70-1-2.

Supplementary Tables

Table S1 The chromatographic conditions of HPLC

chromatographic column	Agilent ZORBAX Eclipse XDB-C18 (5 $\mu\text{m}$ , 4.6 $\times$ 250 mm)
mobile phase	water-acetonitrile-phosphate buffer solution (0.05 M, pH 6.72)
flow rate	1 mL/min
Injection volume	10 $\mu\text{M}$
detection wavelength	250 nm

Table S2 The program of HPLC gradient elution

Time/min	Water/%	Acetonitrile/%	phosphate buffer solution/%
0	-	17	83
24	-	17	83
25	-	19	81
30	-	18	82
31	5	14	81
32	5	14	81
33	-	18	82
34	5	14	81
36	-	18	82

Table S3 Infrared Spectral Characteristic Absorption Peaks of RGP70-1-1 and RGP70-1-2

Wave number(cm <sup>-1</sup> )	Functional group
3410	O-H <sup>1</sup>
2933	C-H <sup>2</sup>
1693	C-C <sup>3</sup>
1421	C-H <sup>3</sup>
1264, 1241	C-O <sup>4</sup>
1067, 1027, 1064	C-O-C of sugar ring and Glycosidic bond <sup>5</sup>
875	$\alpha$ -glycosidic bond <sup>5</sup>
807, 805	C-H of the furan ring <sup>6</sup>
613	O-H <sup>6</sup>

Table S4 The results of methylation analysis of RGP70-1-1

Retention time	PMAA	Type of linkage	Mass fragments(m/z)	Molar ratios
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12.33	1,4-di- <i>O</i> -acetyl- 2,3,5-tri- <i>O</i> -methyl- L-arabinitol	L-Araf-(1→	43, 59, 71, 87, 101, 117, 129, 145, 161	6.2
14.41	1,3,4-tri- <i>O</i> -acetyl- 2,5-di- <i>O</i> -methyl-L- arabinitol	→3)-L-Araf- (1→	43, 58, 71, 87, 99, 117, 129, 147, 159, 173, 201, 233	1.4
15.13	1,4,5-tri- <i>O</i> -acetyl- 2,3-di- <i>O</i> -methyl-L- arabinitol	→5)-L-Araf- (1→	43, 58, 71, 87, 101, 117, 129, 161, 173, 189	2.3
15.93	1,5-di- <i>O</i> -acetyl- 2,3,4,6-tetra- <i>O</i> - methyl-D-mannitol	D-Manp-(1→	43, 59, 71, 87, 101, 113, 117, 129, 145, 157, 161, 173, 189, 205	2.3
16.49	1,5-di- <i>O</i> -acetyl- 2,3,4,6-tetra- <i>O</i> - methyl-D-galactitol	D-Galp-(1→	43, 59, 71, 87, 101, 117, 129, 145, 157, 161, 173, 189, 205	3.3
16.90	1,3,4,5-tetra- <i>O</i> - acetyl-2- <i>O</i> -methyl- L-arabinitol	→3,5)-L-Araf- (1→	43, 58, 74, 85, 99, 117, 127, 141, 159, 172, 187, 201, 217, 261	3.4
17.13	1,2,4,5-tetra- <i>O</i> - acetyl-3- <i>O</i> -methyl- L-arabinitol	→2,5)-L-Araf- (1→	43, 59, 74, 81, 87, 99, 113, 129, 145, 159, 172, 189	1.0
17.88	1,2,5-tri- <i>O</i> -acetyl- 3,4,6-tri- <i>O</i> -methyl- D-mannitol	→2)-D-Manp- (1→	43, 59, 71, 87, 99, 117, 129, 141, 161, 171, 189	1.6
18.06	1,4,5-tri- <i>O</i> -acetyl- 2,3,6-tri- <i>O</i> -methyl- D-mannitol	→4)-D-Manp- (1→	43, 59, 71, 87, 101, 117, 129, 143, 161, 173, 189, 203, 233, 277	1.0
18.33	1,4,5-tri- <i>O</i> -acetyl- 2,3,6-tri- <i>O</i> -methyl- D-galactitol	→4)-D-Galp- (1→	43, 57, 71, 87, 99, 117, 131, 142, 157, 173, 187, 203, 233	4.0
18.54	1,5,6-tri- <i>O</i> -acetyl- 2,3,4-tri- <i>O</i> -methyl- D-glucitol	→6)-D-Glcp- (1→	43, 58, 71, 87, 99, 101, 117, 129, 143, 159, 161, 173, 189, 233	3.7
20.11	1,4,5,6-tetra- <i>O</i> - acetyl-2,3-di- <i>O</i> - methyl-D- glucitol	→4,6)-D- Glcp-(1→	43, 58, 74, 85, 101, 117, 127, 142, 161, 171, 187, 201, 231, 261	1.7
20.22	1,4,5,6-tetra- <i>O</i> - acetyl-2,3-di- <i>O</i> - methyl-D-galactitol	→4,6)-D- Galp-(1→	43, 58, 85, 101, 117, 129, 142, 159, 187, 201, 231, 261	1.5

20.85	1,3,5,6-tetra- <i>O</i> -acetyl-2,4-di- <i>O</i> -methyl-D-glucitol	→3,6)-D-Glcp-(1→	43, 58, 74, 87, 101, 117, 129, 139, 159, 173, 189, 233, 245, 305	1.7
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PMAA: Partially Methylated Alditol Acetate

Table S5 The results of methylation analysis of RGP70-1-2

Retention time	PMAA	Type of linkage	Mass fragments(m/z)	Molar ratios
15.81	1,4,5-tri- <i>O</i> -acetyl-2,3-di- <i>O</i> -methyl-L-arabinitol	→5)-L-Araf-(1→	43, 58, 71, 87, 101, 117, 129, 161, 173, 189	1.0
16.71	1,5-di- <i>O</i> -acetyl-2,3,4,6-tetra- <i>O</i> -methyl-D-glucitol	D-Glcp-(1→	43, 59, 71, 87, 101, 117, 129, 145, 161, 205	1.7
17.29	1,5-di- <i>O</i> -acetyl-2,3,4,6-tetra- <i>O</i> -methyl-D-galactitol	D-Galp-(1→	43, 59, 71, 87, 101, 117, 129, 145, 157, 161, 173, 191, 205	2.6
17.66	1,3,4,5-tetra- <i>O</i> -acetyl-2- <i>O</i> -methyl-L-arabinitol	→3,5)-L-Araf-(1→	43, 58, 74, 85, 99, 117, 127, 141, 159, 172, 187, 201, 217, 261	1.4
19.02	1,4,5-tri- <i>O</i> -acetyl-2,3,6-tri- <i>O</i> -methyl-D-mannitol	→4)-D-Manp-(1→	43, 59, 71, 87, 101, 117, 129, 143, 161, 173, 203, 233, 277	1.2
19.36	1,5,6-tri- <i>O</i> -acetyl-2,3,4-tri- <i>O</i> -methyl-D-glucitol	→6)-D-Glcp-(1→	43, 59, 71, 87, 99, 101, 117, 129, 143, 159, 173, 189, 233	3.4
20.03	1,5,6-tri- <i>O</i> -acetyl-2,3,4-tri- <i>O</i> -methyl-D-galactitol	→6)-D-Galp-(1→	43, 59, 71, 87, 99, 117, 129, 143, 159, 173, 189, 233	3.2
21.11	1,4,5,6-tetra- <i>O</i> -acetyl-2,3-di- <i>O</i> -methyl-D-glucitol	→4,6)-D-Glcp-(1→	43, 58, 85, 101, 117, 127, 142, 159, 187, 201, 231, 261, 305	1.7
21.62	1,3,5,6-tetra- <i>O</i> -acetyl-2,4-di- <i>O</i> -	→3,6)-D-Manp-(1→	43, 58, 74, 87, 117, 129, 139, 159, 173, 189, 207,	1.1

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## Isolation, Structural characterization, and Hypoglycemic Activities

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