Isolation and Identification of Flavonoids from the Saudi Arabian Plant Retama raetam which Stimulate Secretion of Insulin and Inhibit α-Glucosidase

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Table S1: $^1$H and $^{13}$C NMR spectroscopic data for 4,9,10 in (CD$_3$)$_2$SO [$\delta$, multiplicity (J Hz); $\delta$, type]

Table S2: Insulin secretion data
Fig. S1. HRMS of 1
Fig. S2. $^1$H NMR spectrum of 1
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Fig. S43. COSY spectrum of 6
Fig. S44. HMBC spectrum of 6
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Fig. S50. COSY spectrum of 7
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Fig. S74. CD spectrum of 5. Concentration 857 μg mL⁻¹.

Fig. S75. CD spectrum of 8. Concentration 857 μg mL⁻¹.
Table S1. $^1$H and $^{13}$C NMR spectroscopic data for 4,9,10 in (CD$_3$)$_2$SO [δ$_H$, multiplicity (J Hz); δ$_C$, type]

<table>
<thead>
<tr>
<th>Position</th>
<th>δ$_H$ (ppm)</th>
<th>δ$_C$ (ppm)</th>
<th>δ$_H$ (ppm)</th>
<th>δ$_C$ (ppm)</th>
<th>δ$_H$ (ppm)</th>
<th>δ$_C$ (ppm)</th>
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<td>8.37, s</td>
<td>154.67, CH</td>
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<td>121.99, C$_q$</td>
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<td>4</td>
<td>182.6, C$_q$</td>
<td>180.88, C$_q$</td>
<td>182.59, C$_q$</td>
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<td>4a</td>
<td>104.1, C$_q$</td>
<td>105.74, C$_q$</td>
<td>106.41, C$_q$</td>
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<td>157.14, C$_q$</td>
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<td>159.72, C$_q$</td>
<td>165.61, C$_q$</td>
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<td>8</td>
<td>106.5, C$_q$</td>
<td>6.47, s</td>
<td>94.94, CH</td>
<td>6.81, CH</td>
<td>91.24, CH</td>
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<tr>
<td>8a</td>
<td>154.9, C$_q$</td>
<td>157.95, C$_q$</td>
<td>153.93, C$_q$</td>
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<tr>
<td>1'</td>
<td>122.0, C$_q$</td>
<td>121.49, C$_q$</td>
<td>121.58, C$_q$</td>
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<tr>
<td>2',6'</td>
<td>7.91, d, J = 8.5</td>
<td>128.8, CH</td>
<td>7.39, d, J = 8.4</td>
<td>130.64, CH</td>
<td>7.43, d, J = 8.4</td>
<td>130.74, CH</td>
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<td>116.5, CH</td>
<td>6.84, d, J = 8.4</td>
<td>115.54, CH</td>
<td>6.85, d, J = 8.4</td>
<td>115.57, CH</td>
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<td>156.30, C$_q$</td>
<td>157.93, C$_q$</td>
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<td>5.20, ca. t</td>
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<td>130.74, CH</td>
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<td>126.69, CH</td>
<td>5.52, s</td>
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<td>67.90, C$_q$</td>
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<td>1.54, s</td>
<td>29.25, CH$_3$</td>
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<tr>
<td>6''</td>
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<td>1.36, s</td>
<td>23.69, CH$_3$</td>
<td>1.54, s</td>
<td>29.25, CH$_3$</td>
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<tr>
<td>HO-5</td>
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<td>5.13, t, J = 5.6</td>
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<td>9.64, s</td>
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<td>9.64, s</td>
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</table>
Glucose-stimulated insulin secretion by pure compounds. Mice islets were incubated in KRB buffer containing 16.7 glucose supplemented with or without pure compound (200 µM) / TB (200 µM) and secreted insulin was measured by ELISA. All data points are an average of a minimum of n = 3 separate experiments and are expressed as means ± SEM. TB, (tolbutamide) was used as a positive control.