SUPPLEMENTARY MATERIAL

Xanthones from the herb of *Swertia elata* and their Anti-TMV Activity

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ABSTRACT

Two new xanthones (1-2), together with four known ones (3-6), were isolated from whole herb of Swertia elata. Their structures were elucidated by spectroscopic methods including extensive $^1$D- and $^2$D-NMR techniques. Compounds 1-6 were also evaluated for their anti-tobacco mosaic virus (Anti-TMV) activities. The results revealed that that 1-6 showed weak anti-TMV activities with inhibition rate in the range of 15.2–28.8%.

Keywords: Swertia elata, Xanthones, Anti-TMV activity
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Table S1. $^1$H and $^{13}$C NMR Data of Compounds 1 and 2 ($\delta$ in ppm, in C$_5$D$_5$N, 500 and 125 MHz).

| No. | $^1$C ($\delta$) | $^1$H (m. J, Hz) | $^1$C ($\delta$) | $^1$H (m. J, Hz) |
|-----|------------------|------------------|------------------|------------------|
| 1   | 155.0 s          |                  | 154.8 s          |                  |
| 2   | 118.4 d          | 7.09 d (2.2)     | 118.0 d          | 7.00 d (2.2)     |
| 3   | 158.9 s          |                  | 158.4 s          |                  |
| 4   | 120.9 d          | 6.70 d (2.2)     | 120.6 d          | 6.70 d (2.2)     |
| 5   | 120.5 d          | 7.72 s           | 122.1 d          | 7.70 s           |
| 6   | 140.5 s          |                  | 134.0 s          |                  |
| 7   | 159.9 s          |                  | 162.9 s          |                  |
| 8   | 109.0 d          | 7.43 s           | 109.1 d          | 7.74 s           |
| 9   | 176.5 s          |                  | 176.1 s          |                  |
| 4a  | 155.8 s          |                  | 156.0 s          |                  |
| 8a  | 113.5 s          |                  | 115.9 s          |                  |
| 9a  | 112.7 s          |                  | 111.2 s          |                  |
| 10a | 147.0 s          |                  | 148.0 s          |                  |
| 1’  | 36.3 t           | 2.62 t (7.2)     |                  | 198.6 s          |
| 2’  | 63.8 t           | 3.62 t (7.2)     | 30.7 q           | 2.51 s           |
| 1-OMe | 55.9 q         | 3.87 s           | 56.0 q           | 3.86 s           |
| 3-OMe | 56.2 q         | 3.83 s           | 56.3 q           | 3.81 s           |
| 7-OMe | 56.1 q         | 3.89 s           | 56.2 q           | 3.88 s           |
Figure S1. $^{13}$C NMR spectrum of Compounds 1
Figure S2. $^1$H NMR spectrum of Compounds 1
Figure S3. $^{13}$C NMR spectrum of Compounds 2
Figure S4. $^1$H NMR spectrum of Compounds 2