

SUPPLEMENTARY MATERIAL

Figure S1-1. ^1H NMR spectrum of ginsengenin-S1 (**1**) in pyridine (600 MHz).

Figure S1-2. ^{13}C NMR spectrum of ginsengenin-S1 (**1**) in pyridine (150 MHz).

Figure S1-3. Heteronuclear single quantum correlation (HSQC) spectrum of ginsengenin-S1 (**1**) in pyridine.

Figure S1-4. Heteronuclear multiple bond correlation (HMBC) spectrum of ginsengenin-S1 (**1**) in pyridine.

Figure S1-5. ^1H - ^1H correlation spectroscopy (^1H - ^1H COSY) spectrum of ginsengenin-S1 (**1**) in pyridine.

Figure S1-6. Nuclear Overhauser effect spectroscopy (NOESY) spectrum of ginsengenin-S1 (**1**) in pyridine.

Figure S1-7. High resolution electrospray ionization mass spectroscopy (HRESIMS) spectrum of ginsengenin-S1 (**1**).

Figure S1-8. Infrared (IR) spectrum of ginsengenin-S1 (**1**).

Figure S2-1. ^1H NMR spectrum of ginsengenin-S2 (**2**) in pyridine (600 MHz).

Figure S2-2. ^{13}C NMR spectrum of ginsengenin-S2 (**2**) in pyridine (150 MHz).

Figure S2-3. Heteronuclear single quantum correlation (HSQC) spectrum of ginsengenin-S2 (**2**) in pyridine.

Figure S2-4. Heteronuclear multiple bond correlation (HMBC) spectrum of ginsengenin-S2 (**2**) in pyridine.

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Figure S2-8. Infrared (IR) spectrum of ginsengenin-S2 (**2**).

Figure S3-1. ^1H NMR spectrum of ginsenoside-S3 (**3**) in pyridine (600 MHz).

Figure S3-2. ^{13}C NMR spectrum of ginsenoside-S3 (**3**) in pyridine (150 MHz).

Figure S3-3. Heteronuclear single quantum correlation (HSQC) spectrum of ginsenoside-S3 (**3**) in pyridine.

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Figure S3-6. Infrared (IR) spectrum of ginsenoside-S3 (**3**).

Figure S4-1. ^1H NMR spectrum of ginsenoside-S4 (**4**) in pyridine (600 MHz).

Figure S4-2. ^{13}C NMR spectrum of ginsenoside-S4 (**4**) in pyridine (150 MHz).

Figure S4-3. Heteronuclear single quantum correlation (HSQC) spectrum of ginsenoside-S4 (**4**) in pyridine.

Figure S4-4. Heteronuclear multiple bond correlation (HMBC) spectrum of ginsenoside-S4 (**4**) in pyridine.

Figure S4-5. High resolution electrospray ionization mass spectroscopy (HRESIMS) spectrum of ginsenoside-S4 (**4**).

Figure S4-6. Infrared (IR) spectrum of ginsenoside-S4 (**4**).

Figure S5-1. ^1H NMR spectrum of ginsenoside-S5 (**5**) in pyridine (600 MHz).

Figure S5-2. ^{13}C NMR spectrum of ginsenoside-S5 (**5**) in pyridine (150 MHz).

Figure S5-3. Heteronuclear single quantum correlation (HSQC) spectrum of ginsenoside-S5 (**5**) in pyridine.

Figure S5-4. Heteronuclear multiple bond correlation (HMBC) spectrum of ginsenoside-S5 (**5**) in pyridine.

Figure S5-5. High resolution electrospray ionization mass spectroscopy (HRESIMS) spectrum of ginsenoside-S5 (**5**).

Figure S5-6. Infrared (IR) spectrum of ginsenoside-S5 (**5**).

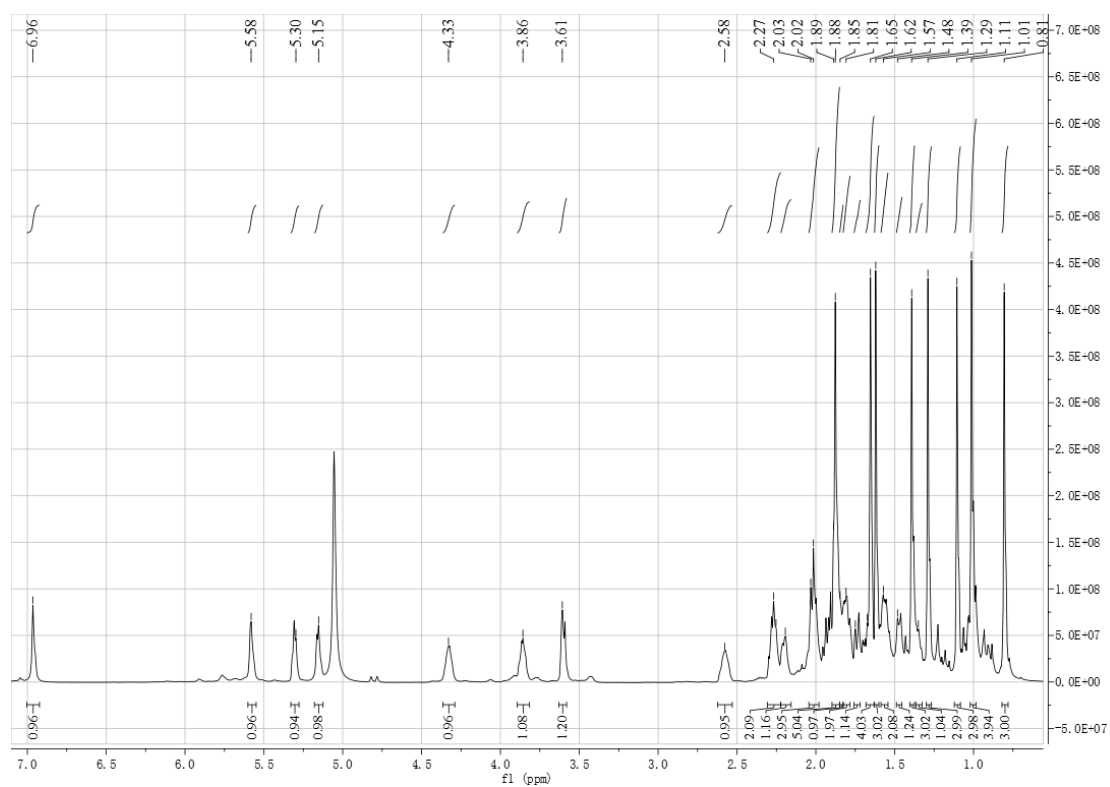


Figure S1-1. ^1H NMR spectrum of ginsengenin-S1 (1) in pyridine (600MHz).

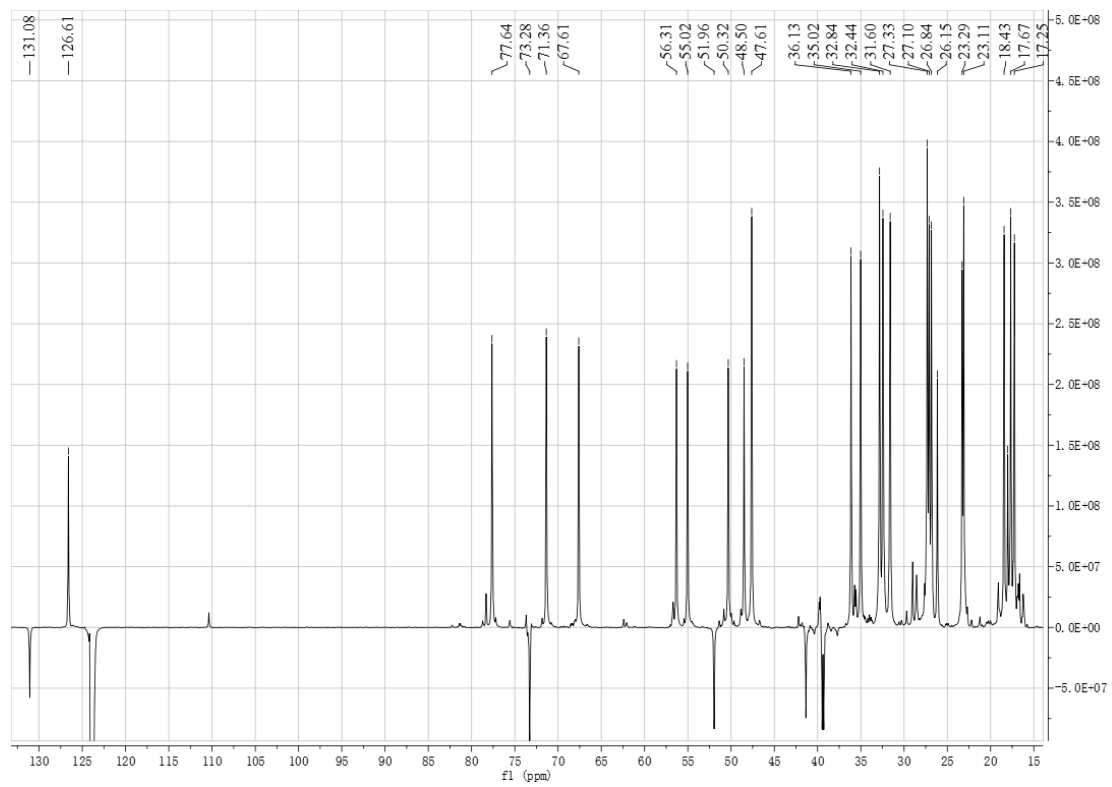


Figure S1-2. ^{13}C NMR spectrum of ginsengeni-S1 (**1**) in pyridine (150MHz).

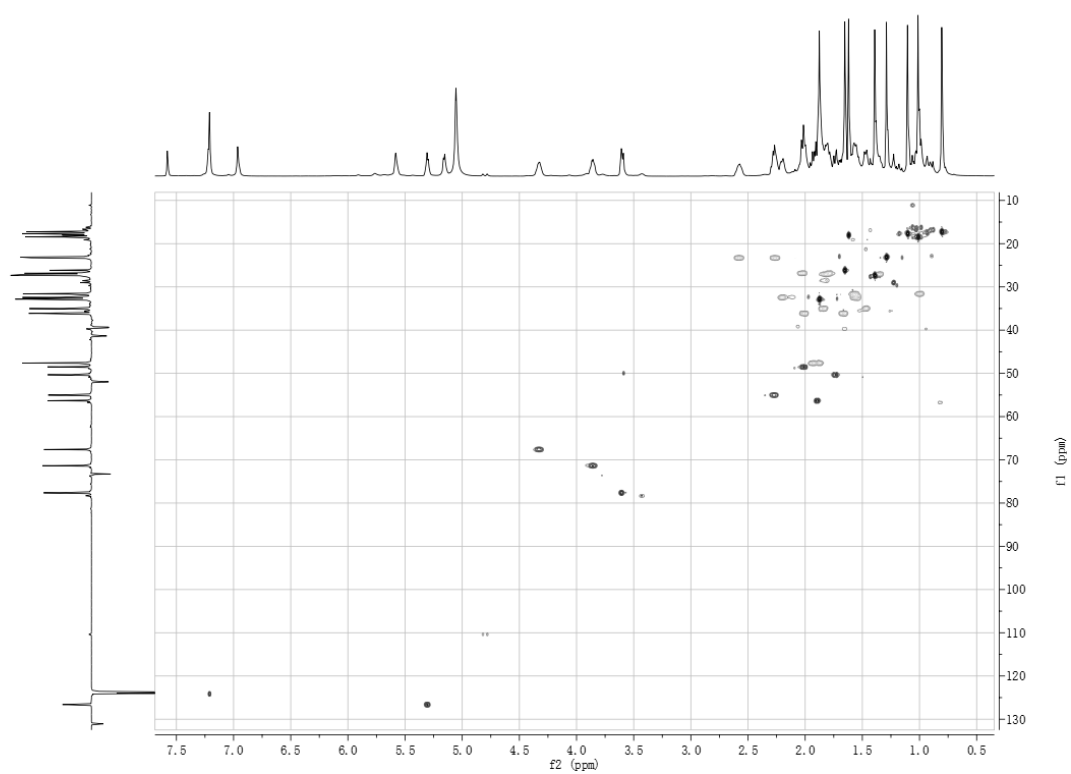


Figure S1-3. Heteronuclear single quantum correlation (HSQC) spectrum of ginsengenin-S1 (**1**) in pyridine.

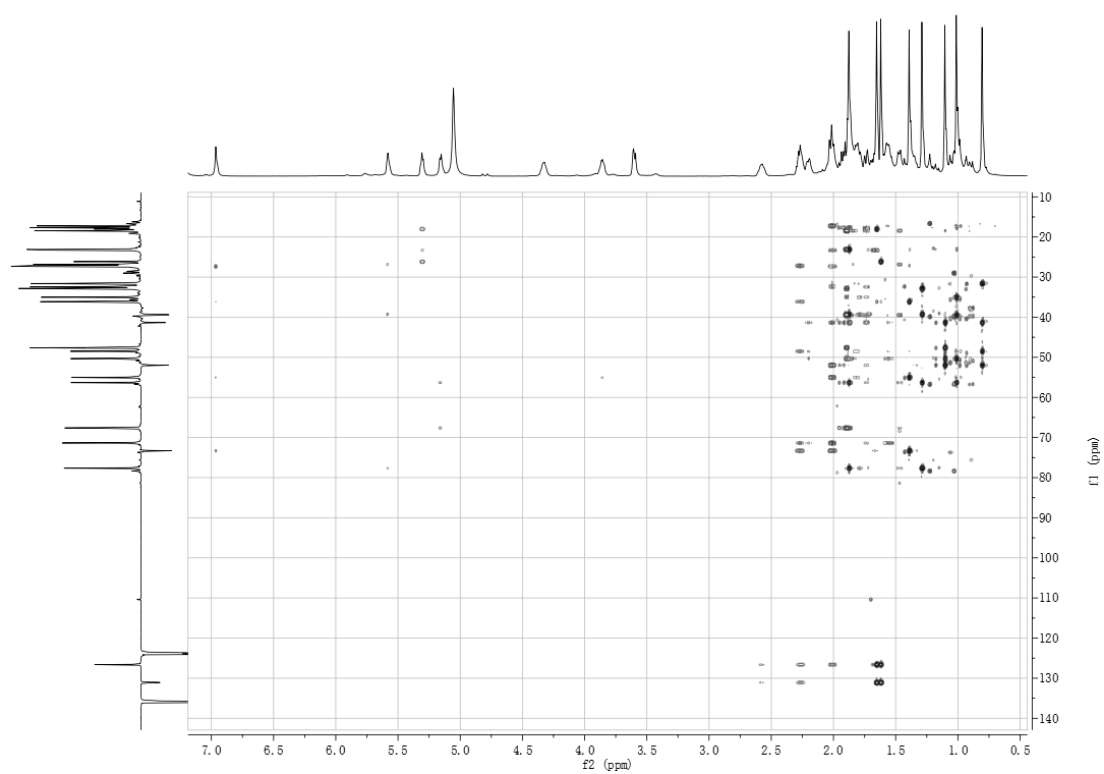


Figure S1-4. Heteronuclear multiple bond correlation (HMBC) spectrum of ginsengenin-S1 (**1**) in pyridine.

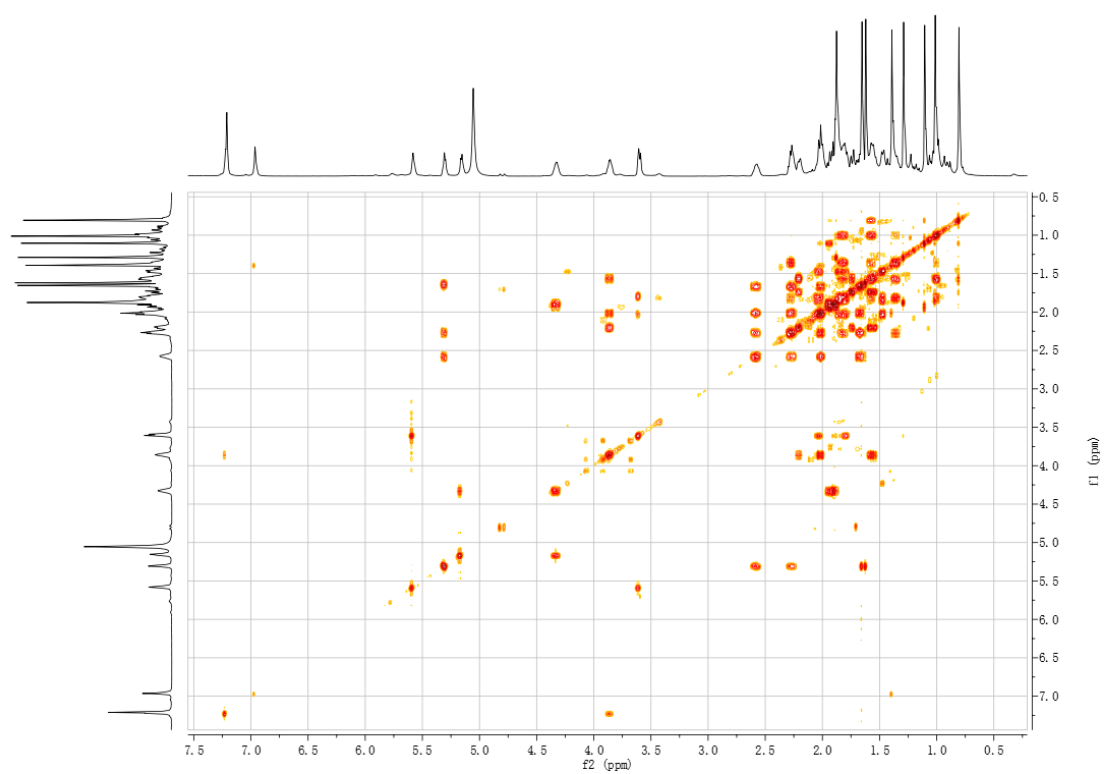


Figure S1-5. ^1H - ^1H correlation spectroscopy (^1H - ^1H COSY) spectrum of ginsengenin-S1 (**1**) in pyridine.

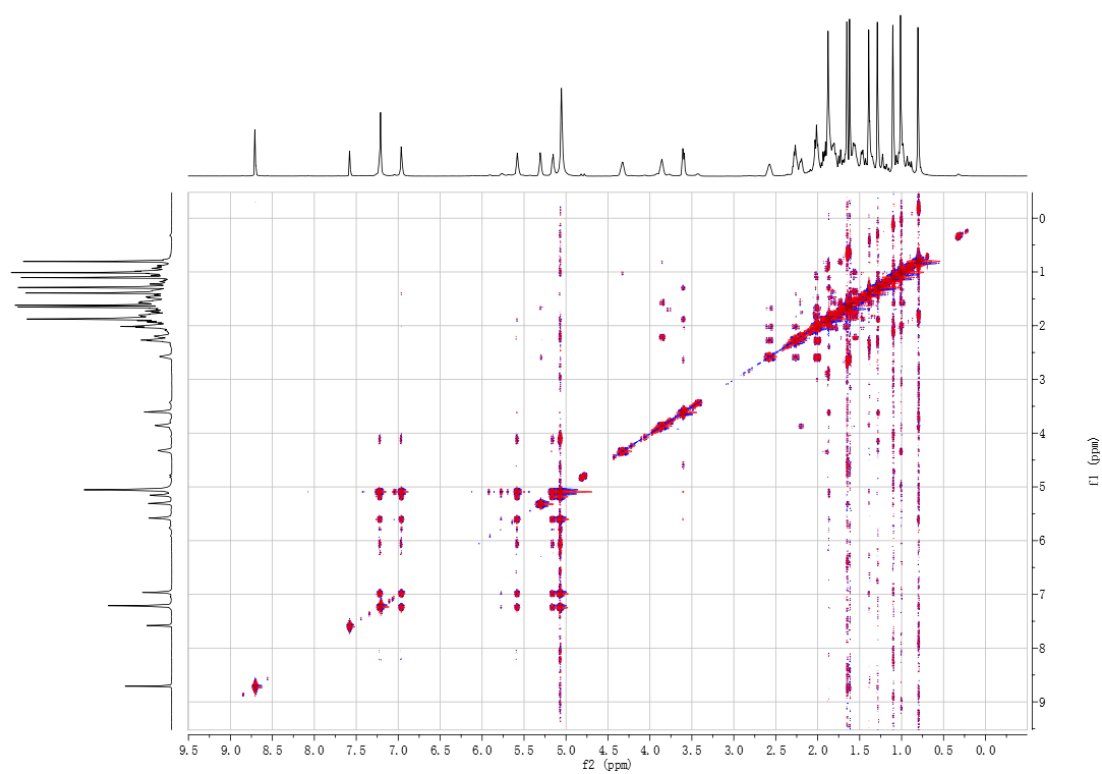


Figure S1-6. Nuclear Overhauser effect spectroscopy (NOESY) spectrum of ginsengenin-S1 (**1**) in pyridine.

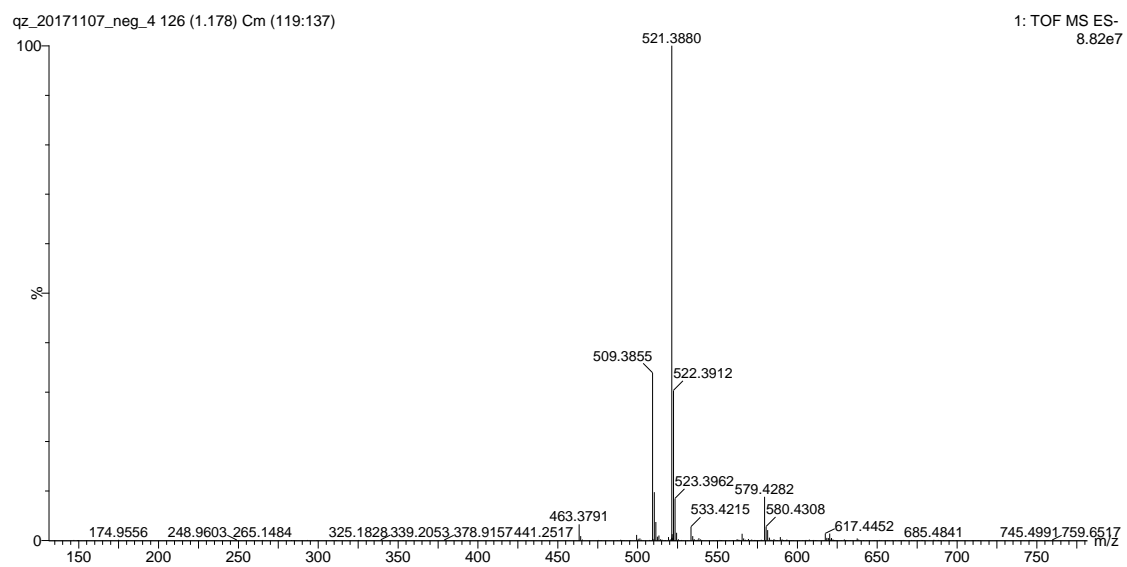


Figure S1-7. High resolution electrospray ionization mass spectroscopy (HRESIMS) spectrum of ginsengenin-S1 (**1**).

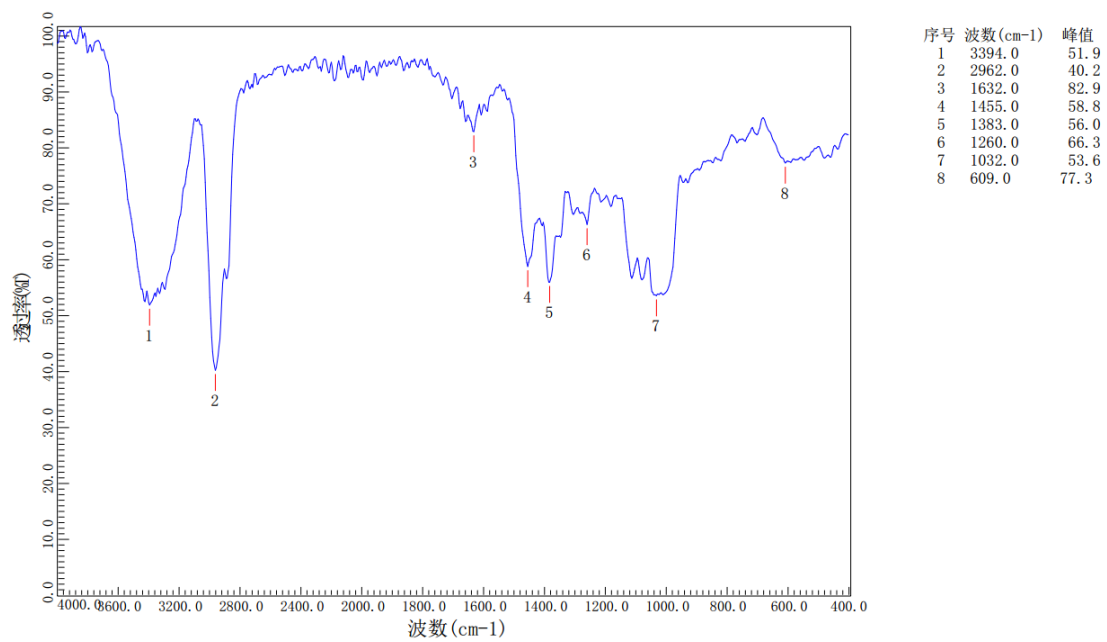


Figure S1-8. Infrared (IR) spectrum of ginsengeniin-S1 (**1**).

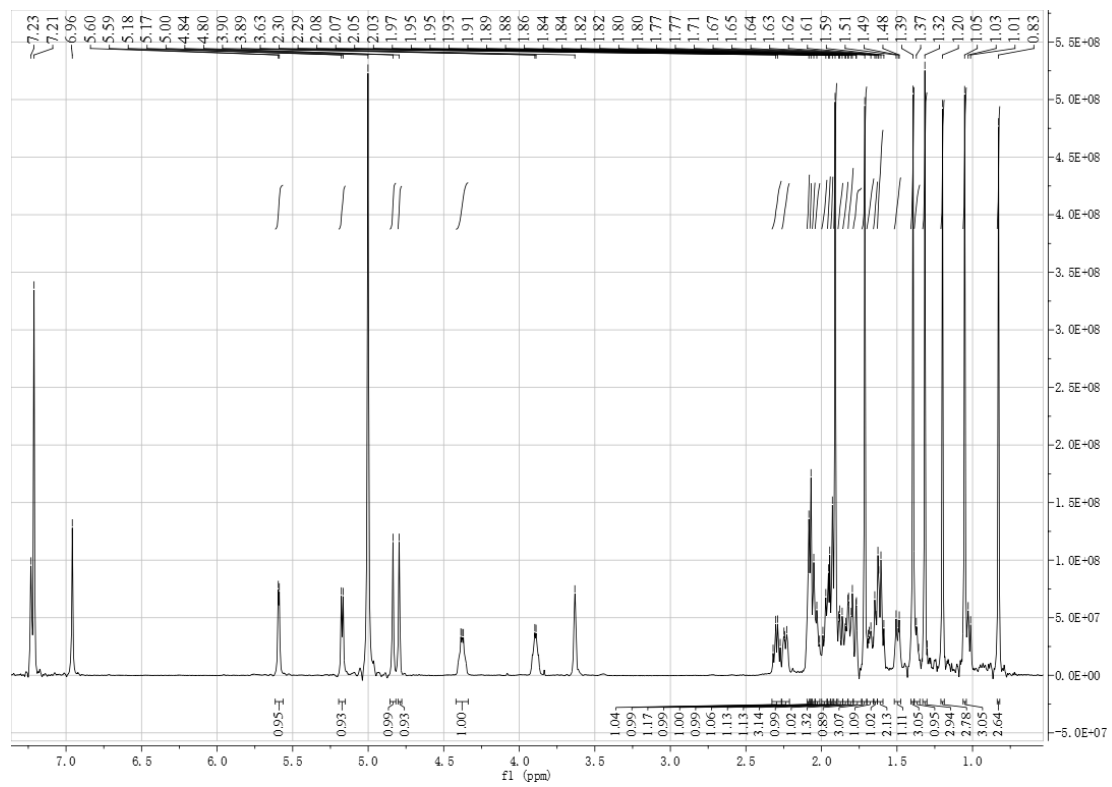


Figure S2-1. ¹H NMR spectrum of ginsengeniin-S2 (2) in pyridine (600MHz).

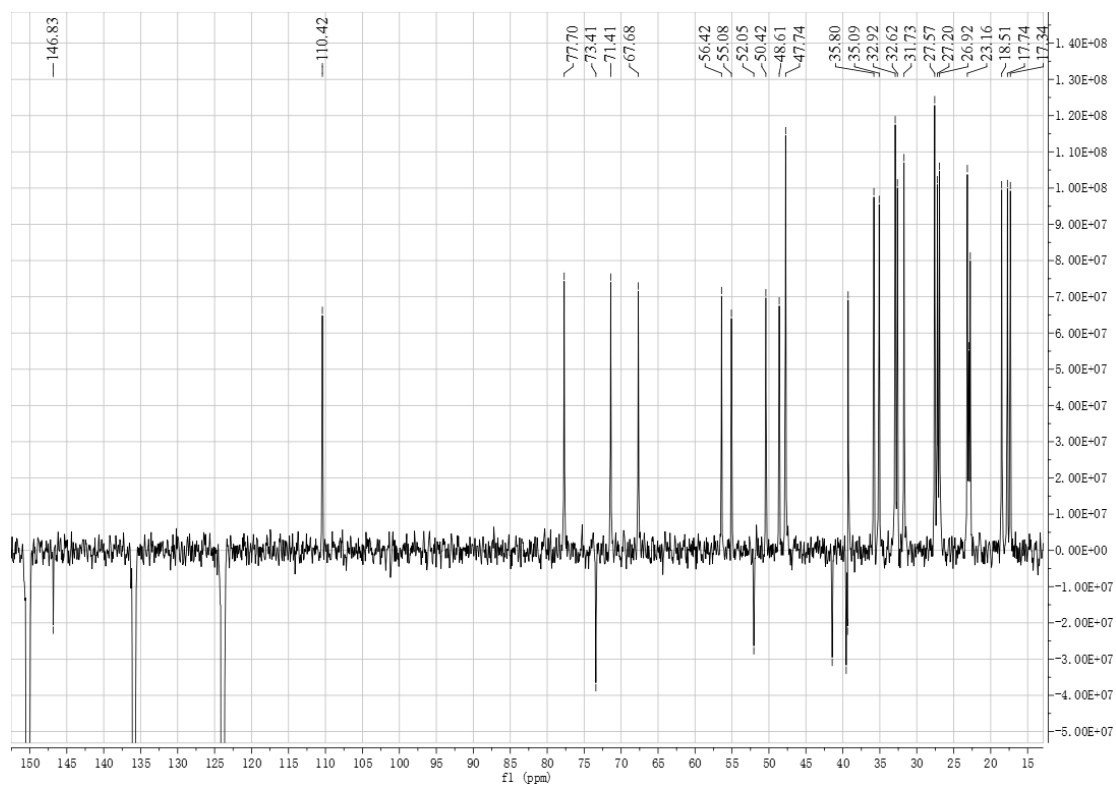


Figure S2-2. ^{13}C NMR spectrum of ginsengenin-S2 (**2**) in pyridine (150MHz).

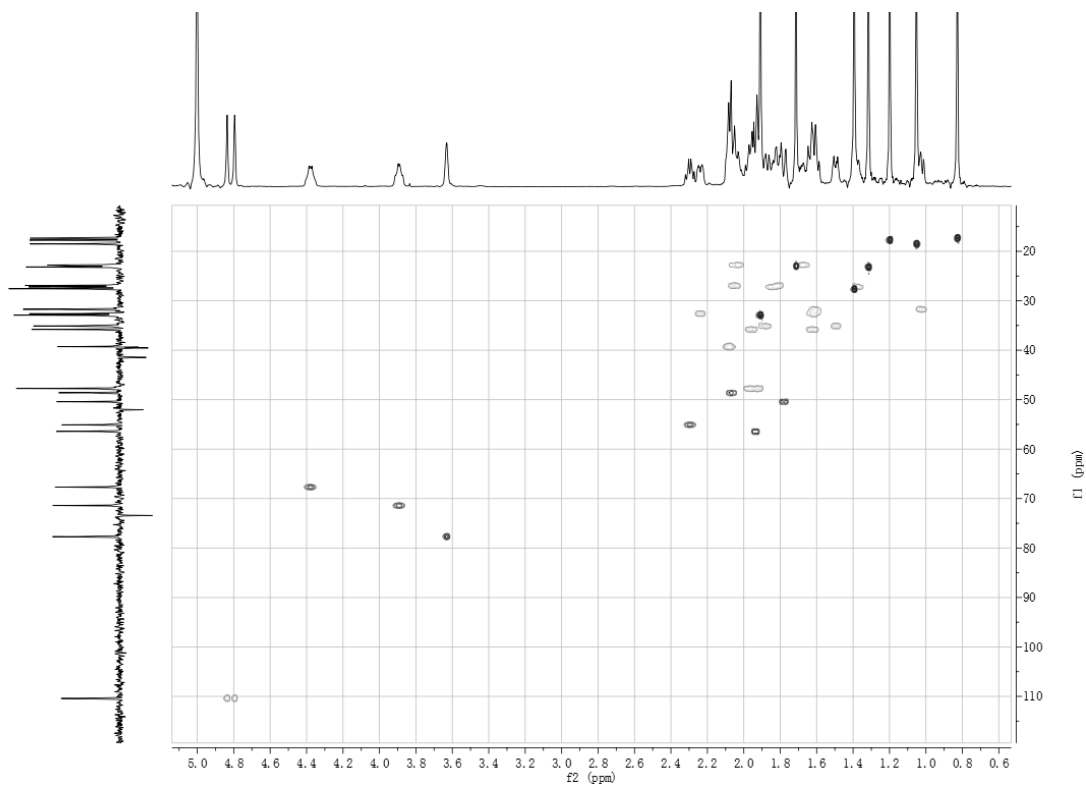


Figure S2-3. Heteronuclear single quantum correlation (HSQC) spectrum of ginsengenin-S2 (**2**) in pyridine.

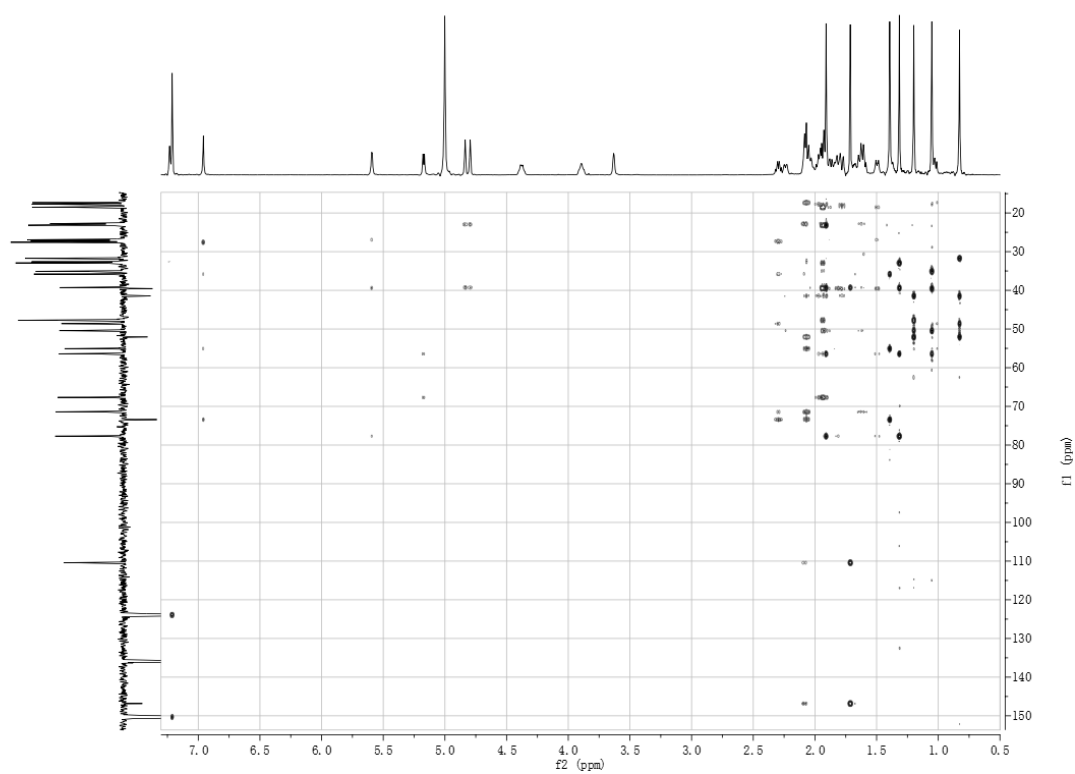


Figure S2-4. Heteronuclear multiple bond correlation (HMBC) spectrum of ginsengenin-S2 (**2**) in pyridine.

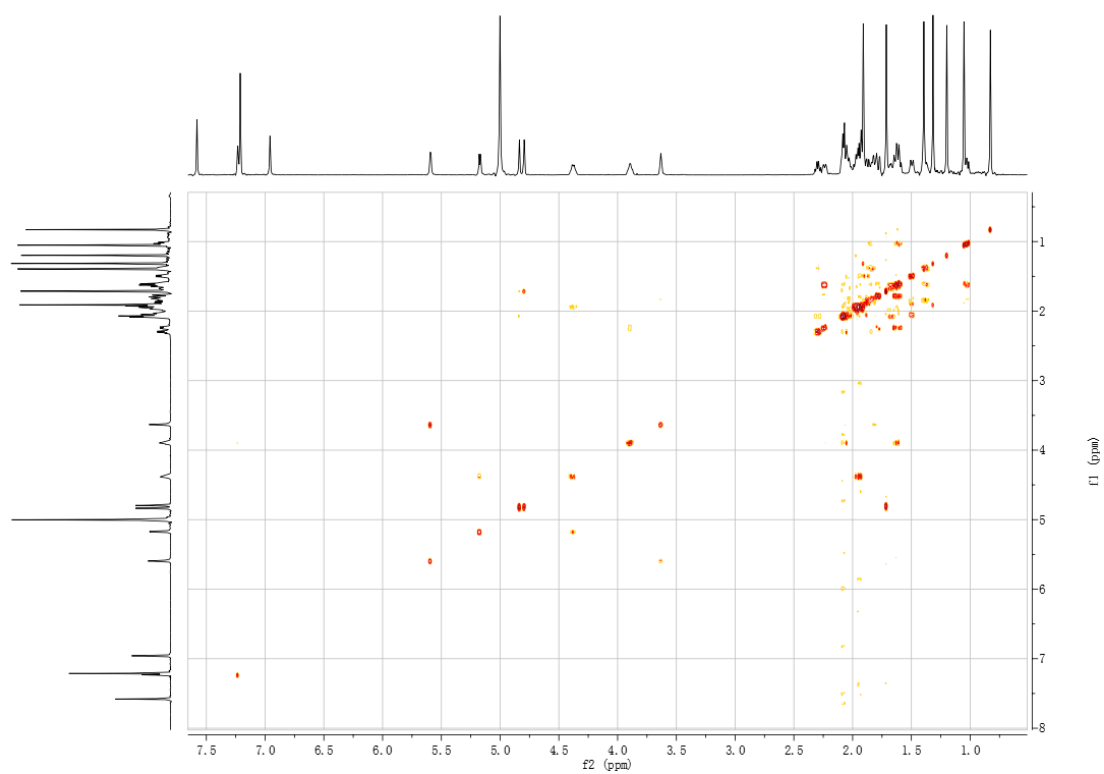


Figure S2-5. ^1H - ^1H correlation spectroscopy (^1H - ^1H COSY) spectrum of ginsengenin-S2 (**2**) in pyridine.

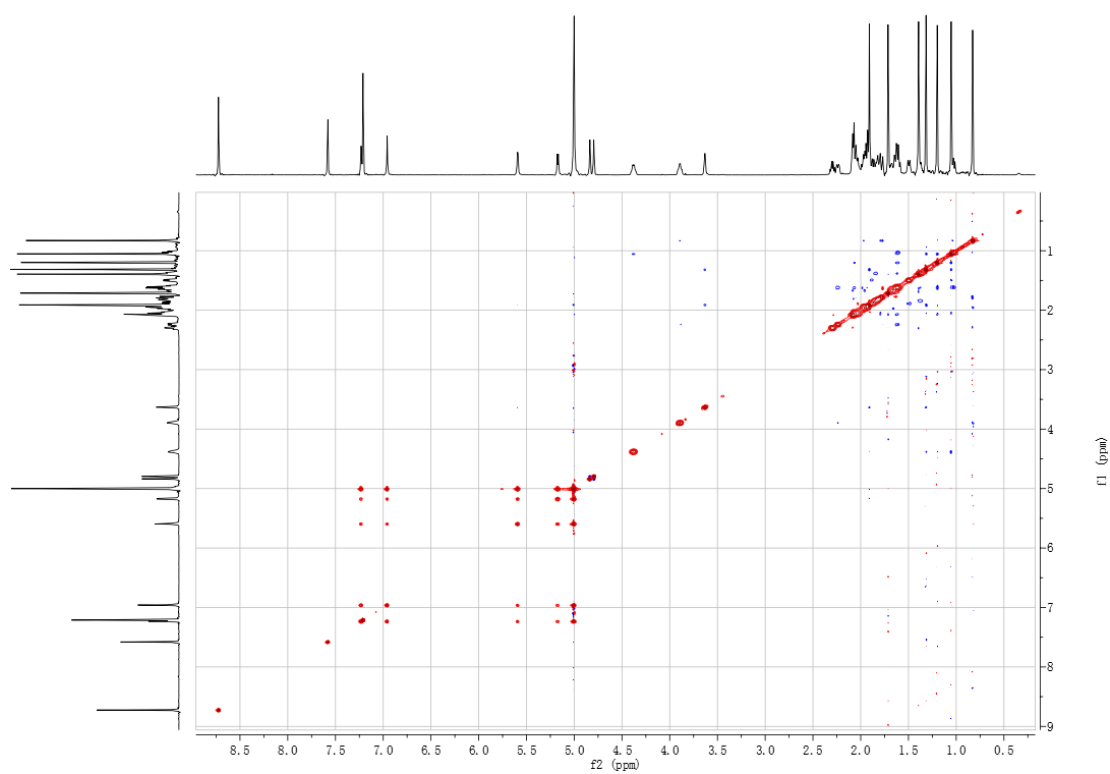


Figure S2-6. Nuclear Overhauser effect spectroscopy (NOESY) spectrum of ginsengenin-S2 (**2**) in pyridine.

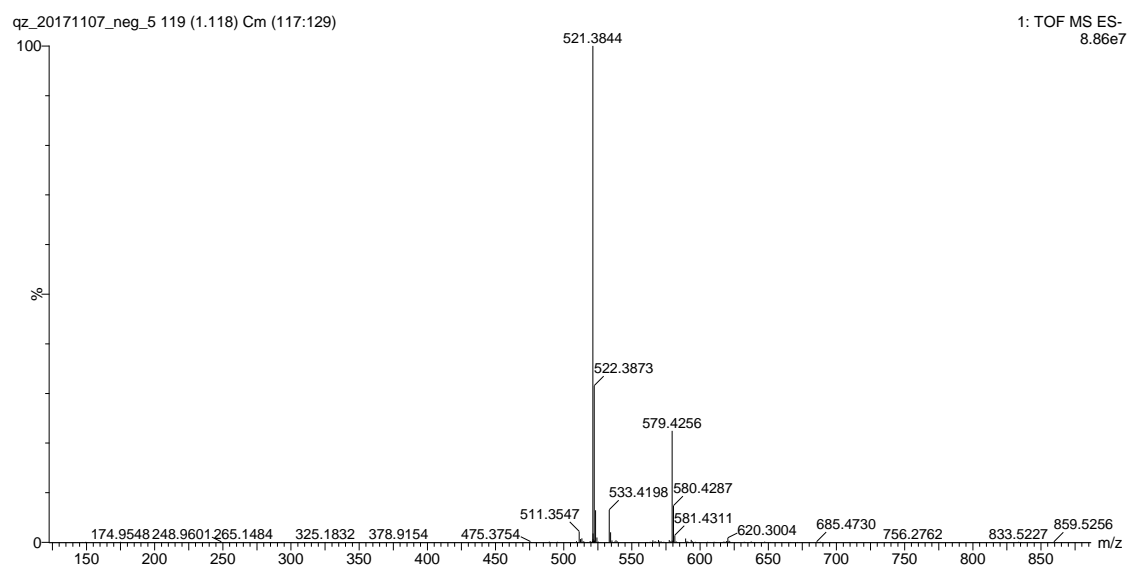


Figure S2-7. High resolution electrospray ionization mass spectroscopy (HRESIMS) spectrum of ginsengenin-S2 (**2**).

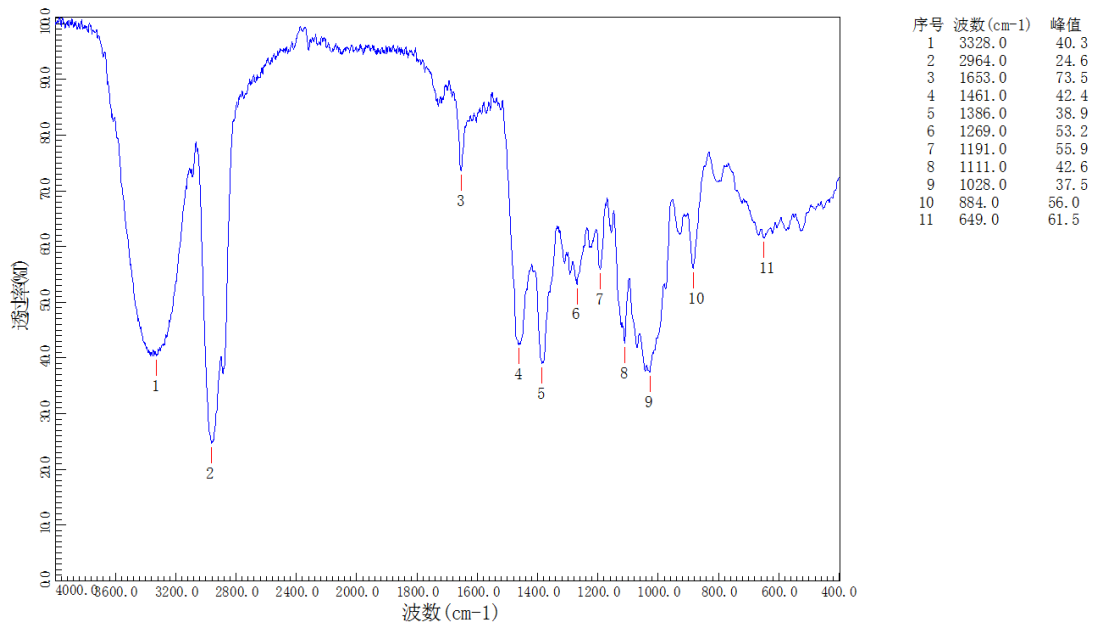


Figure S2-8. Infrared (IR) spectrum of ginsengenin-S2 (2).

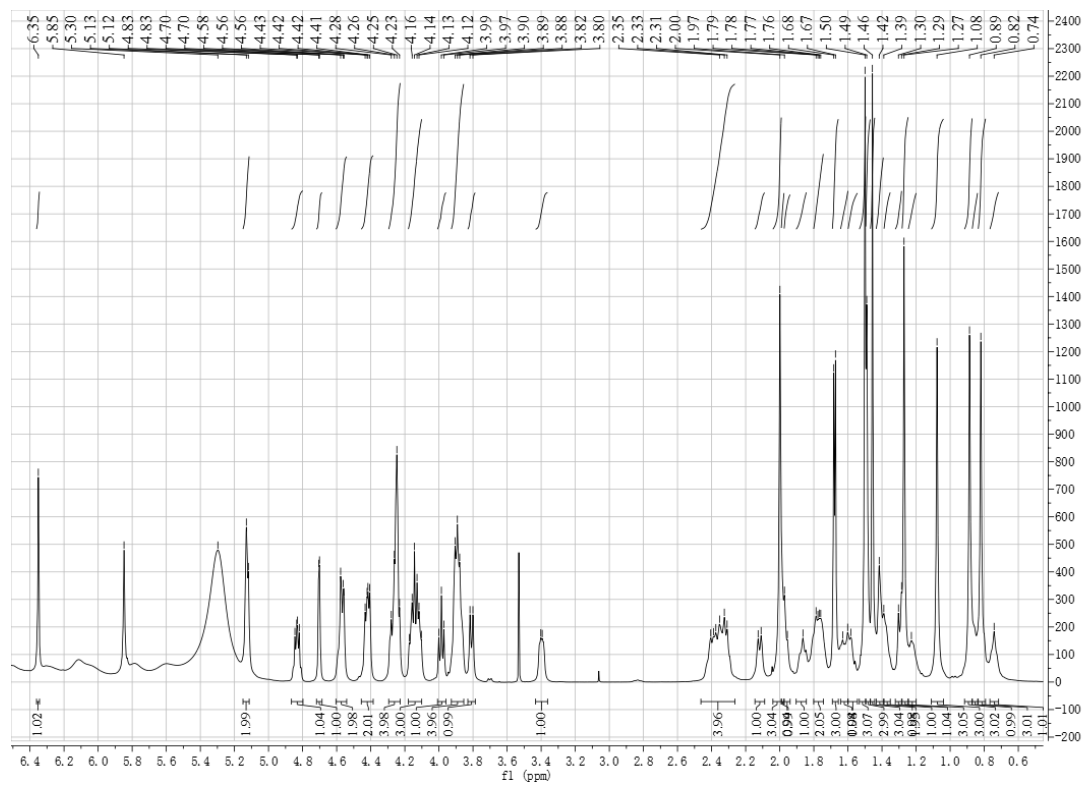


Figure S3-1. ¹H NMR spectrum of ginsenoside-S3 (**3**) in pyridine (600MHz).

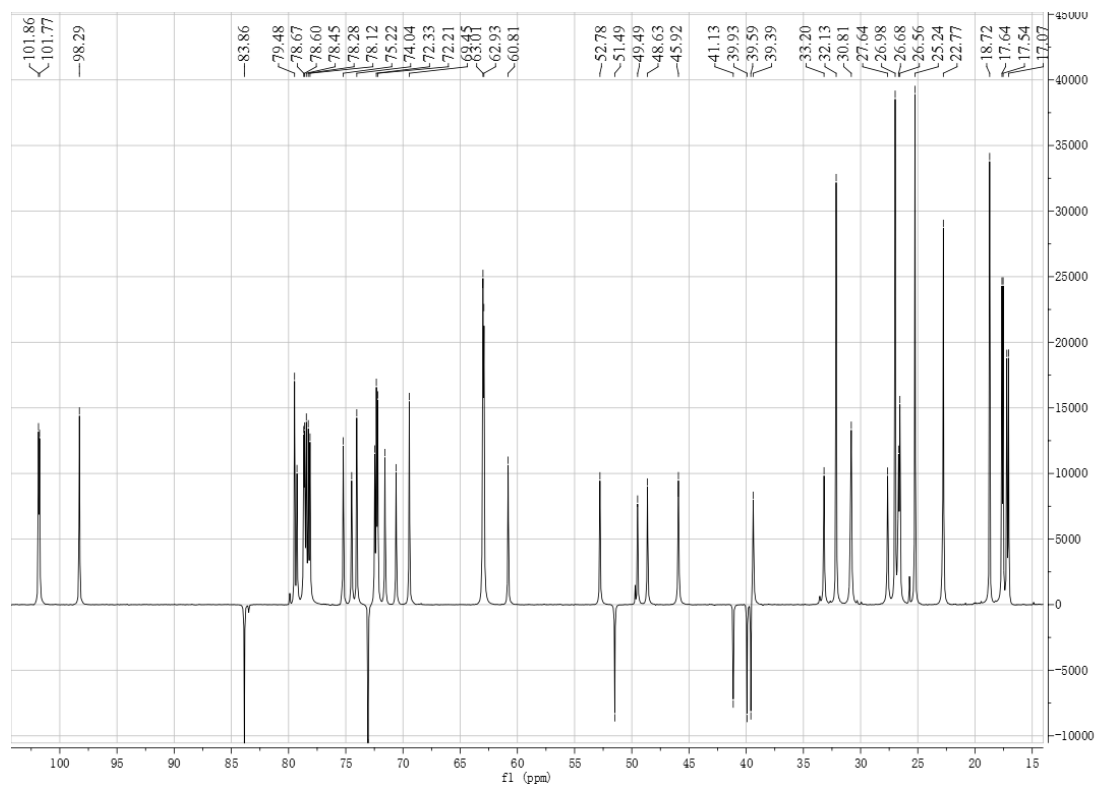


Figure S3-2. ^{13}C NMR spectrum of ginsenoside-S3 (**3**) in pyridine (150MHz).

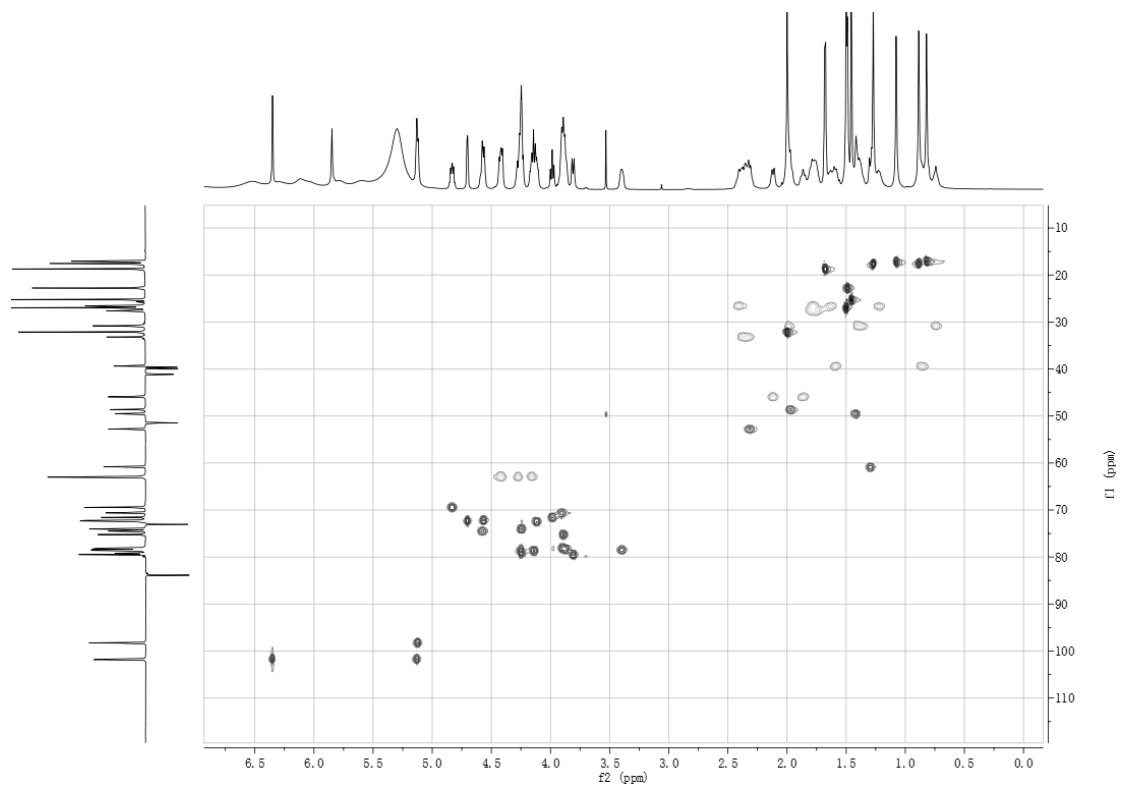


Figure S3-3. Heteronuclear single quantum correlation (HSQC) spectrum of ginsenoside-S3 (**3**) in pyridine.

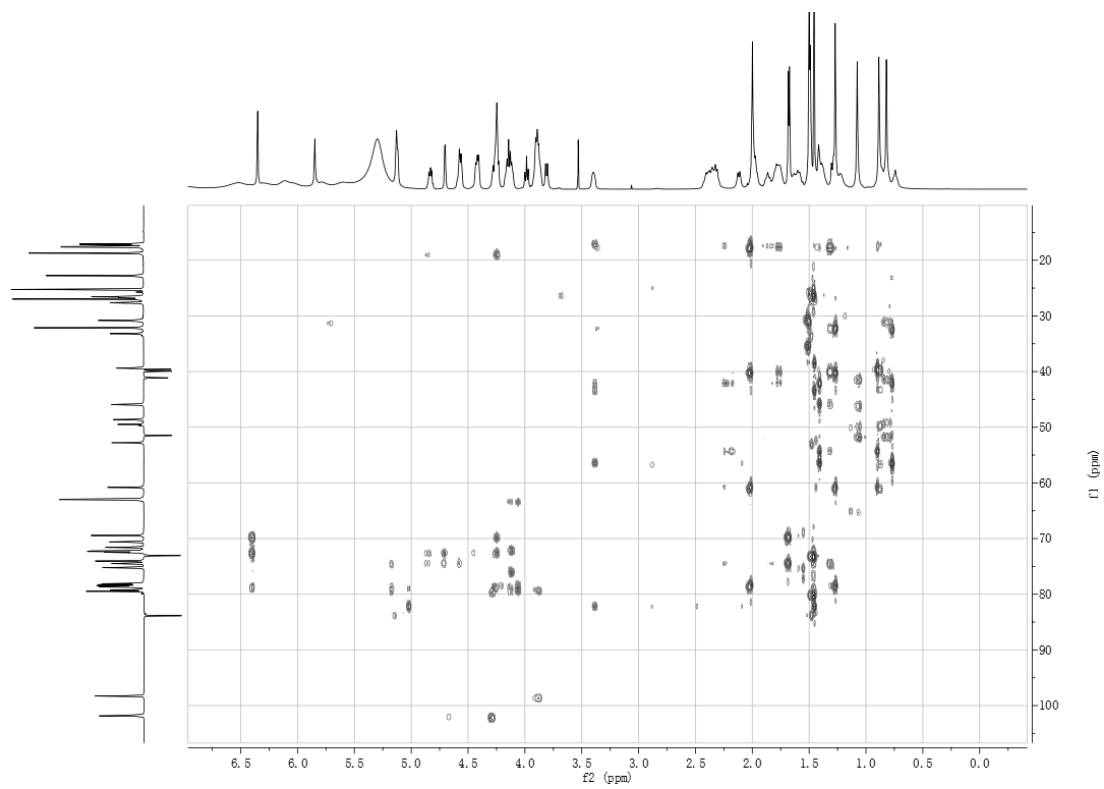


Figure S3-4. Heteronuclear multiple bond correlation (HMBC) spectrum of ginsenoside-S3 (**3**) in pyridine.

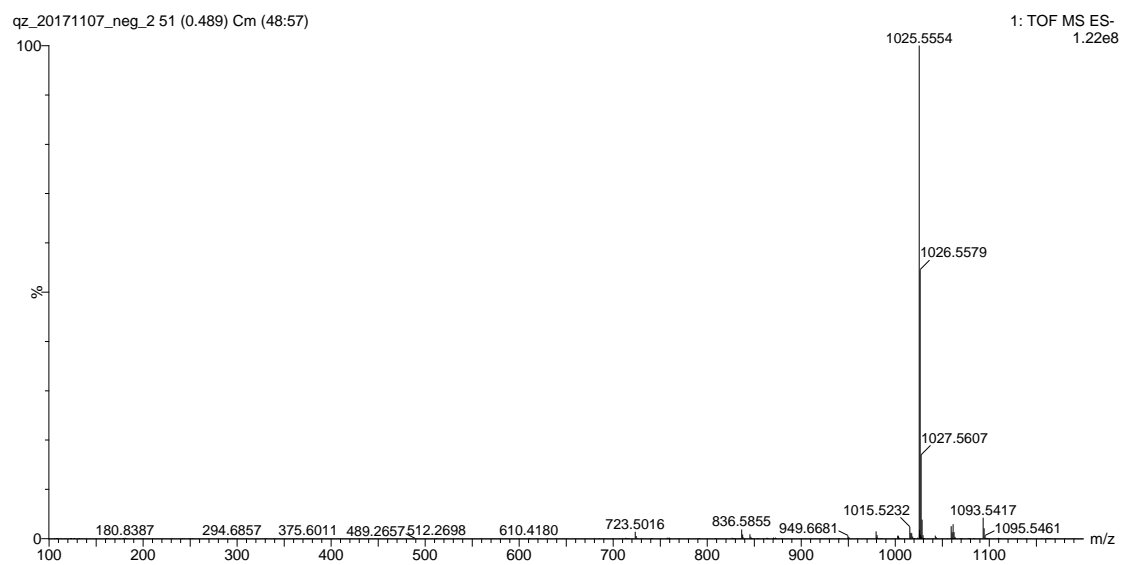


Figure S3-5. High resolution electrospray ionization mass spectroscopy (HRESIMS) spectrum of ginsenoside-S3 (**3**).

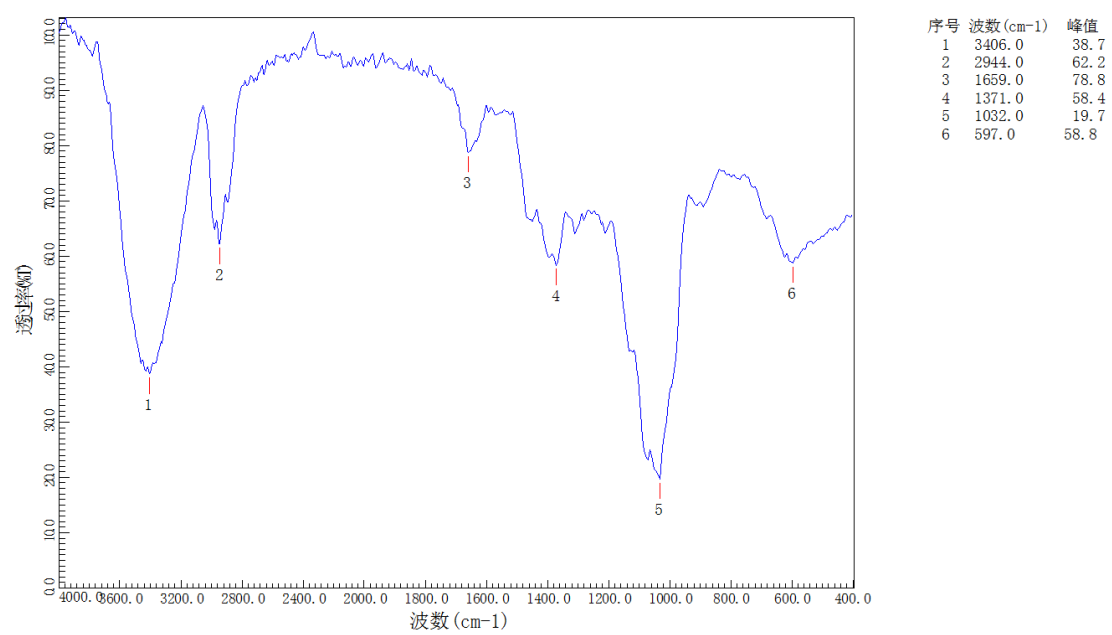


Figure S3-6. Infrared (IR) spectrum of ginsenoside-S3 (**3**).

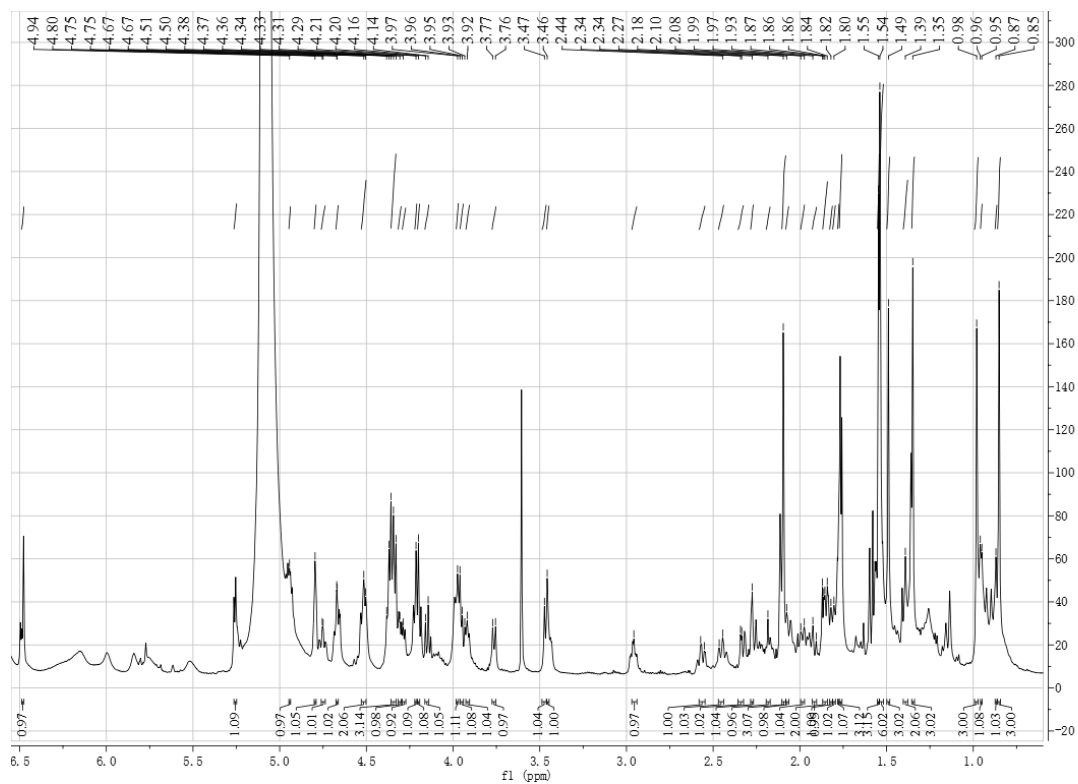


Figure S4-1. ¹H NMR spectrum of ginsenoside-S4 (4) in pyridine (600MHz).

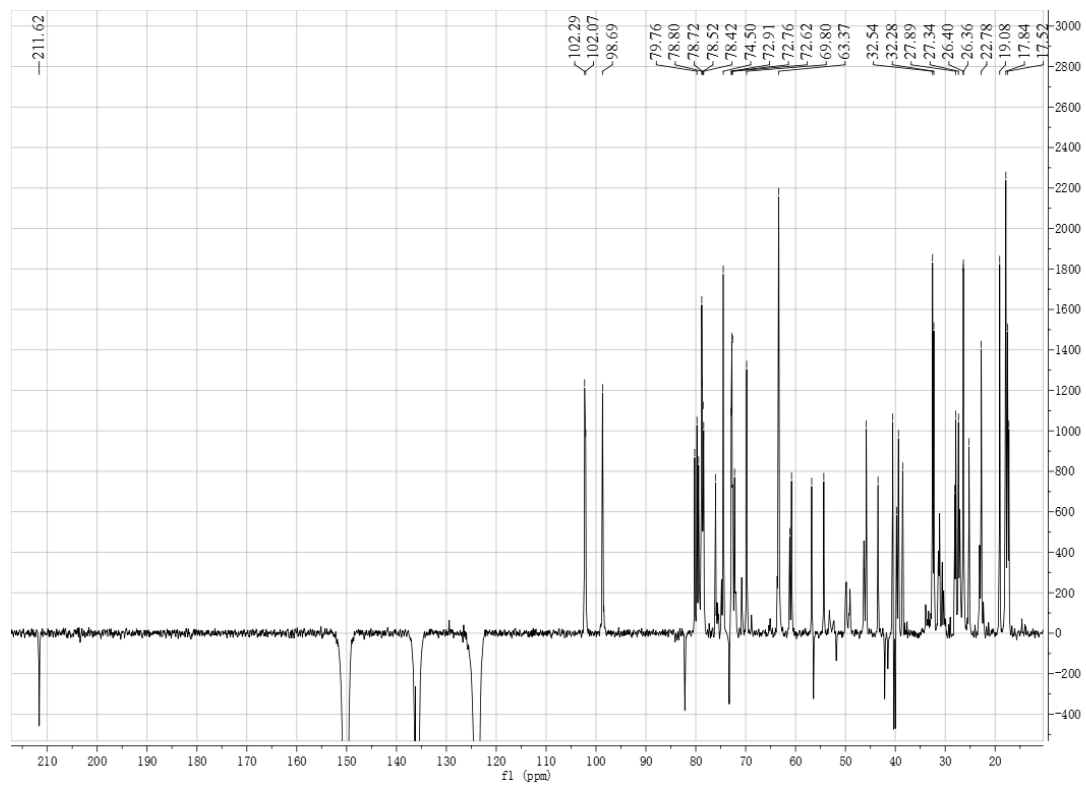


Figure S4-2. ¹³C NMR spectrum of ginsenoside-S4 (4) in pyridine (150MHz).

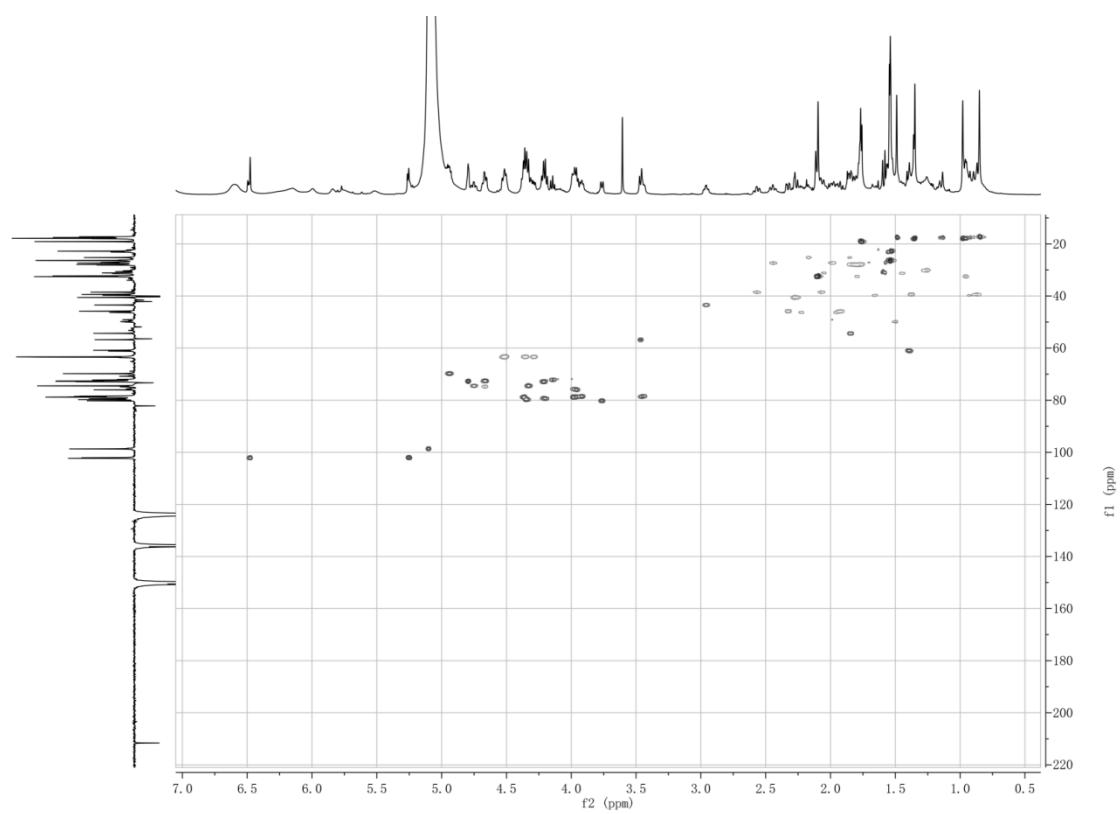


Figure S4-3. Heteronuclear single quantum correlation (HSQC) spectrum of ginsenoside-S4 (**4**) in pyridine.

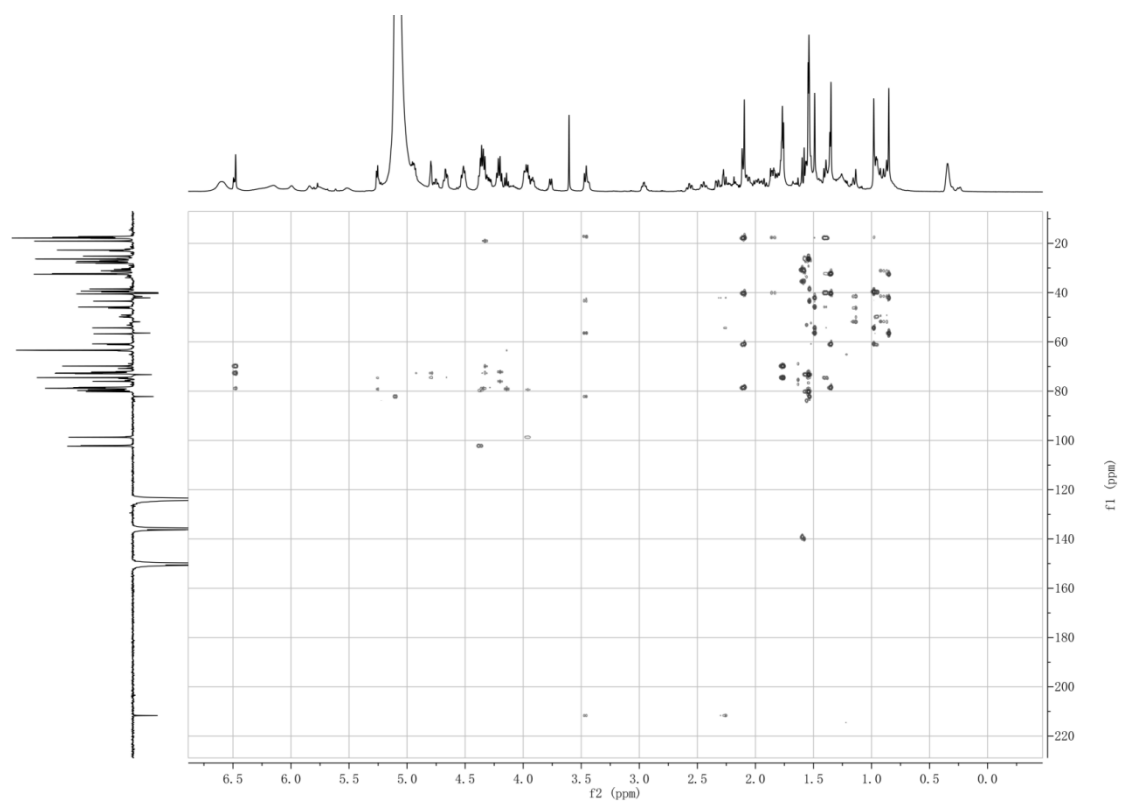


Figure S4-4. Heteronuclear multiple bond correlation (HMBC) spectrum of ginsenoside-S4 (**4**) in pyridine.

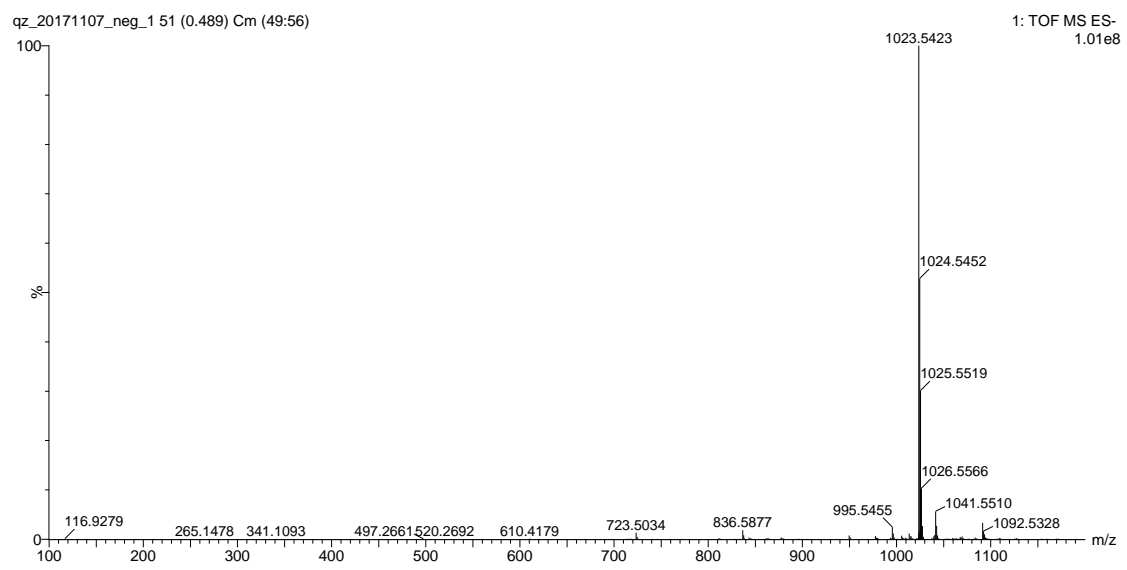


Figure S4-5. High resolution electrospray ionization mass spectroscopy (HRESIMS) spectrum of ginsenoside-S4 (**4**).

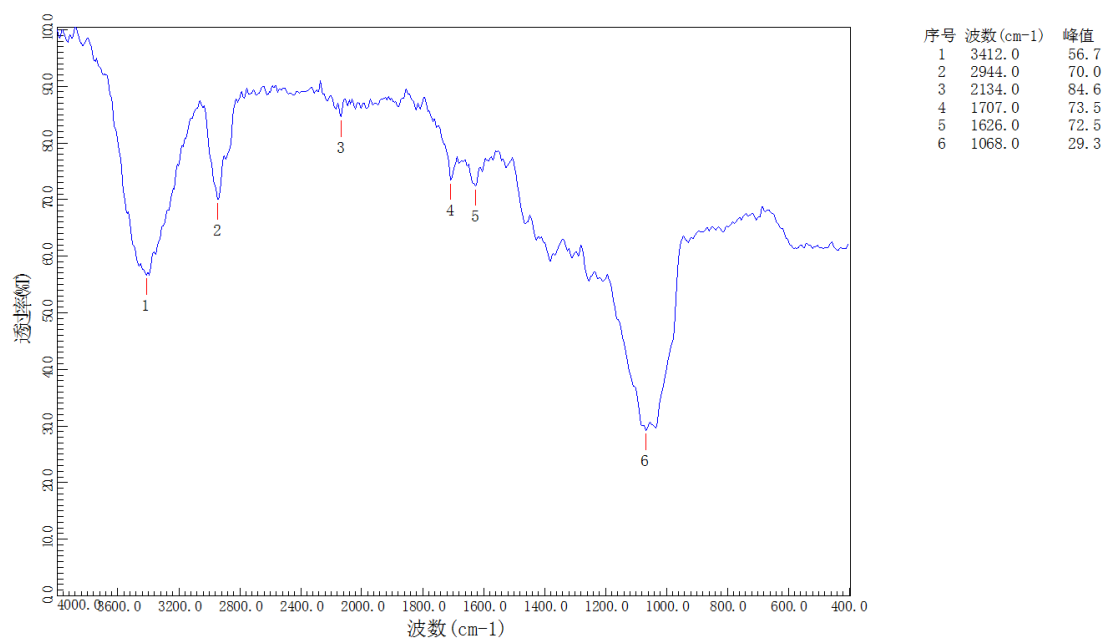


Figure S4-6. Infrared (IR) spectrum of ginsenoside-S4 (4).

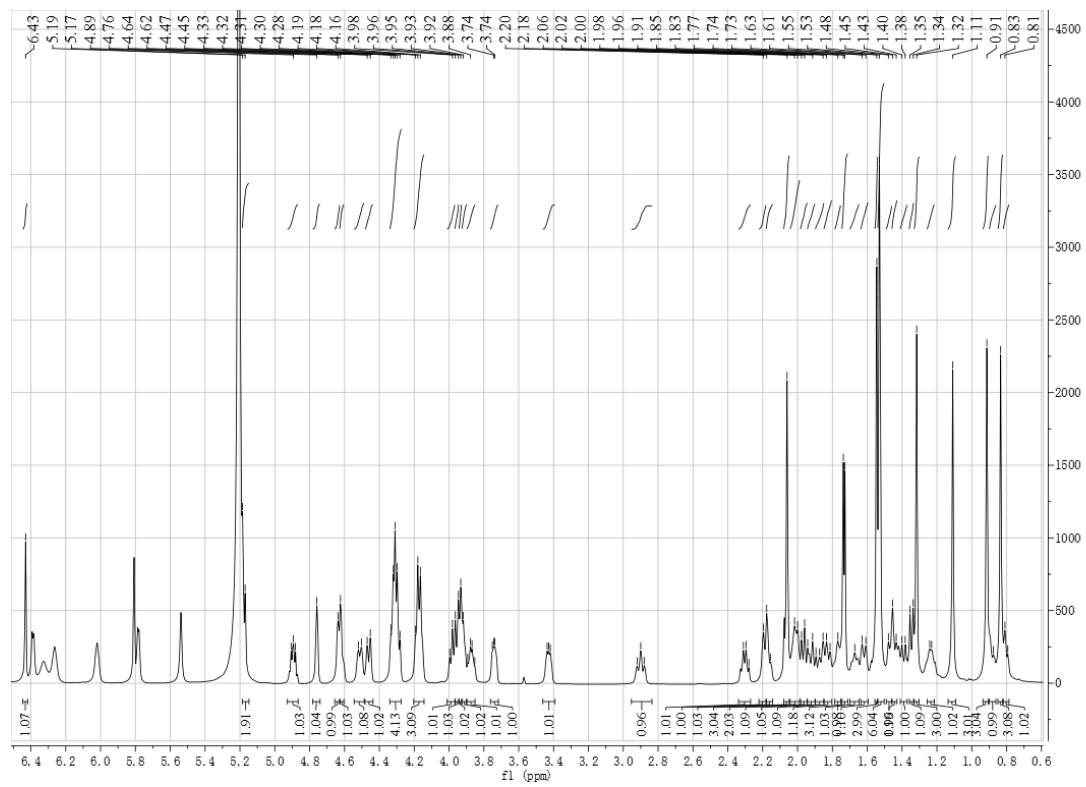


Figure S5-1. ¹H NMR spectrum of ginsenoside-S5 (5) in pyridine (600MHz).

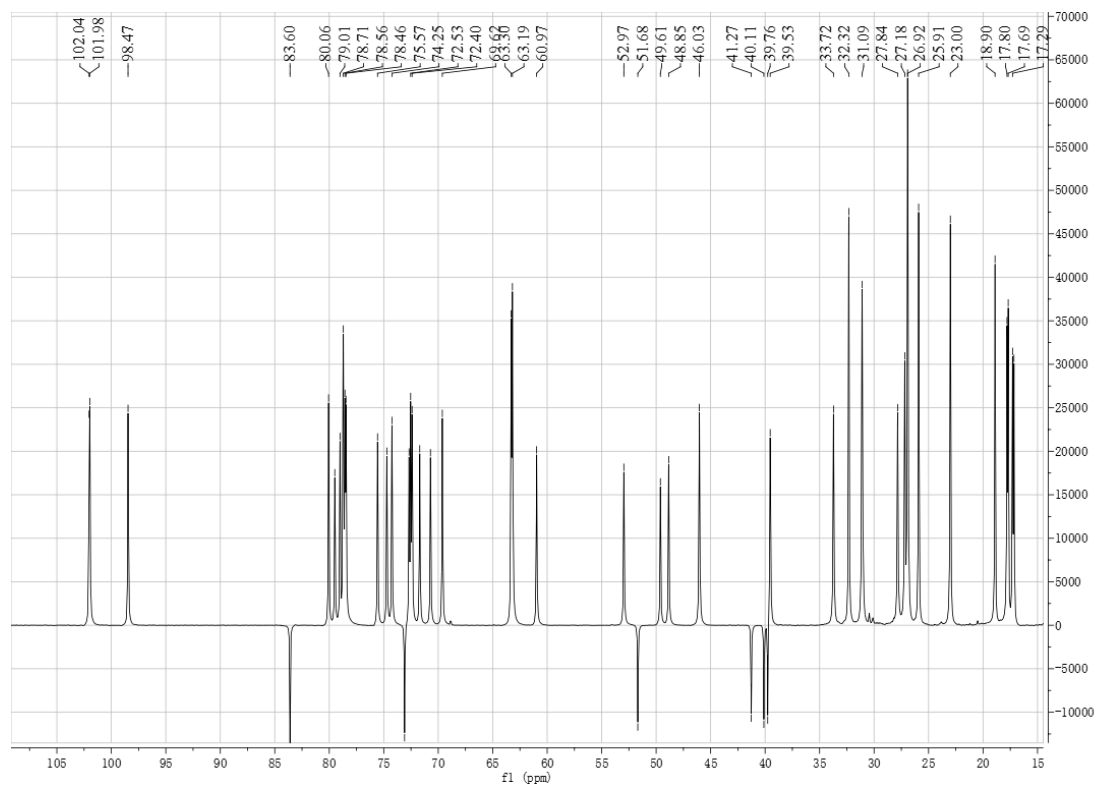


Figure S5-2. ^{13}C NMR spectrum of ginsenoside-S5 (**5**) in pyridine (150MHz).

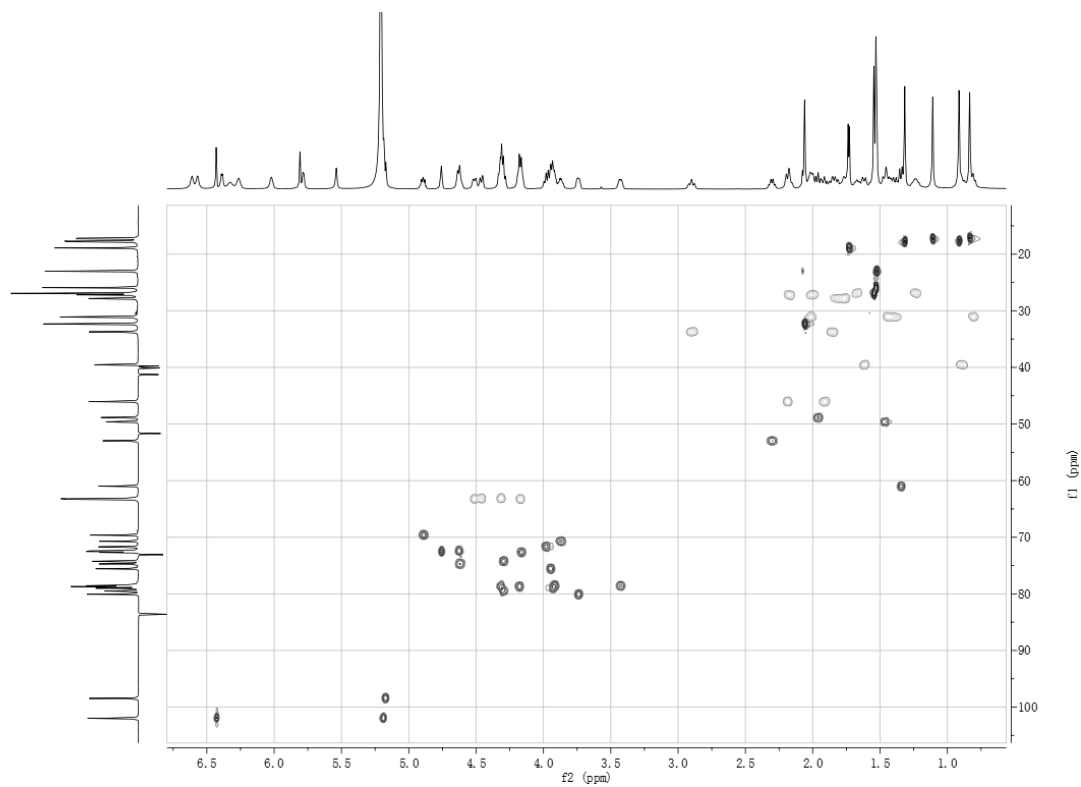


Figure S5-3. Heteronuclear single quantum correlation (HSQC) spectrum of ginsenoside-S5 (**5**) in pyridine.

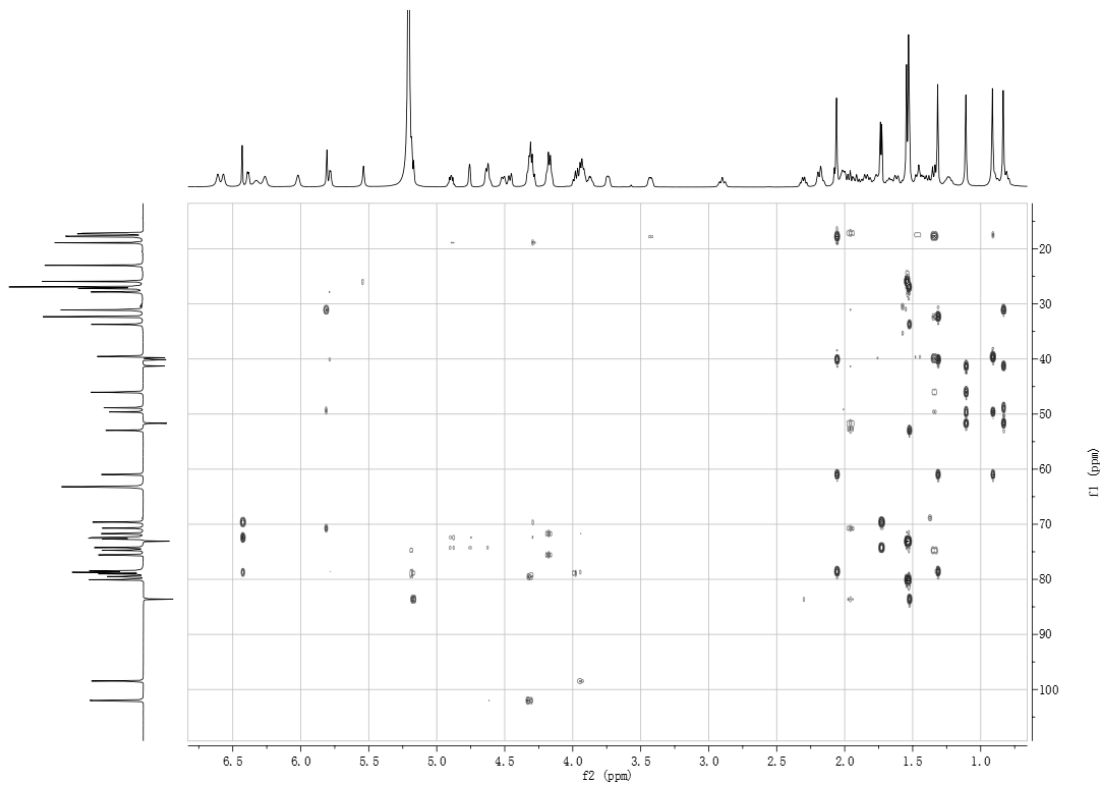


Figure S5-4. Heteronuclear multiple bond correlation (HMBC) spectrum of ginsenoside-S5 (**5**) in pyridine.

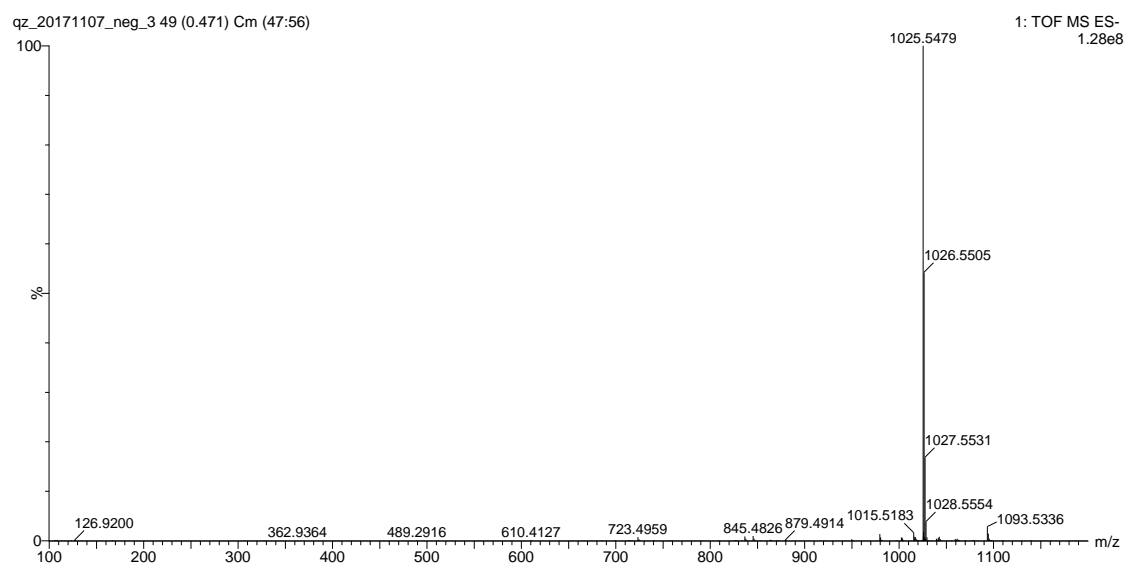


Figure S5-5. High resolution electrospray ionization mass spectroscopy (HRESIMS) spectrum of ginsenoside-S5 (**5**).

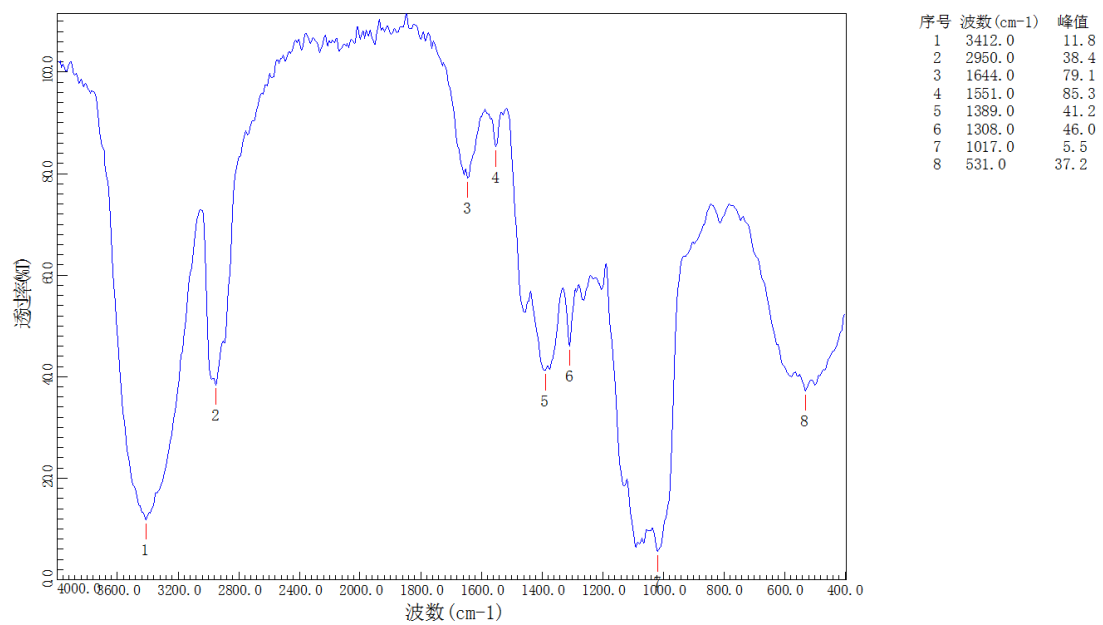


Figure S5-6. Infrared (IR) spectrum of ginsenoside-S5 (5).