

New spinosin derivatives from the seeds of *Ziziphus mauritiana*

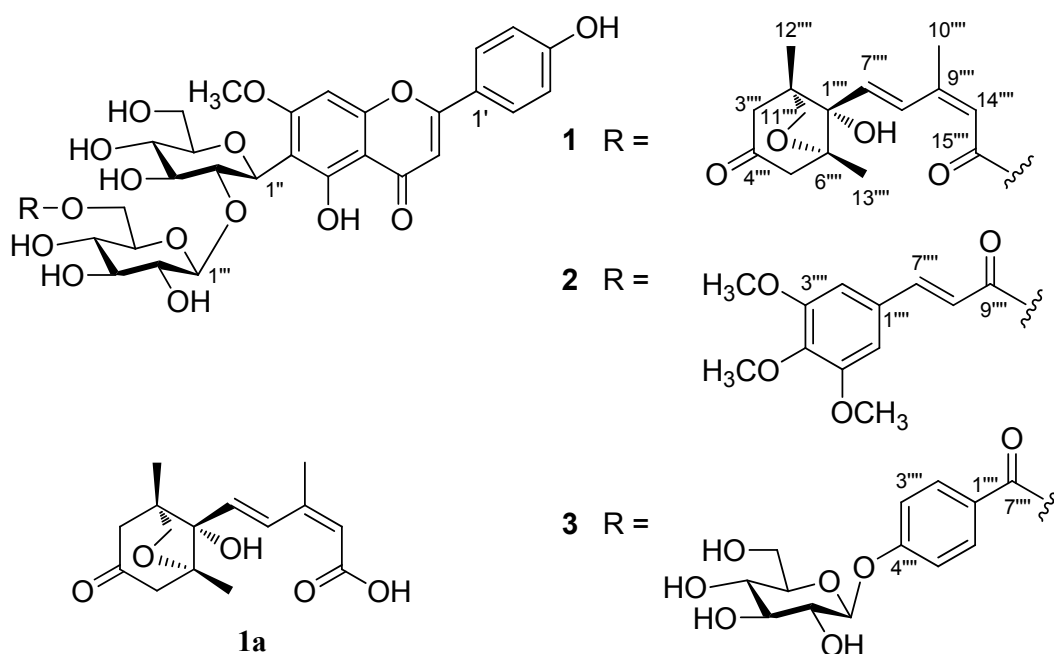
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Structures of compounds 1–3

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- Fig. 1. ^1H NMR (600 MHz, 313 K) spectrum of compound **1** in DMSO- d_6 .
- Fig. 2. ^{13}C NMR (150 MHz, 313 K) spectrum of compound **1** in DMSO- d_6 .
- Fig. 3. HSQC (313 K) spectrum of compound **1** in DMSO- d_6 .
- Fig. 4. HMBC (313 K) spectrum of compound **1** in DMSO- d_6 .
- Fig. 5. ROESY (313 K) spectrum of compound **1** in DMSO- d_6 .
- Fig. 6. ^1H - ^1H COSY (313 K) spectrum of compound **1** in DMSO- d_6 .
- Fig. 7. HREIMS of compound **1**.
- Fig. 8. ^1H NMR (600 MHz, 313 K) spectrum of compound **2** in DMSO- d_6 .
- Fig. 9. ^{13}C NMR (150 MHz, 313 K) spectrum of compound **2** in DMSO- d_6 .
- Fig. 10. HSQC (313 K) spectrum of compound **2** in DMSO- d_6 .
- Fig. 11. HMBC (313 K) spectrum of compound **2** in DMSO- d_6 .
- Fig. 12. HREIMS of compound **2**.
- Fig. 13. ^1H NMR (600 MHz, 313 K) spectrum of compound **3** in DMSO- d_6 .
- Fig. 14. ^{13}C NMR (150 MHz, 313 K) spectrum of compound **3** in DMSO- d_6 .
- Fig. 15. HSQC (313 K) spectrum of compound **3** in DMSO- d_6 .
- Fig. 16. HMBC (313 K) spectrum of compound **3** in DMSO- d_6 .
- Fig. 17. HREIMS of compound **3**.
- Fig. 18. Chemical structures of known compounds **4–22**.

Fig. 3. HSQC (313 K) spectrum of compound **1** in DMSO- d_6 .

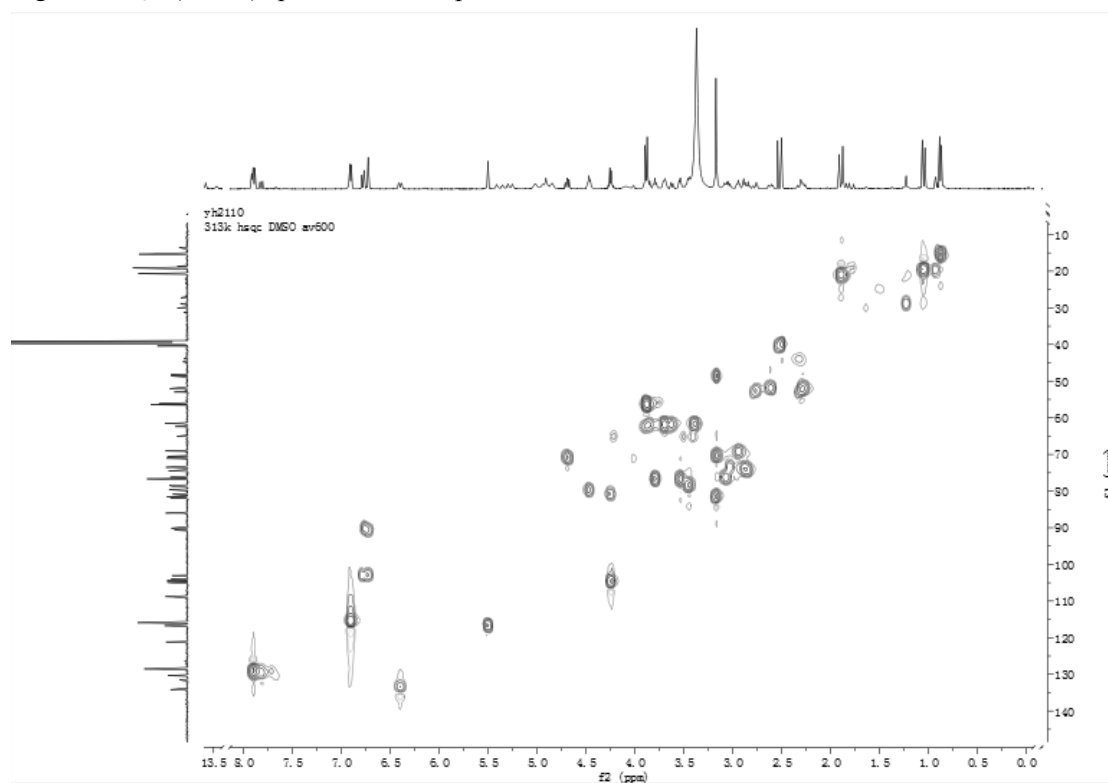


Fig. 4. HMBC (313 K) spectrum of compound **1** in DMSO- d_6 .

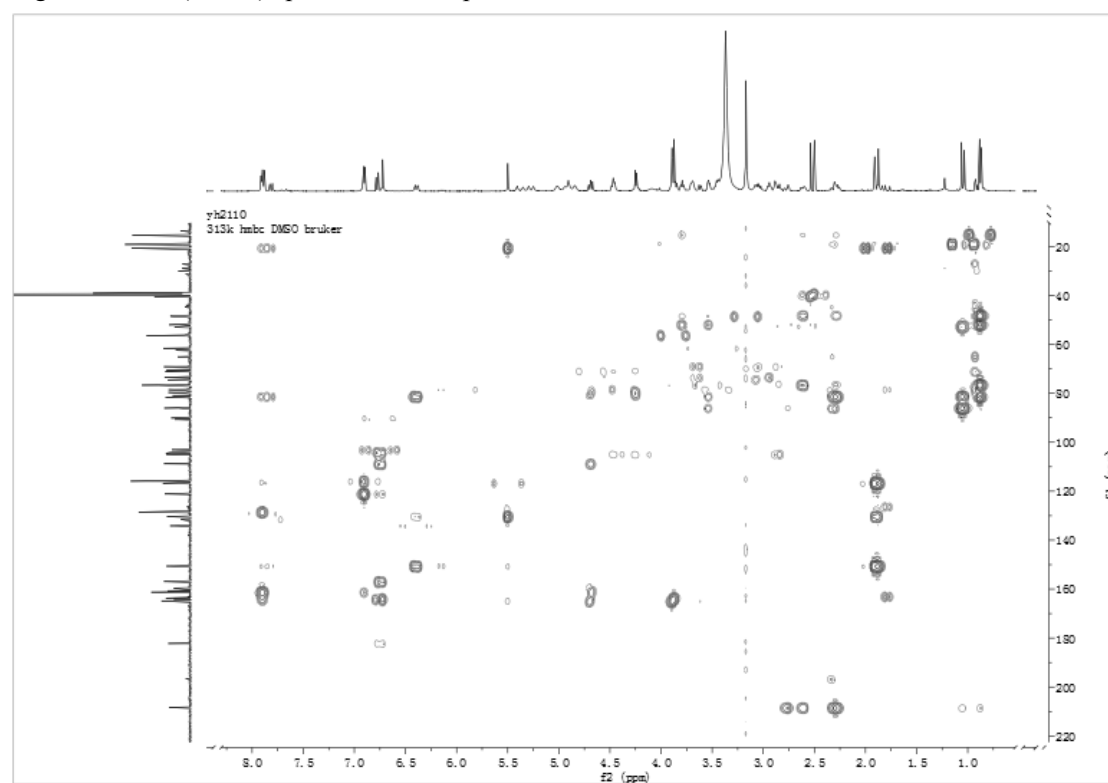


Fig. 5. ROESY (313 K) spectrum of compound **1** in DMSO- d_6 .

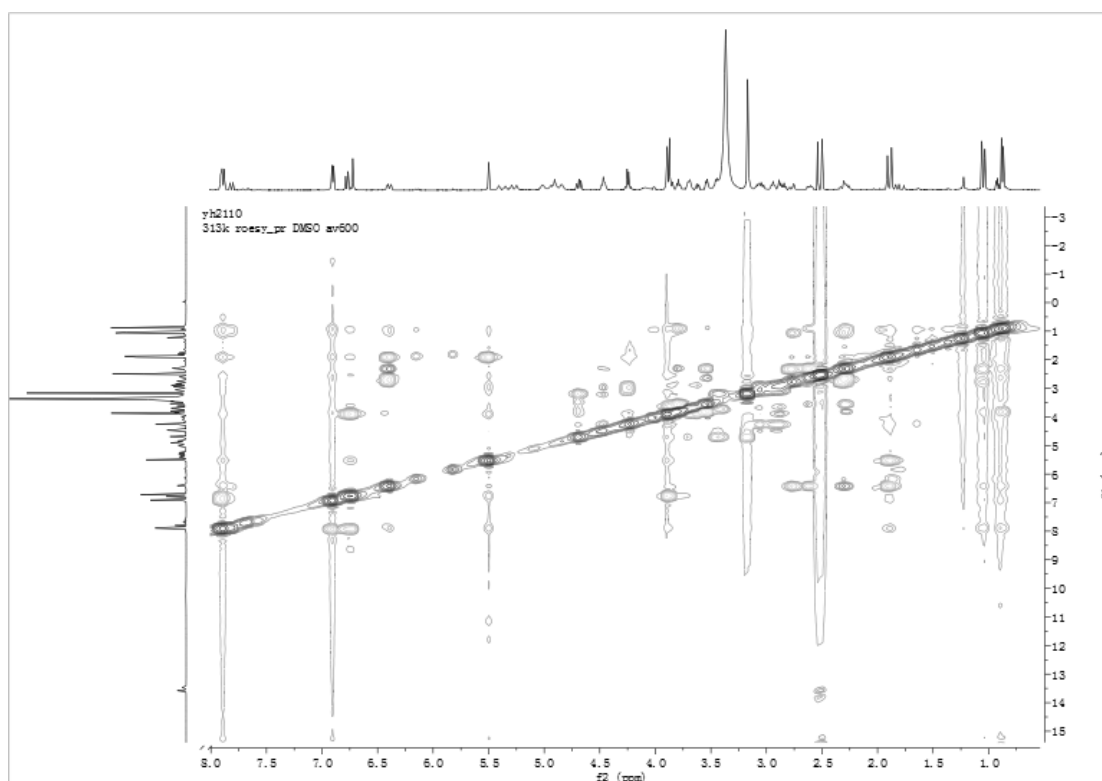


Fig. 6. ^1H - ^1H COSY (313 K) spectrum of compound **1** in DMSO- d_6 .

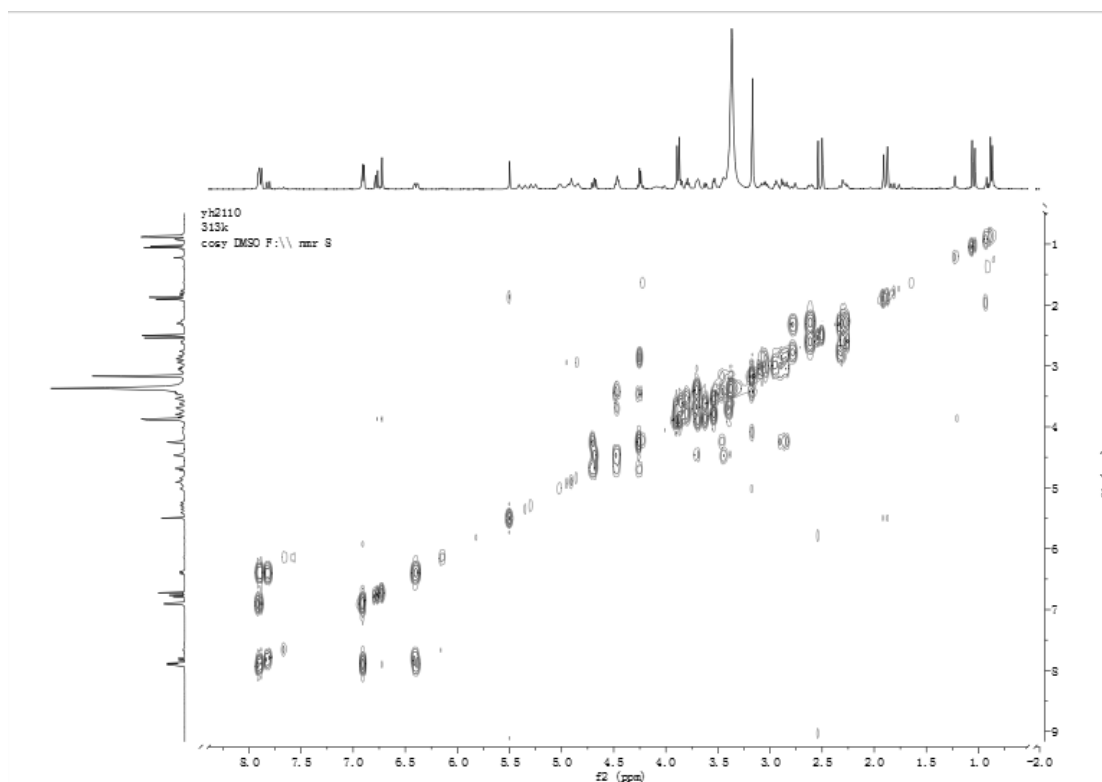


Fig. 7. HREIMS of compound 1.

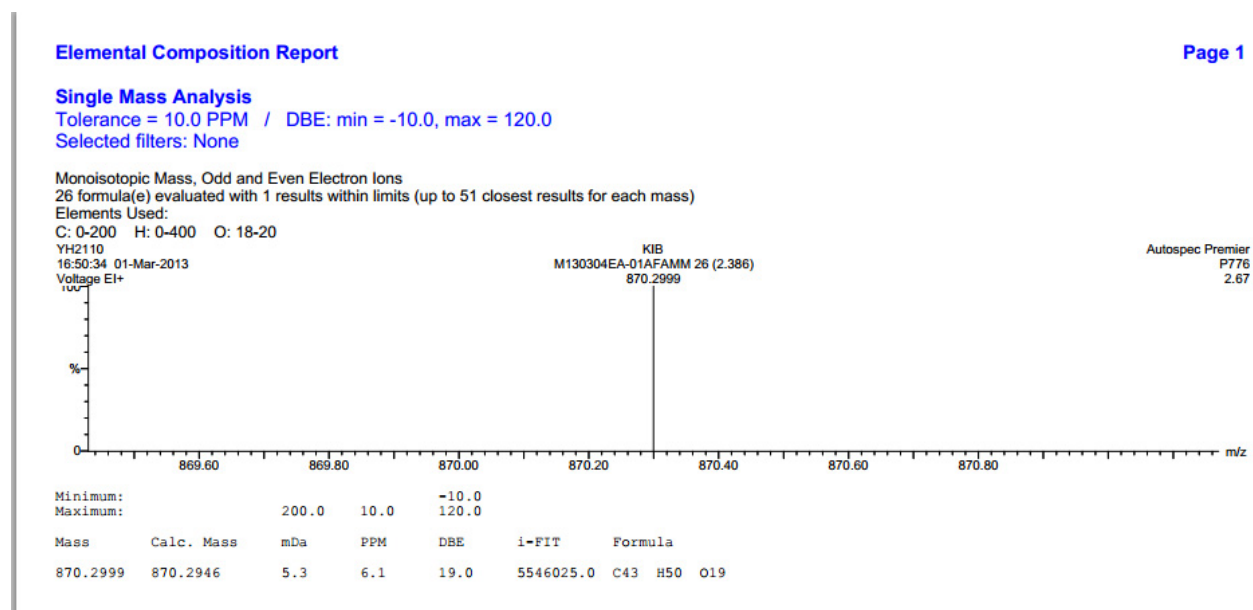


Fig. 8. ^1H NMR (600 MHz, 313 K) spectrum of compound **2** in $\text{DMSO}-d_6$.

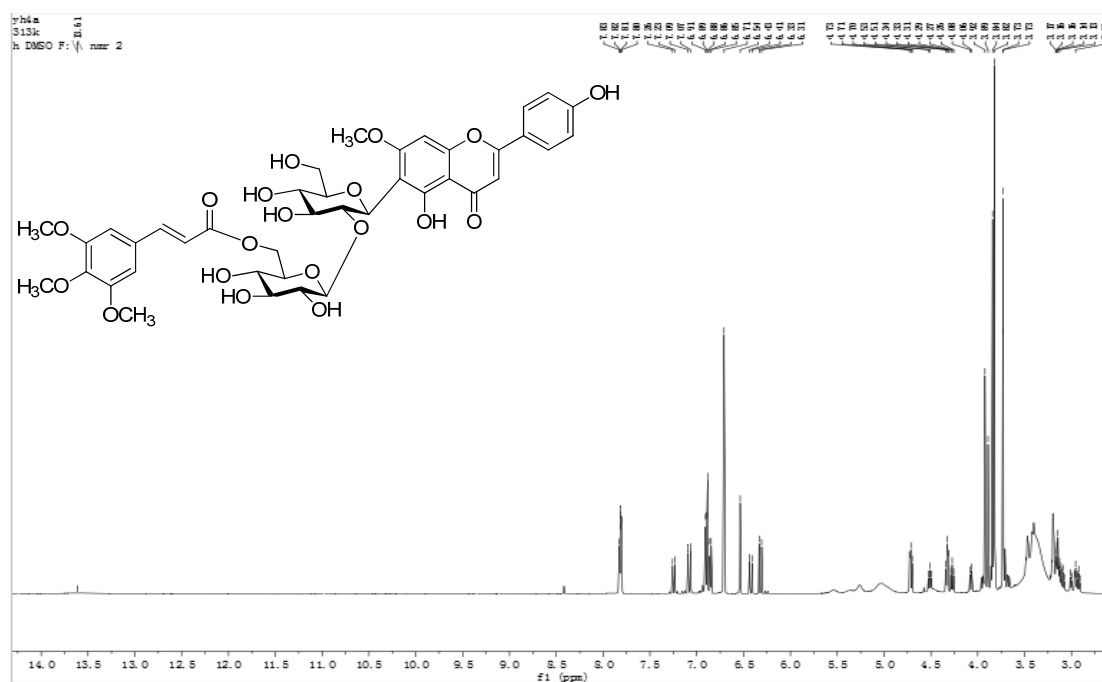


Fig. 9. ^{13}C NMR (150 MHz, 313 K) spectrum of compound **2** in $\text{DMSO}-d_6$.

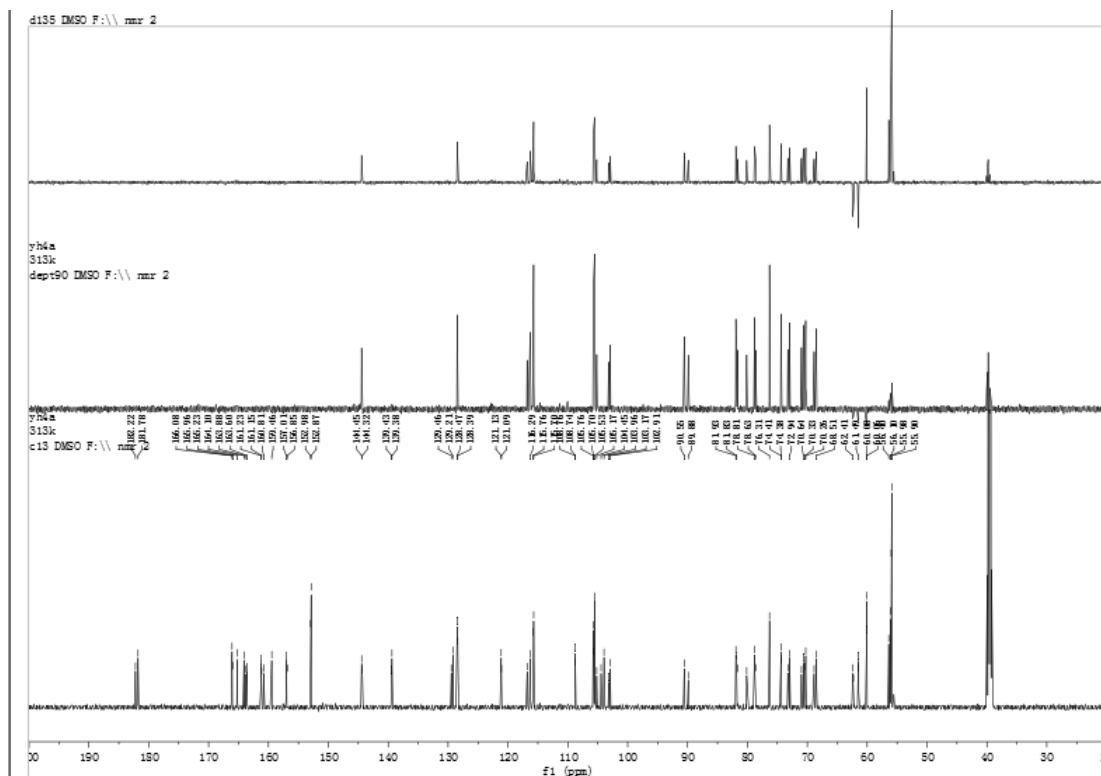


Fig. 10. HSQC (313 K) spectrum of compound **2** in DMSO- d_6 .

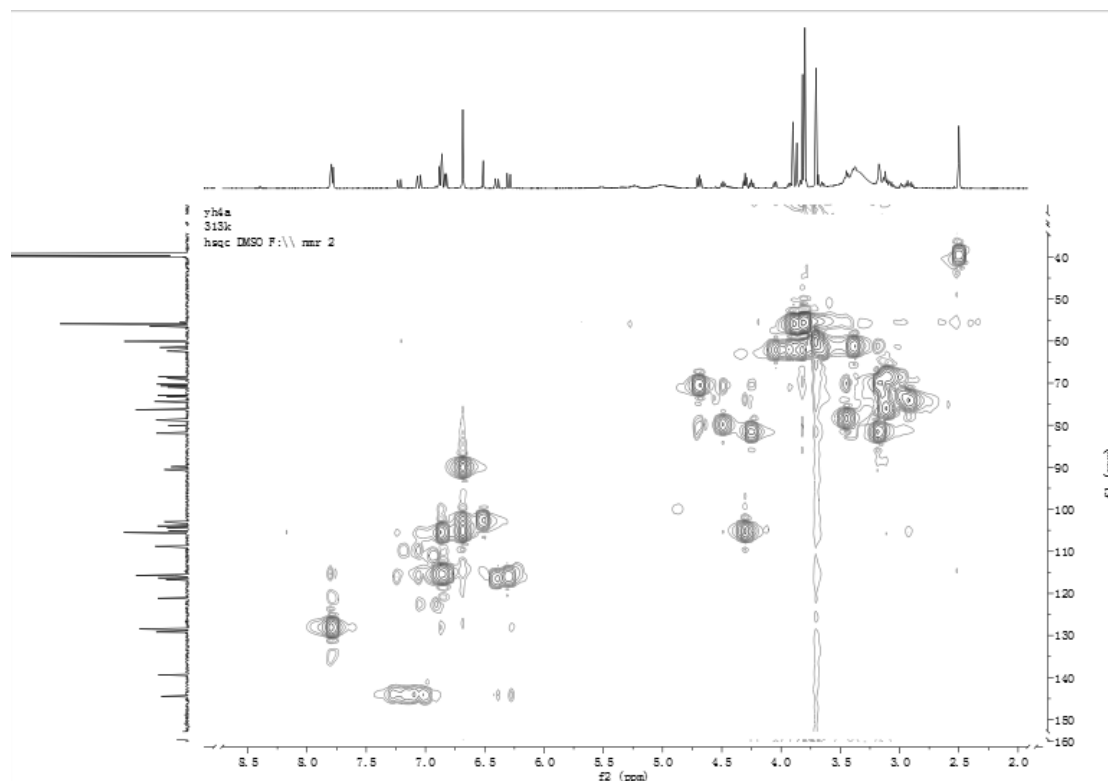


Fig. 11. HMBC (313 K) spectrum of compound **2** in DMSO- d_6 .

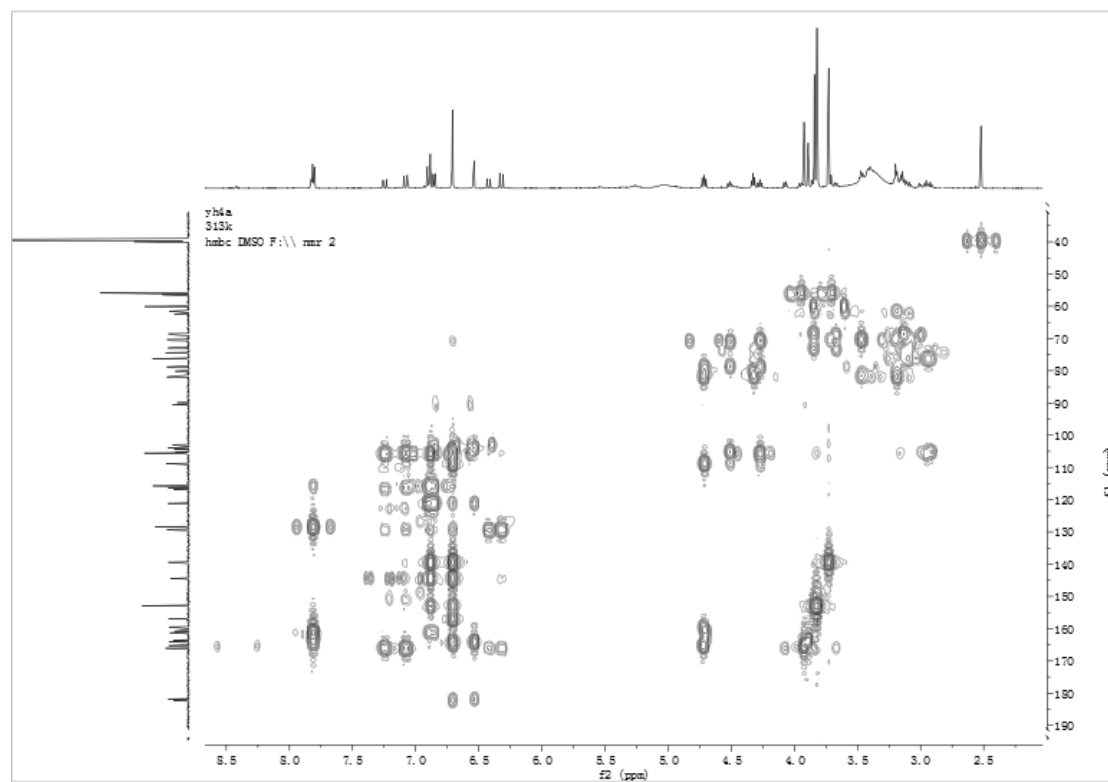


Fig. 12. HREIMS of compound 2.

Elemental Composition Report

Page 1

Single Mass Analysis

Tolerance = 10.0 PPM / DBE: min = -10.0, max = 120.0

Selected filters: None

Monoisotopic Mass, Odd and Even Electron Ions

25 formula(e) evaluated with 1 results within limits (up to 51 closest results for each mass)

Elements Used:

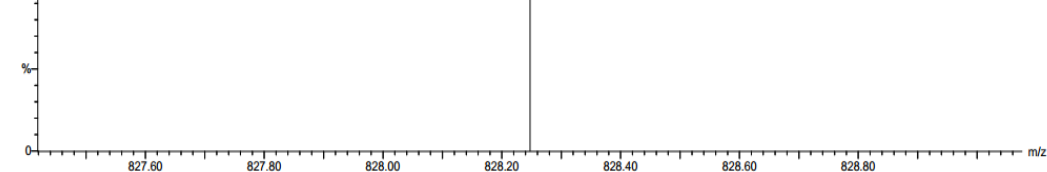
C: 0-200 H: 0-400 O: 18-20

YH4a

17:13:30 01-Mar-2013

Voltage EI+

100%



Autospec Premier
P776
1

Minimum: -10.0
Maximum: 200.0 10.0 120.0

Mass	Calc. Mass	mDa	PPM	DBE	i-FIT	Formula
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Fig. 13. ^1H NMR (600 MHz, 313 K) spectrum of compound **3** in $\text{DMSO}-d_6$.

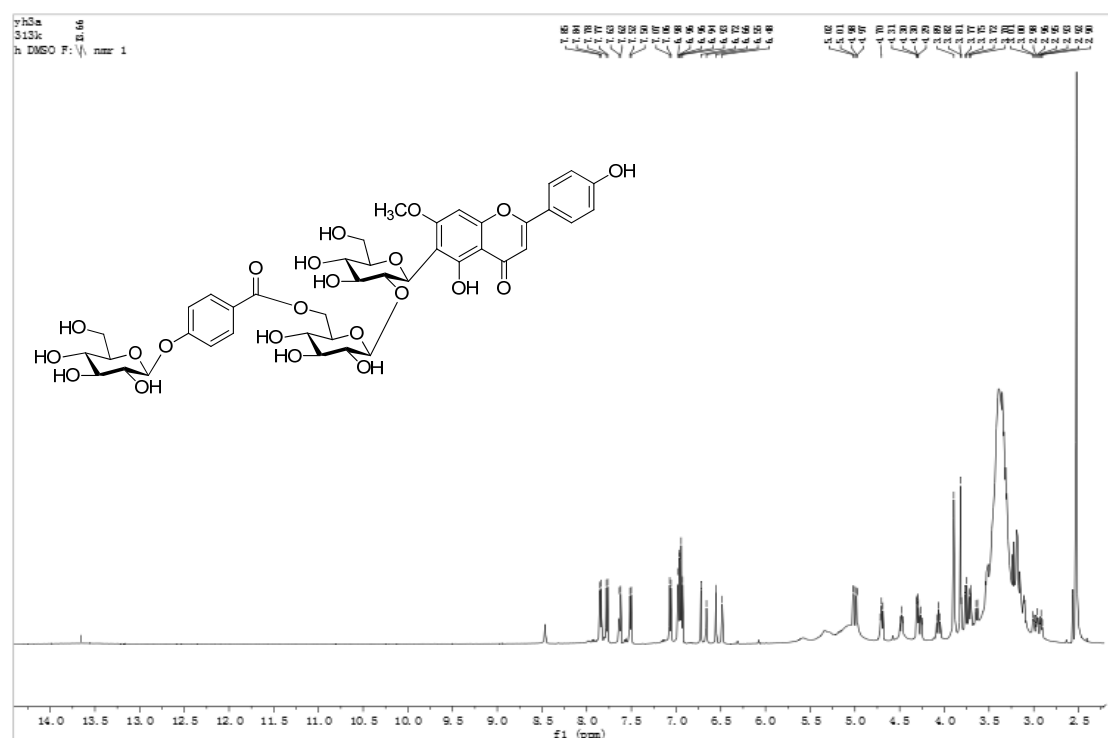


Fig. 14. ^{13}C NMR (150 MHz, 313 K) spectrum of compound **3** in $\text{DMSO}-d_6$.

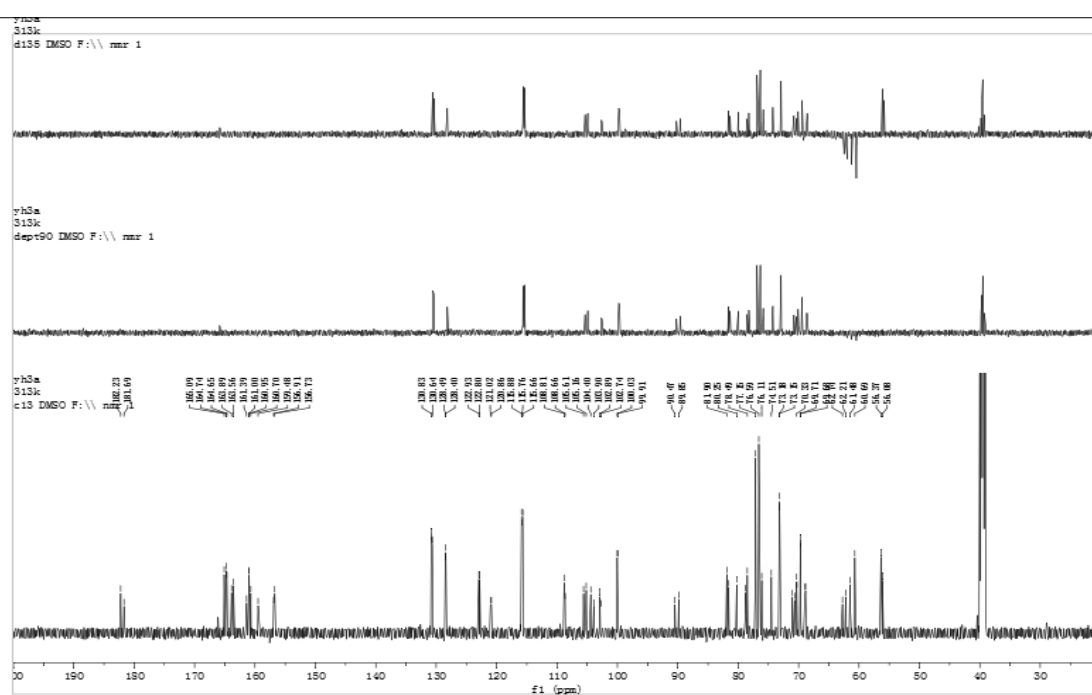


Fig. 15. HSQC (313 K) spectrum of compound **3** in DMSO- d_6 .

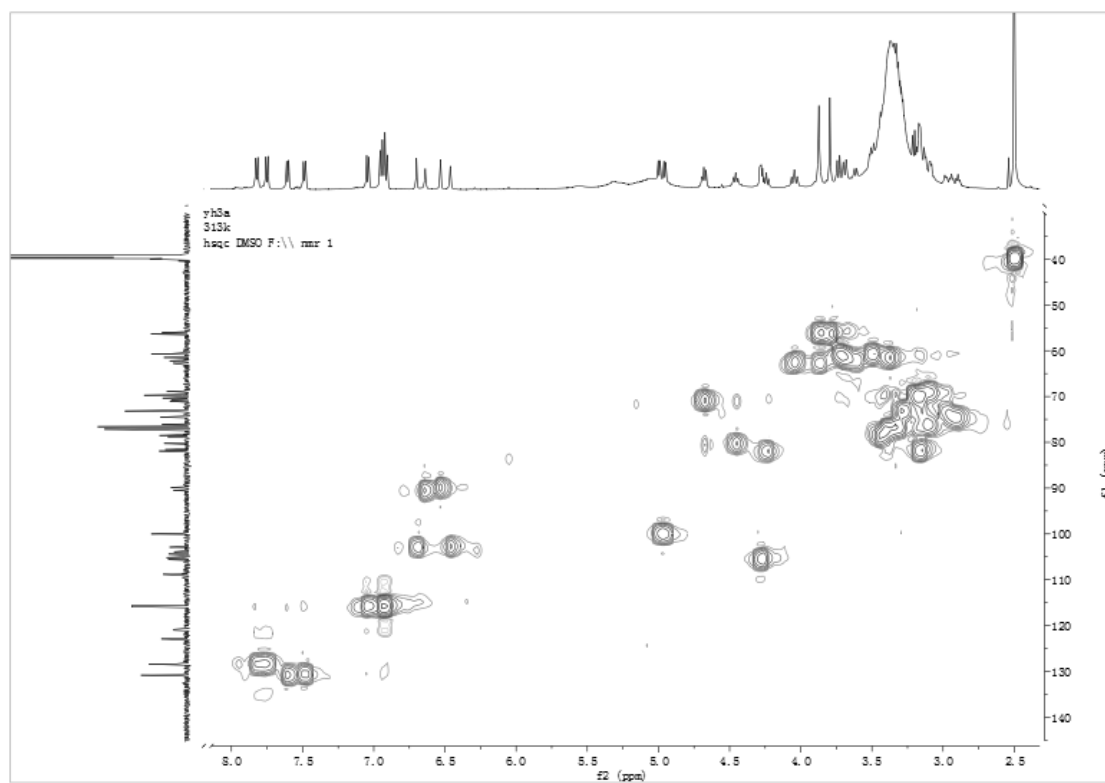


Fig. 16. HMBC (313 K) spectrum of compound **3** in DMSO- d_6 .

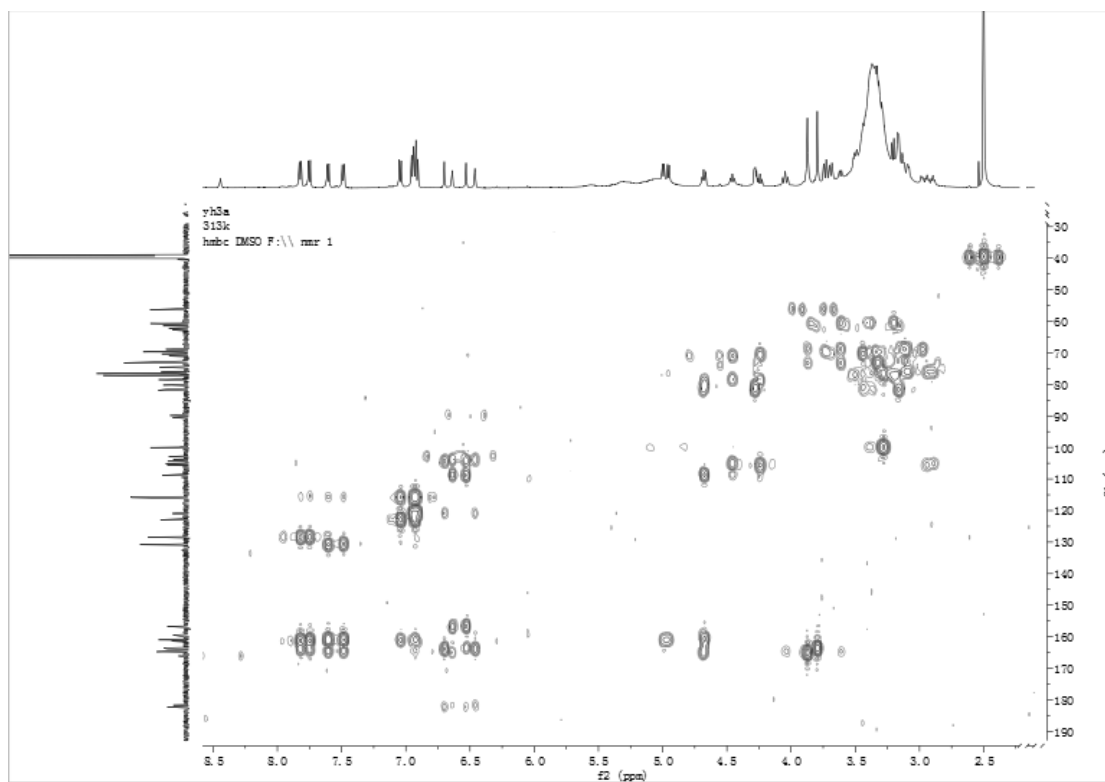


Fig. 17. HREIMS of compound **3**.

Elemental Composition Report

Page 1

Single Mass Analysis

Tolerance = 10.0 PPM / DBE: min = -10.0, max = 120.0

Selected filters: None

Monoisotopic Mass, Odd and Even Electron Ions

25 formula(e) evaluated with 1 results within limits (up to 51 closest results for each mass)

Elements Used:

C: 0-200 H: 0-400 O: 21-23

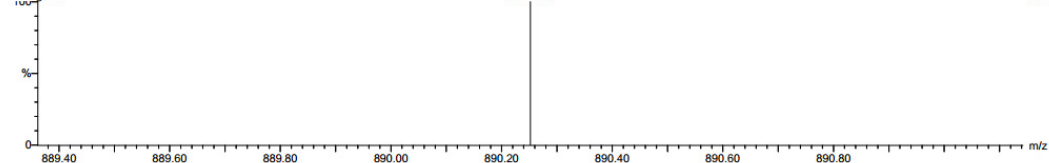
YH3a

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Voltage EI+

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890.2523

Autospec Premier
P776
1.67



Minimum:		200.0	10.0	-10.0		
Maximum:				120.0		
Mass	Calc. Mass	mDa	PPM	DBE	i-FIT	Formula
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Fig. 18. Chemical structures of known compounds 4–22

