

Supplementary Materials

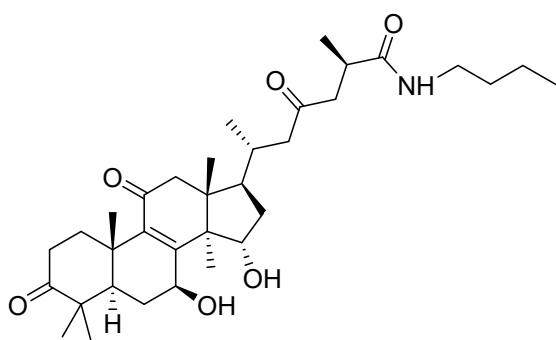
Ganoderic Acid A and its amide Derivatives as Potential Anti-cancer Agents by Regulating p53-MDM2 Pathway: Synthesis and Biological Evaluation

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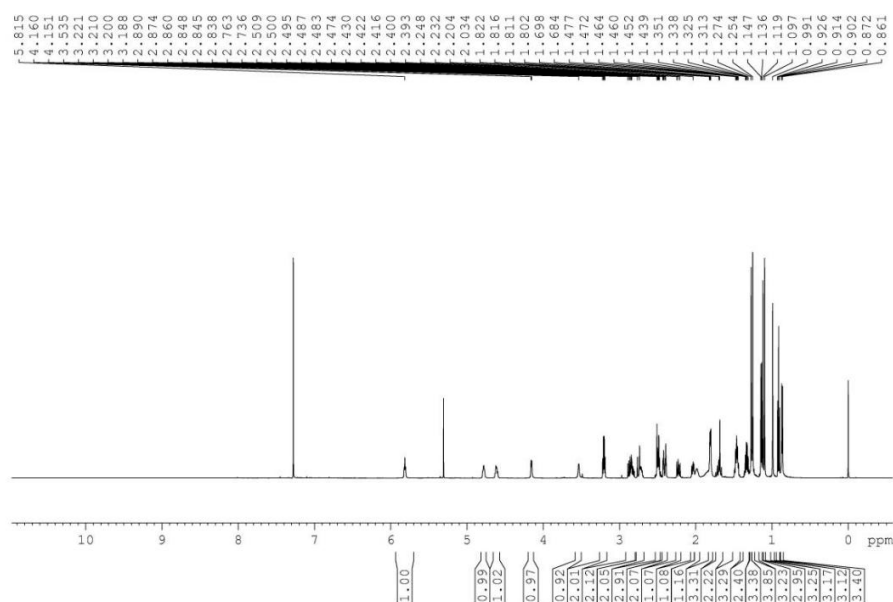
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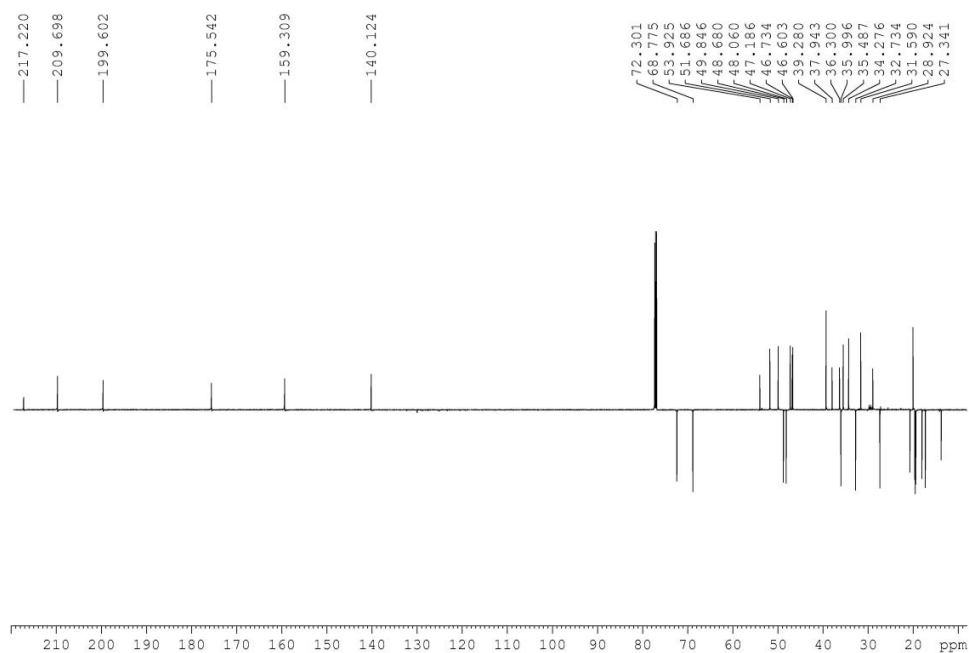
The NMR and HRMS spectra of all the new synthesized compounds.



Supplementary Figure. S1 The chemical structure of compound **A1**. Chemical formula C₃₄H₅₃NO₆; molecular weight: 571.80

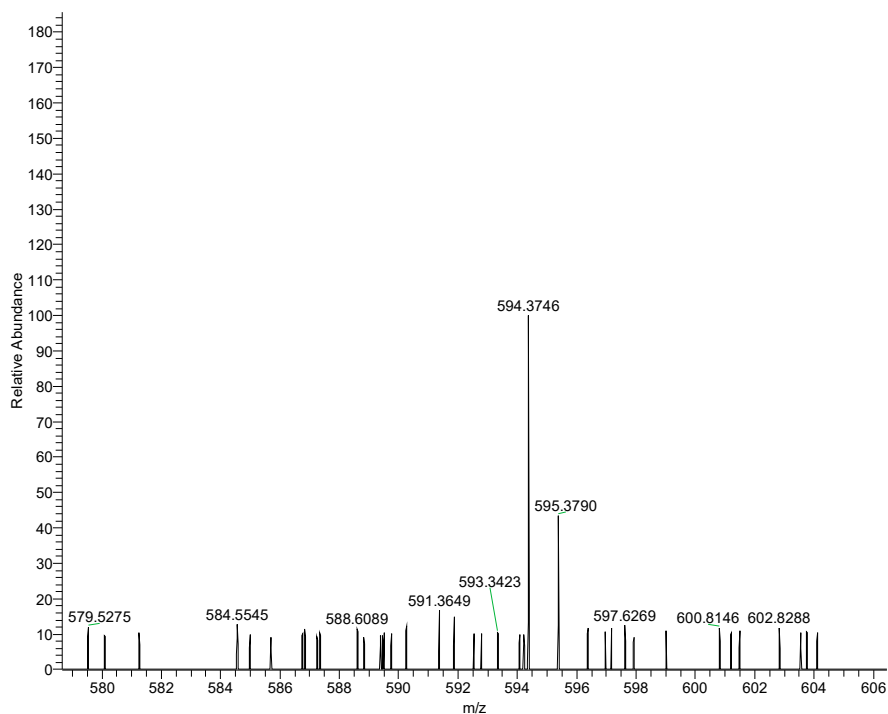


Supplementary Figure. S2 The ¹H NMR spectra of compound **A1**

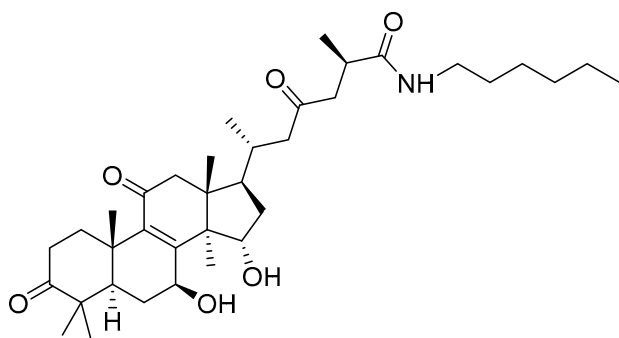


Supplementary Figure. S3 The ¹³C NMR spectra of compound A1

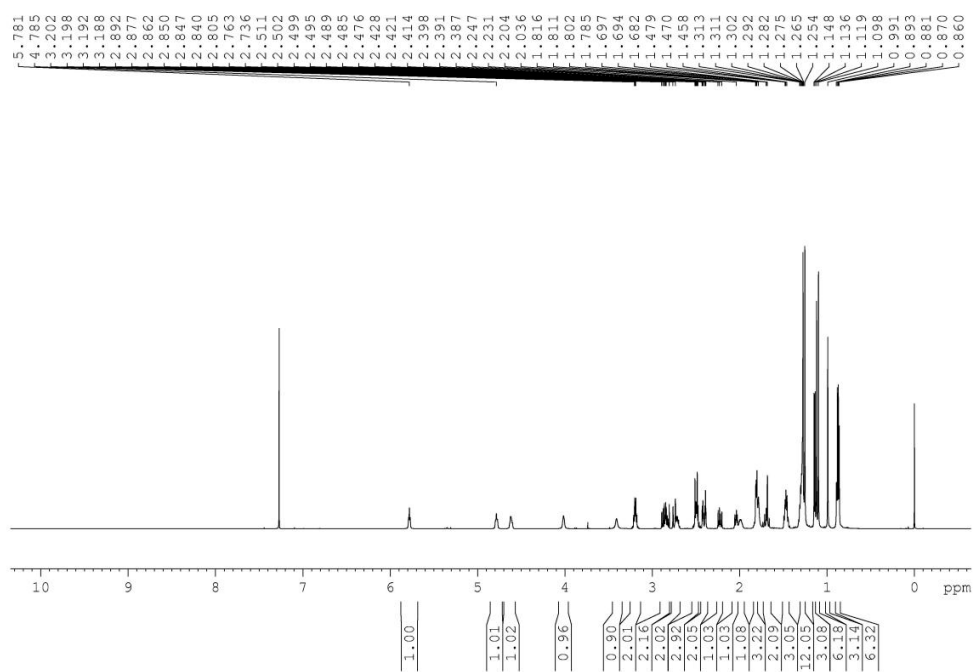
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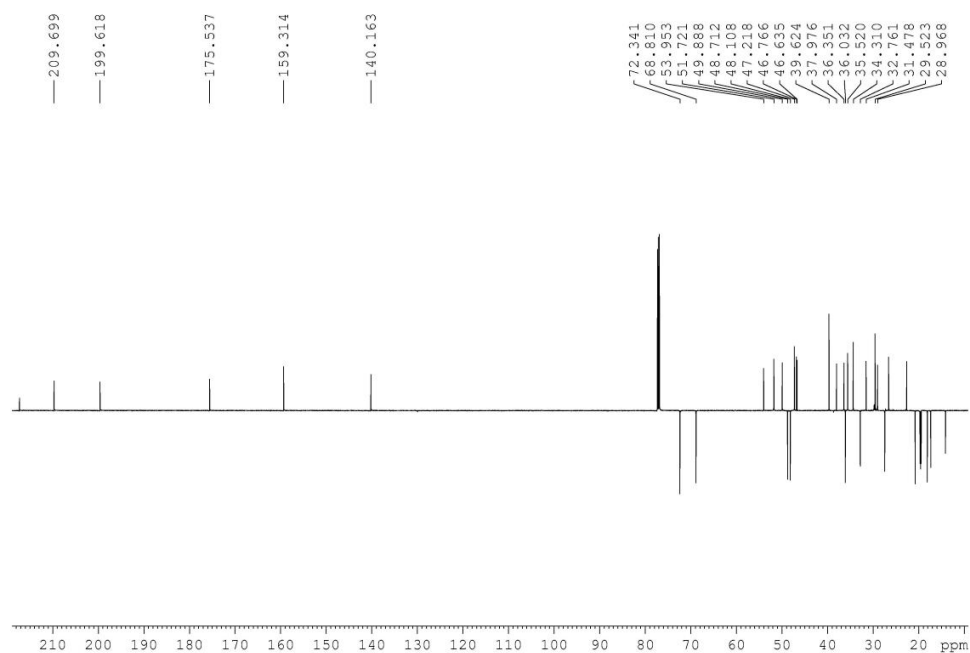
Supplementary Figure. S4 The HRMS spectra of compound A1



Supplementary Figure. S5 The chemical structure of compound **A2**. Chemical formula $C_{36}H_{57}NO_6$; molecular weight 599.85

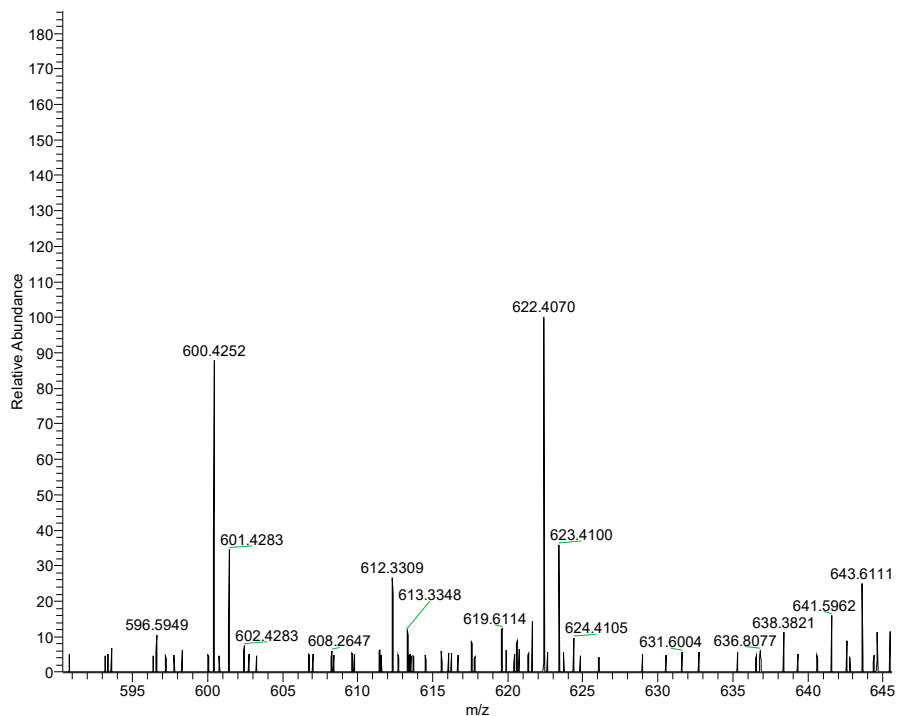


Supplementary Figure. S6 The 1H NMR spectra of compound **A2**

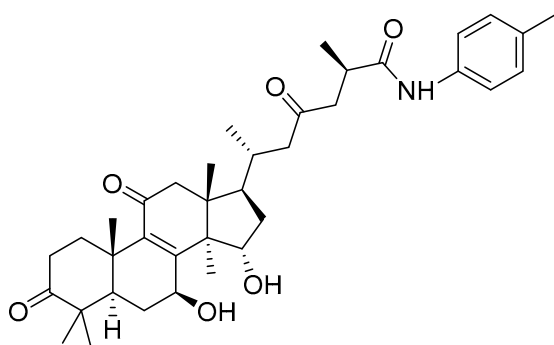


Supplementary Figure. S7 The ^{13}C NMR spectra of compound **A2**

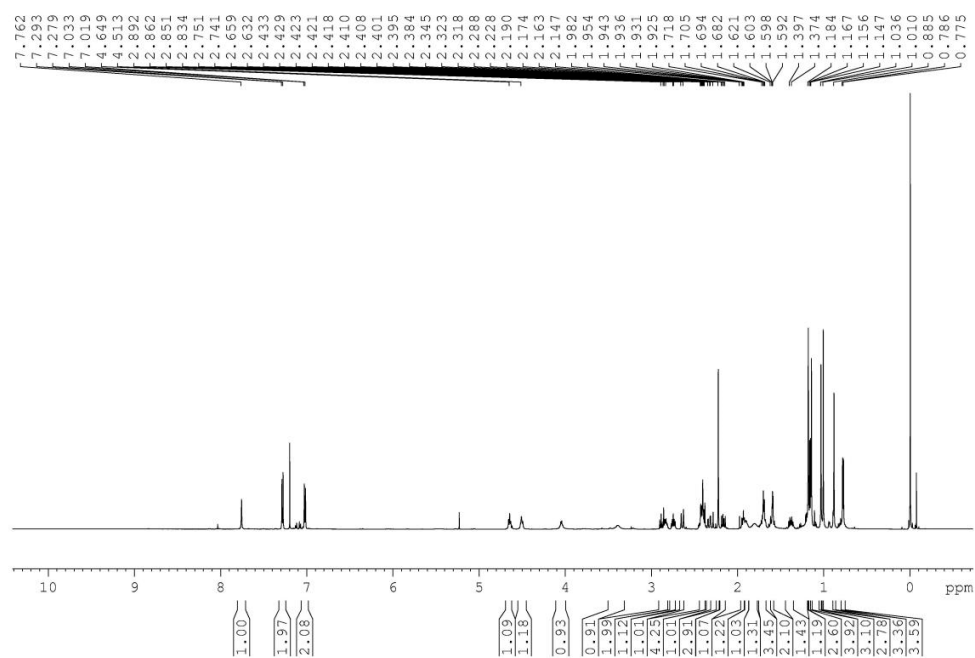
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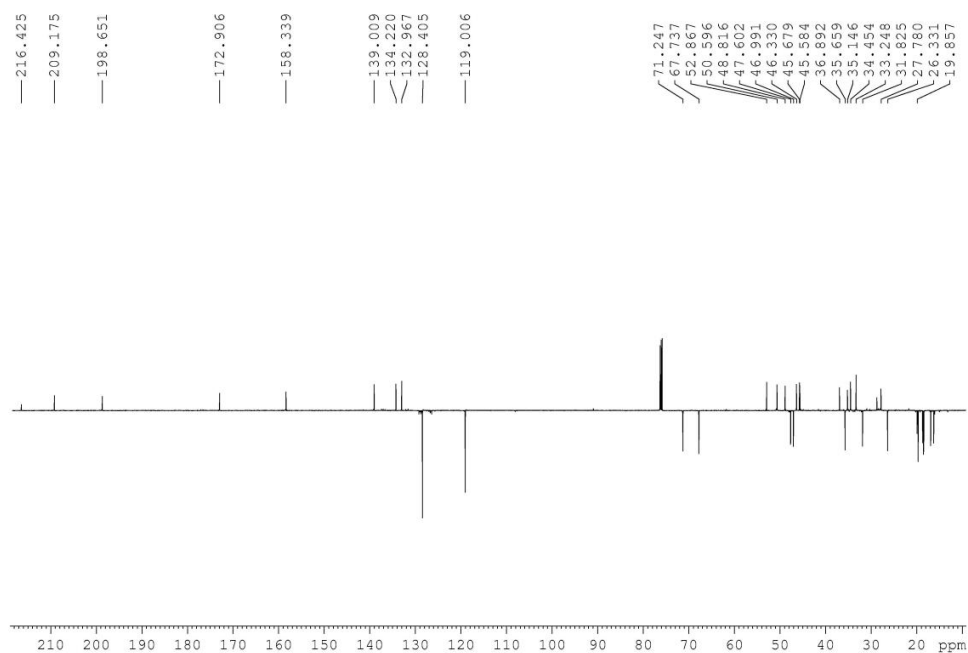
Supplementary Figure. S8 The HRMS spectra of compound **A2**



Supplementary Figure. S9 The chemical structure of compound **A3**. Chemical formula $C_{37}H_{51}NO_6$; molecular weight: 605.82

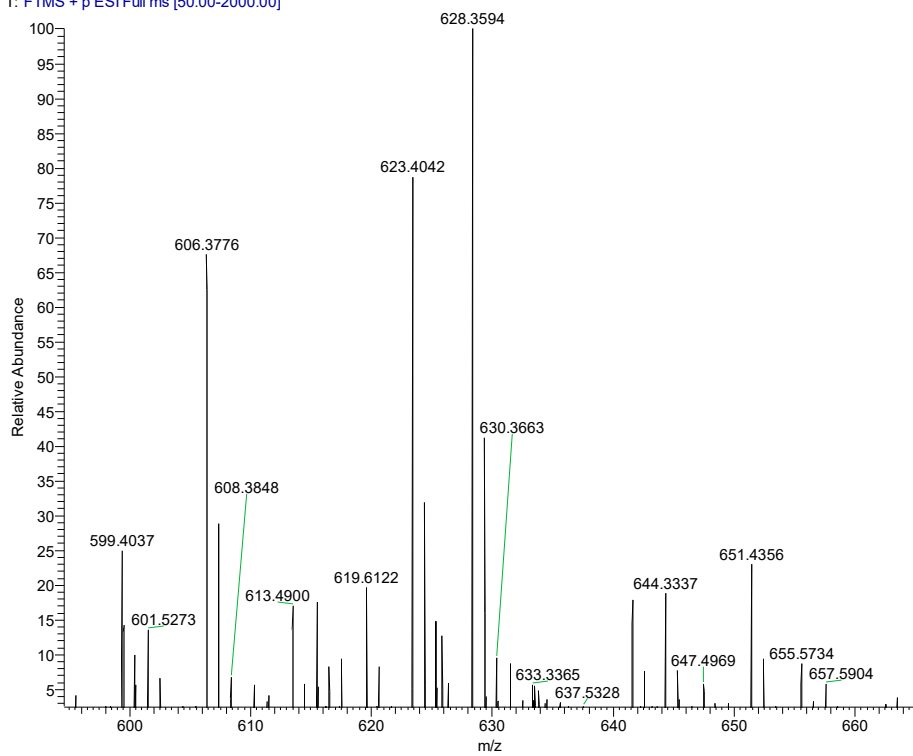


Supplementary Figure. S10 The 1H NMR spectra of compound **A3**

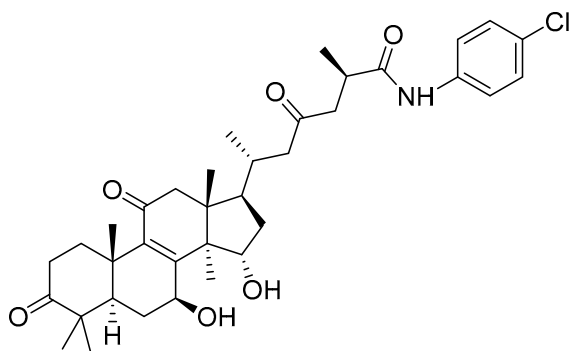


Supplementary Figure. S11 The ^{13}C NMR spectra of compound **A3**

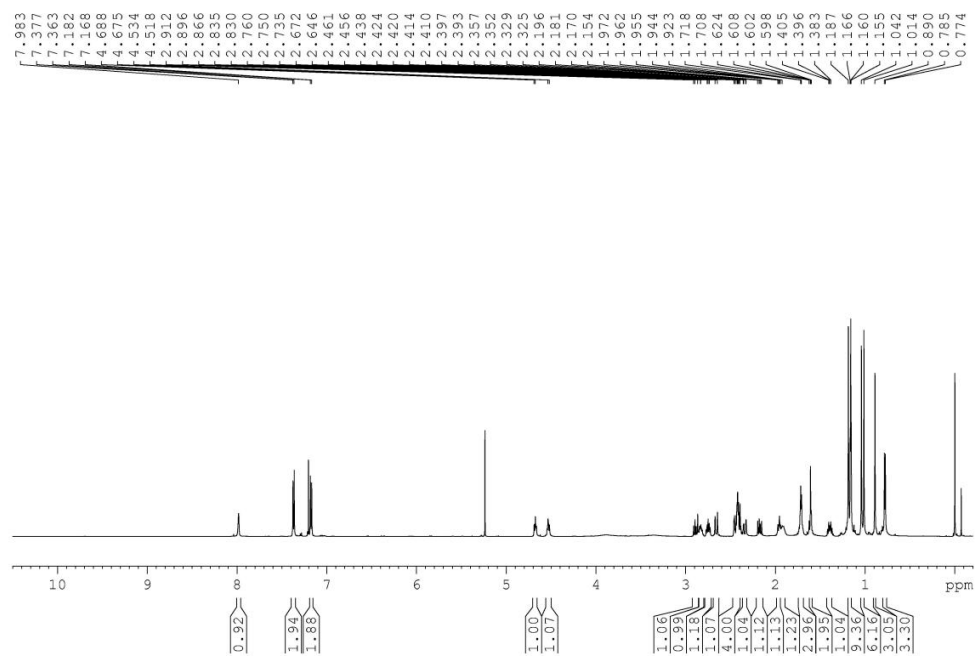
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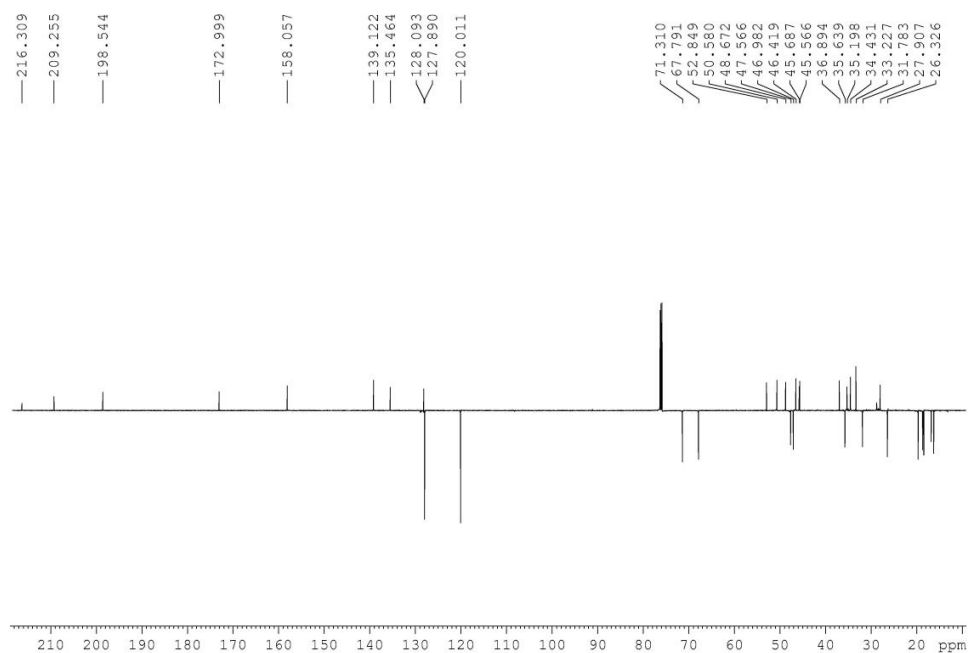
Supplementary Figure. S12 The HRMS spectra of compound **A3**



Supplementary Figure. S13 The chemical structure of compound **A4**. Chemical formula $C_{36}H_{48}ClNO_6$; molecular weight: 626.23

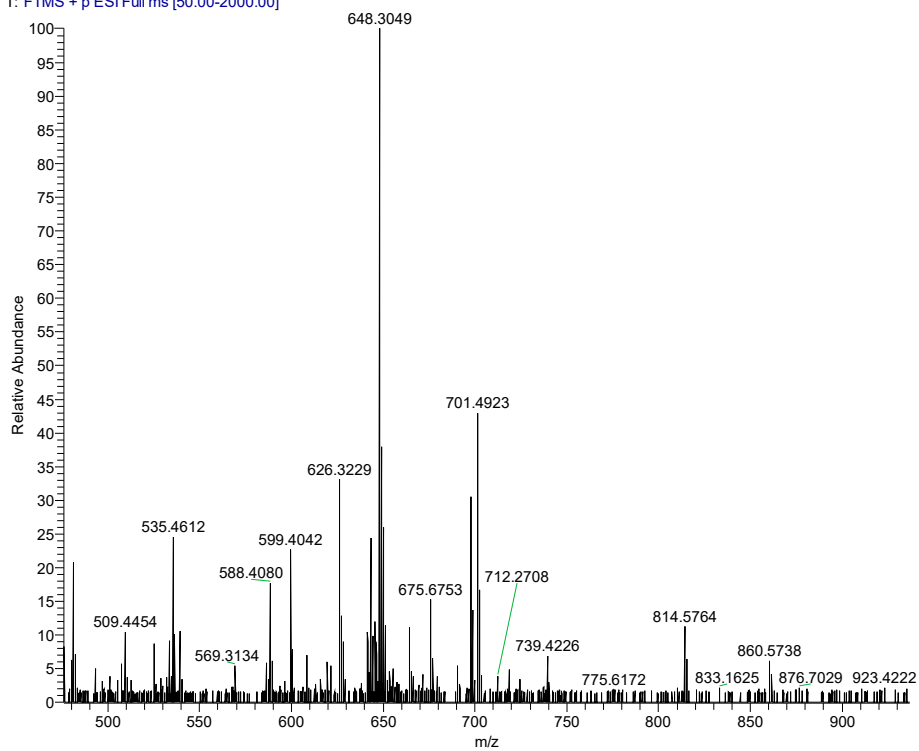


Supplementary Figure. S14 The 1H NMR spectra of compound **A4**

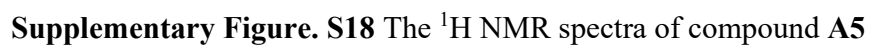
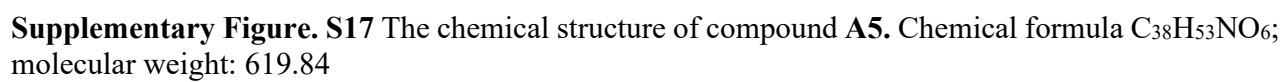


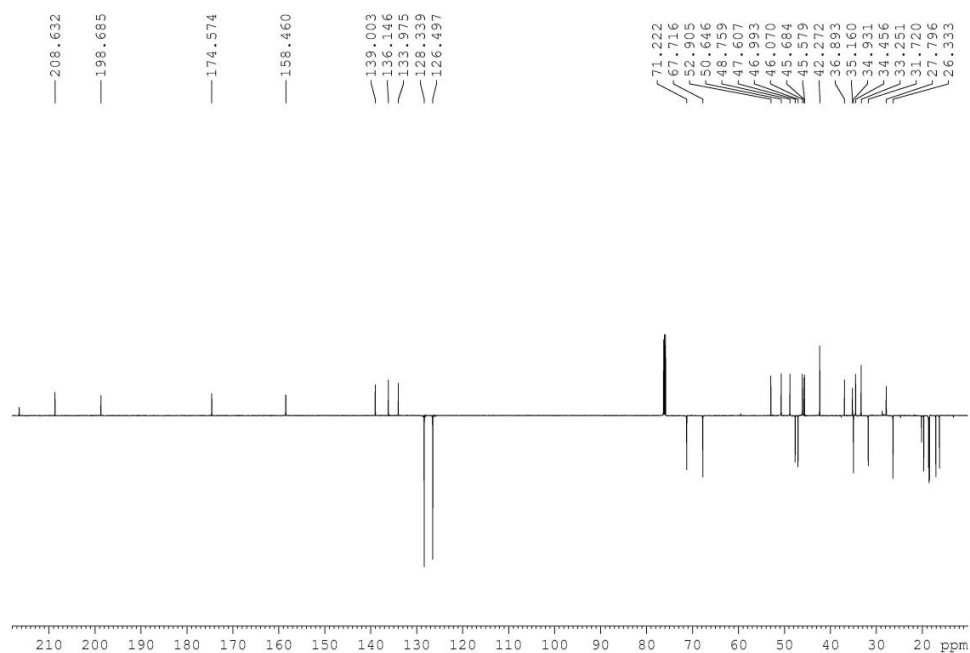
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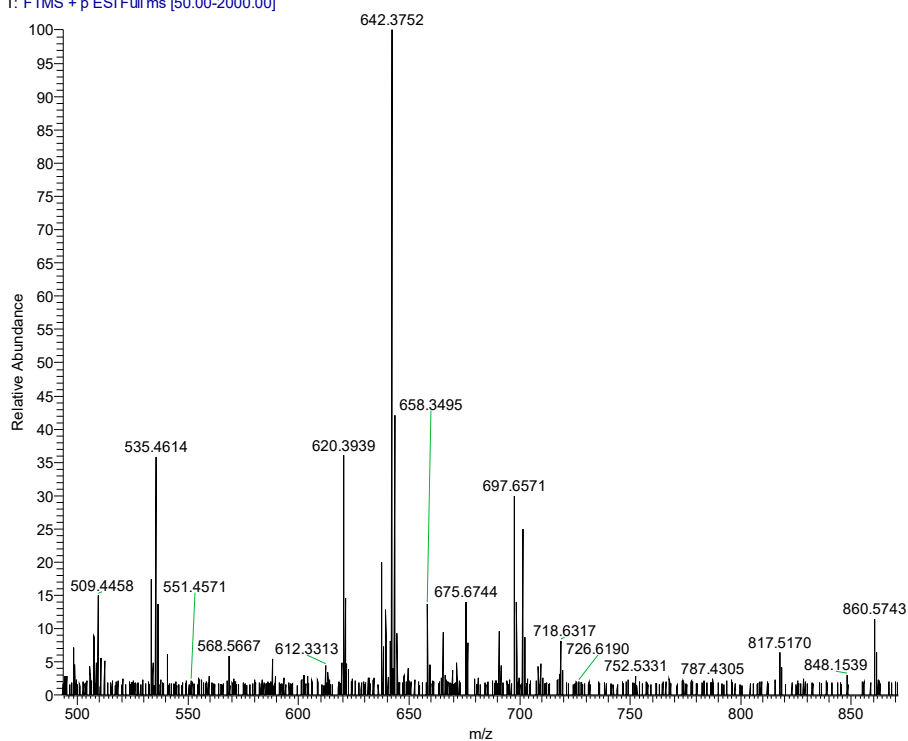
Supplementary Figure. S16 The ^1H NMR spectra of compound A4



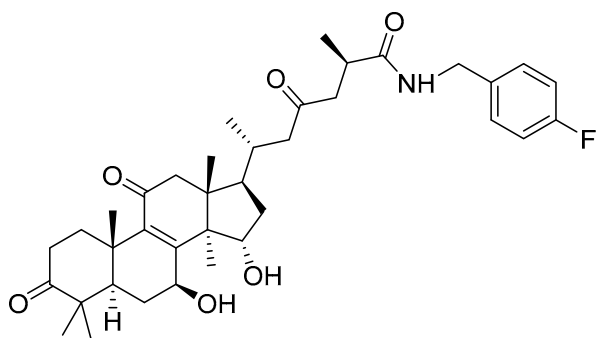


Supplementary Figure. S19 The ^{13}C NMR spectra of compound **A5**

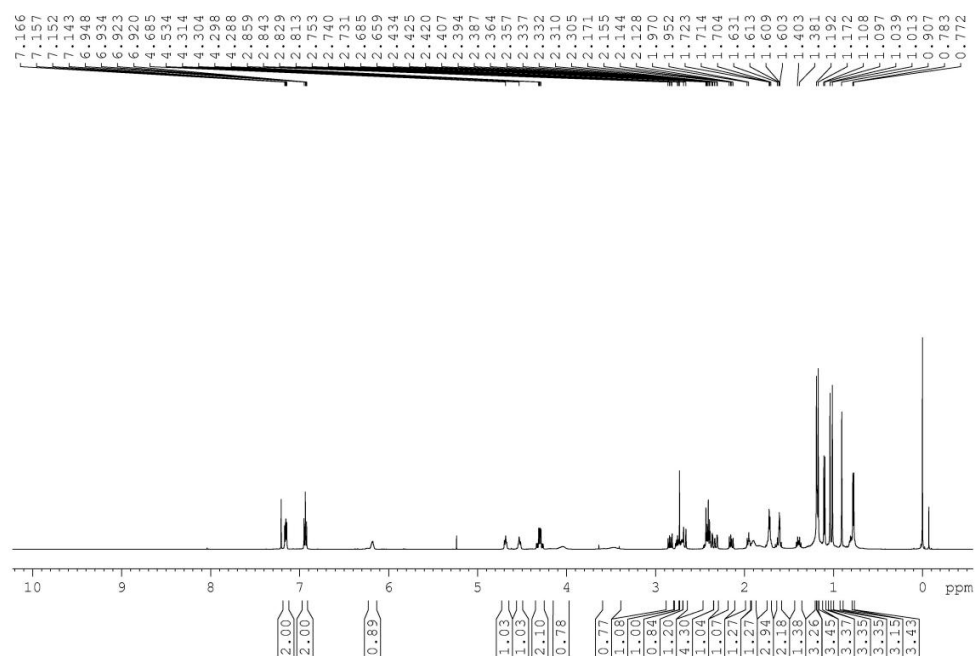
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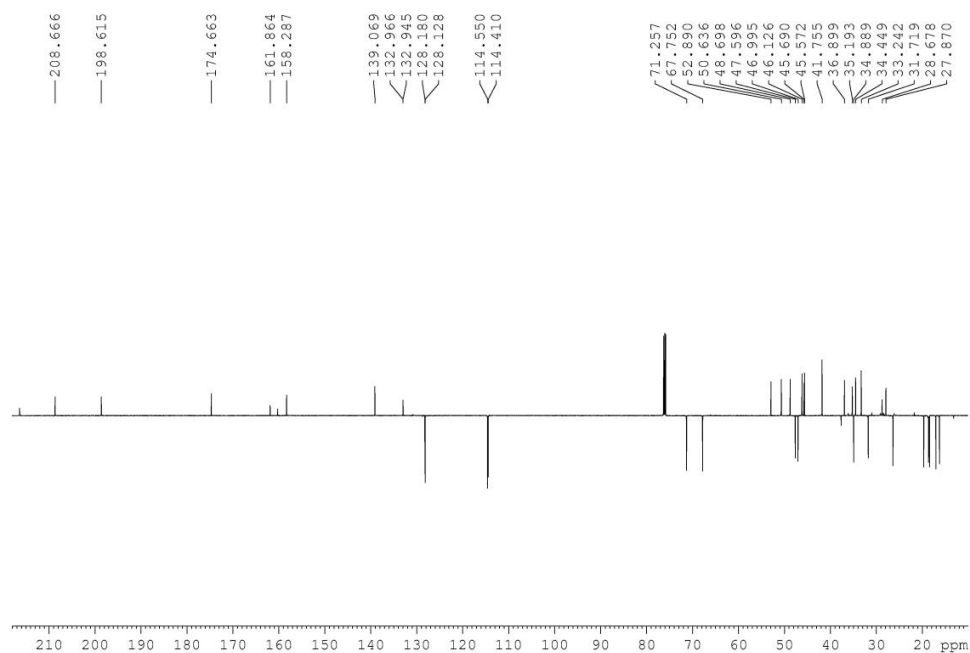
Supplementary Figure. S20 The HRMS spectra of compound **A5**



Supplementary Figure. S21 The chemical structure of compound **A6**. Chemical formula $C_{37}H_{50}FNO_6$; molecular weight: 623.81

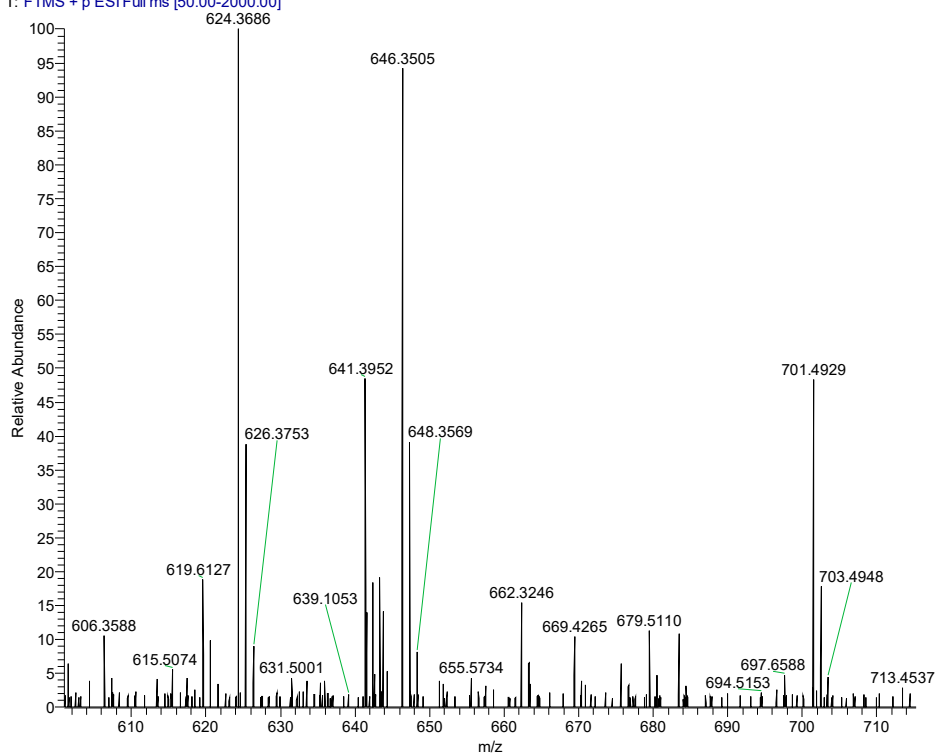


Supplementary Figure. S22 The 1H NMR spectra of compound **A6**

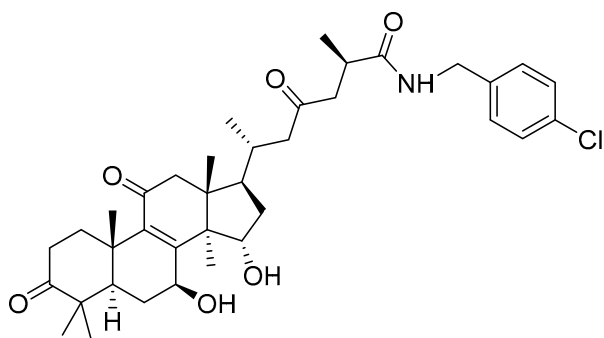


Supplementary Figure. S23 The ^{13}C NMR spectra of compound **A6**

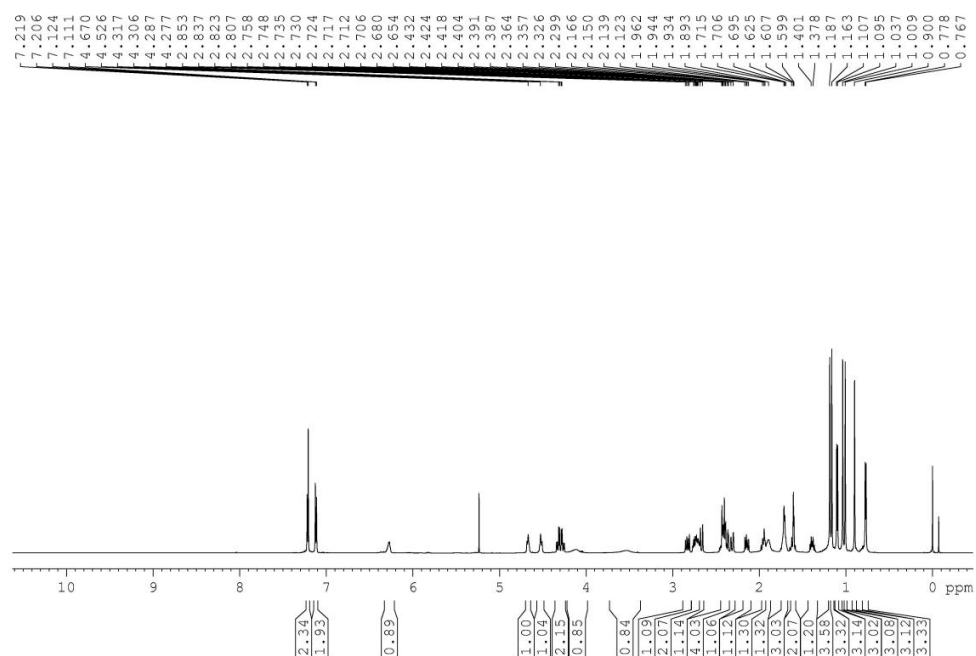
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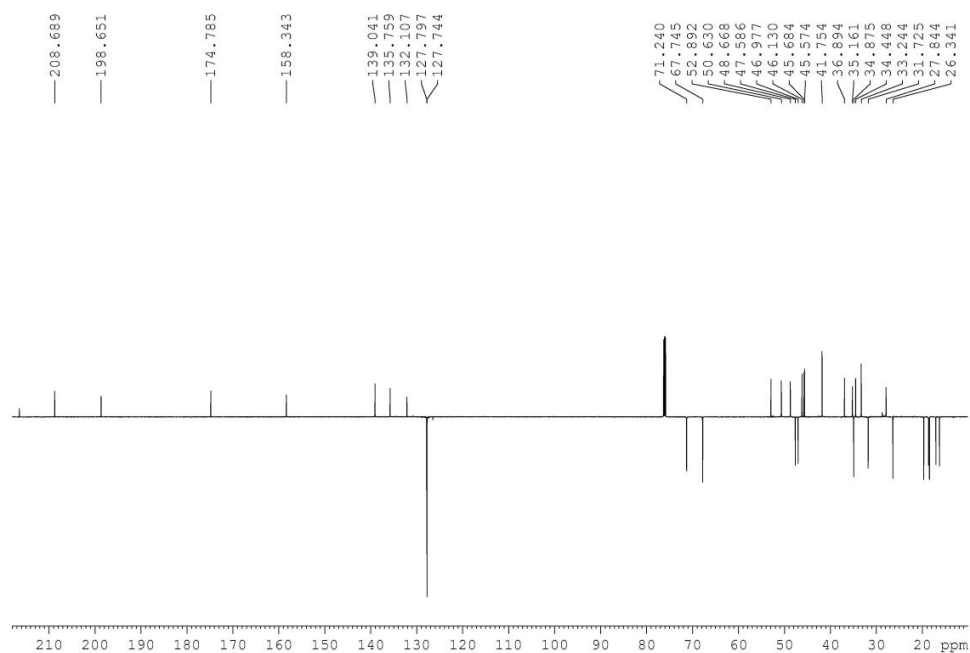
Supplementary Figure. S24 The HRMS spectra of compound **A6**



Supplementary Figure. S25 The chemical structure of compound **A7**. Chemical formula $C_{37}H_{50}ClNO_6$; molecular weight: 640.26

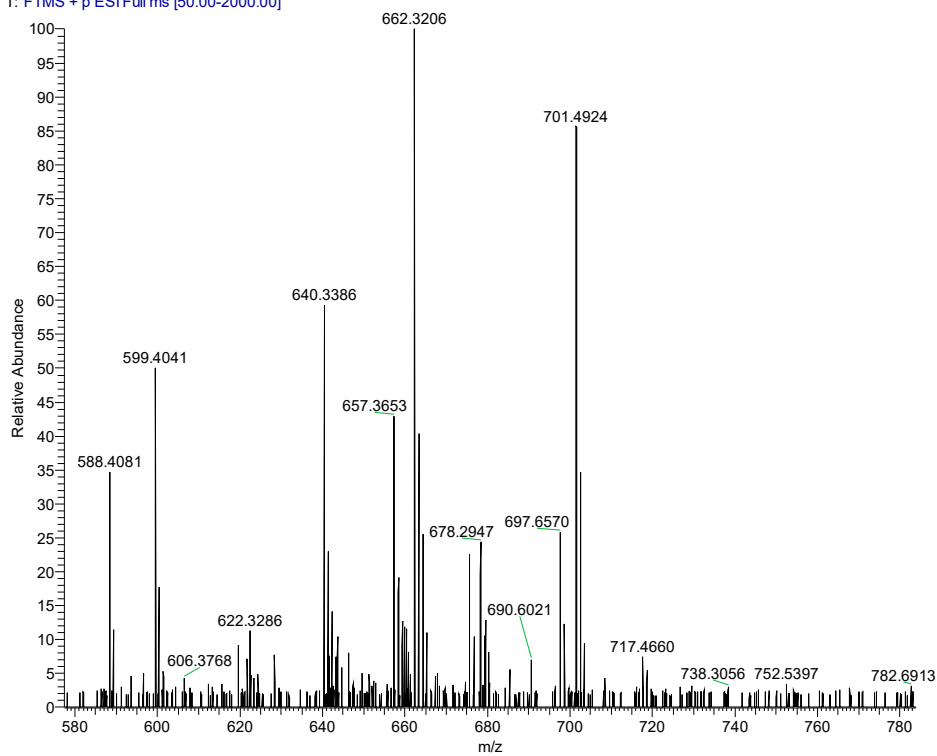


Supplementary Figure. S26 The 1H NMR spectra of compound **A7**

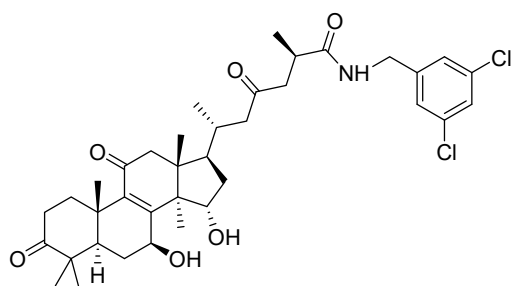


Supplementary Figure. S27 The ^{13}C NMR spectra of compound **A7**

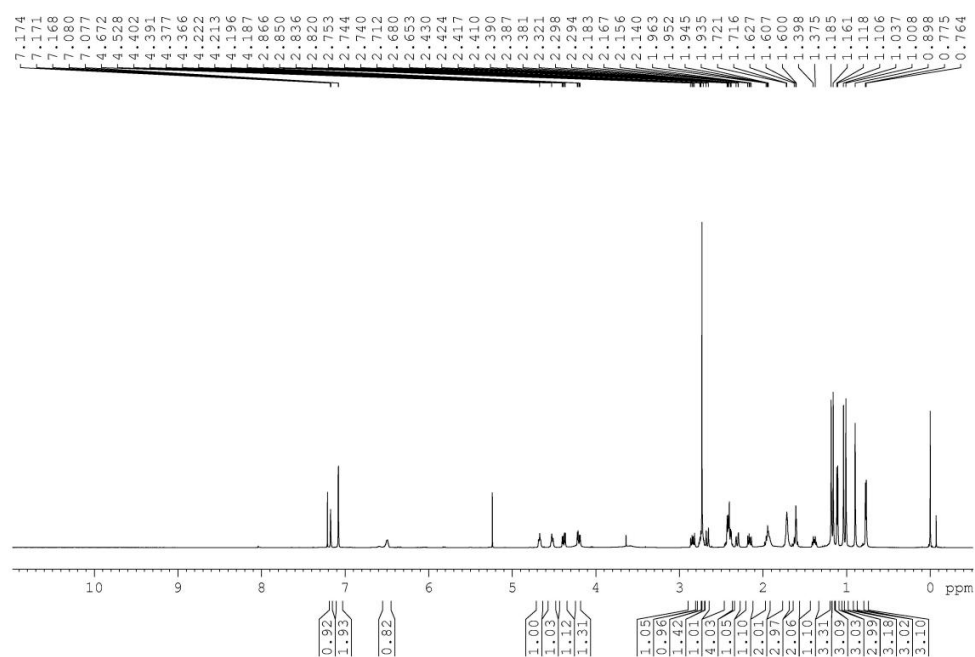
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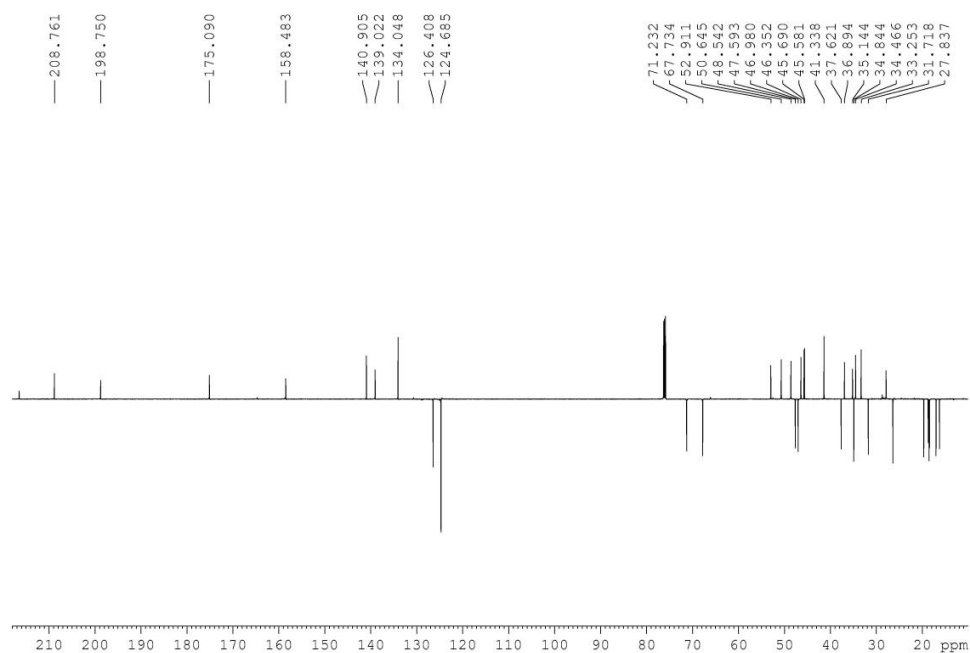
Supplementary Figure. S28 The HRMS spectra of compound **A7**



Supplementary Figure. S29 The chemical structure of compound **A8**. Chemical formula $C_{37}H_{49}Cl_2NO_6$; molecular weight: 674.70

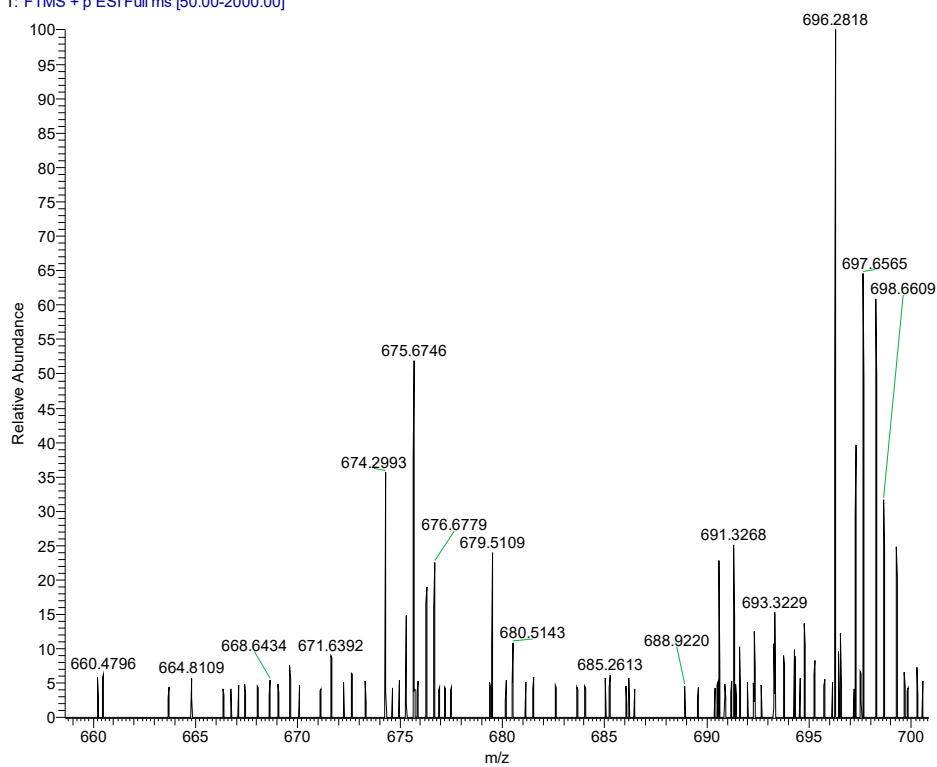


Supplementary Figure. S30 The 1H NMR spectra of compound **A8**

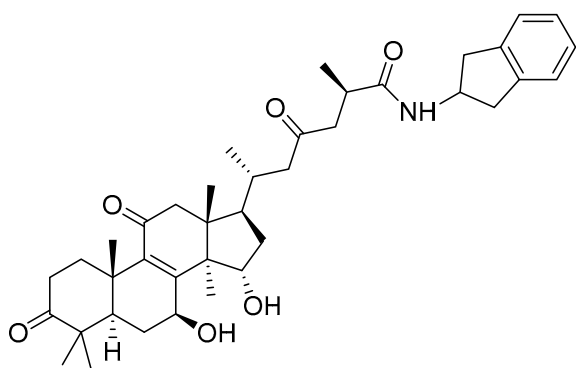


Supplementary Figure. S31 The ^{13}C NMR spectra of compound **A8**

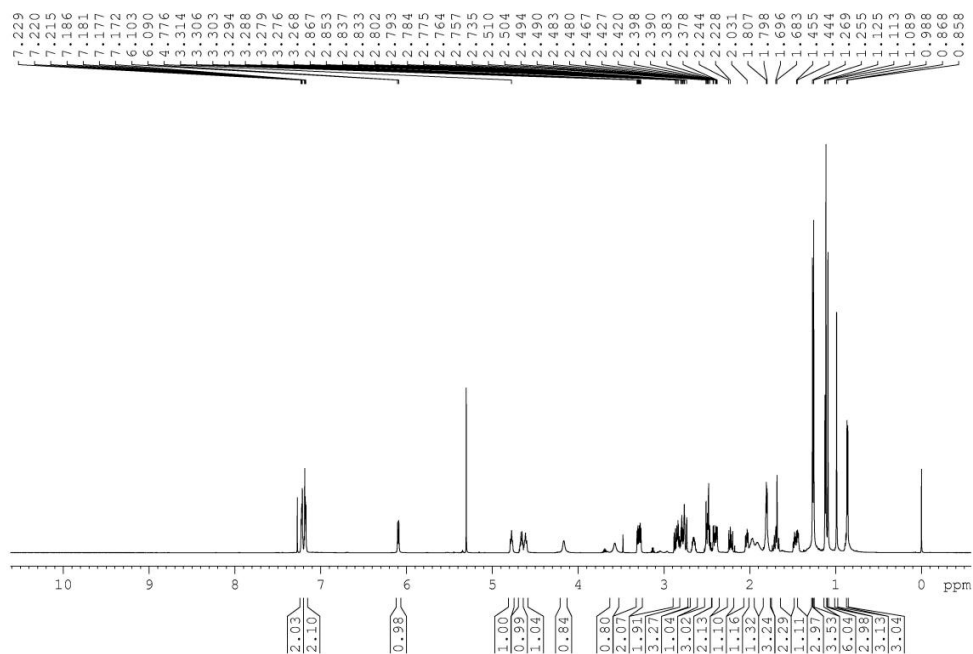
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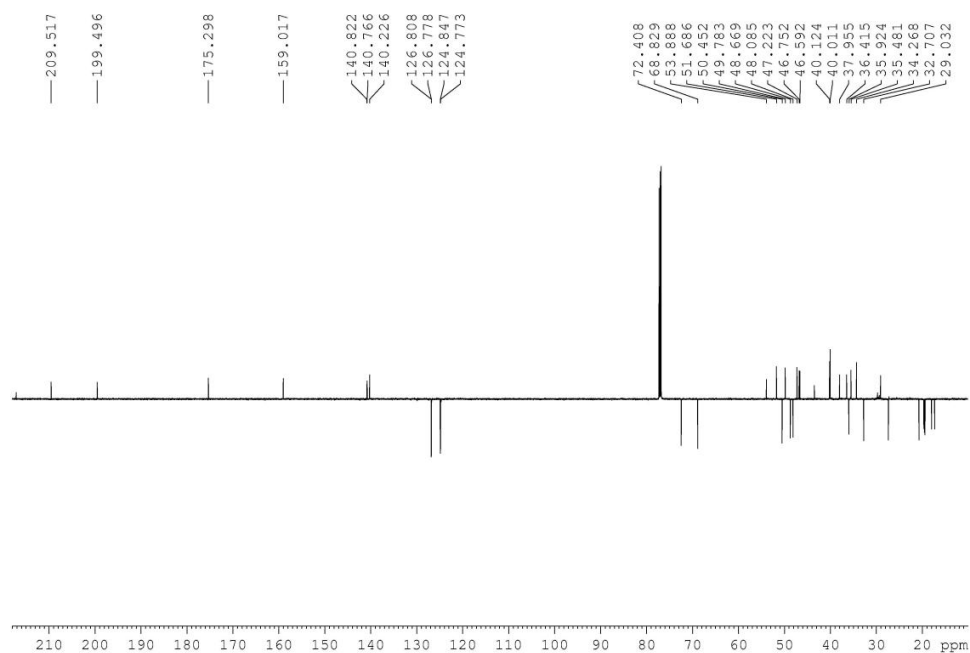
Supplementary Figure. S32 The HRMS spectra of compound **A8**



Supplementary Figure. S33 The chemical structure of compound **A9**. Chemical formula $C_{39}H_{53}NO_6$; molecular weight: 631.85

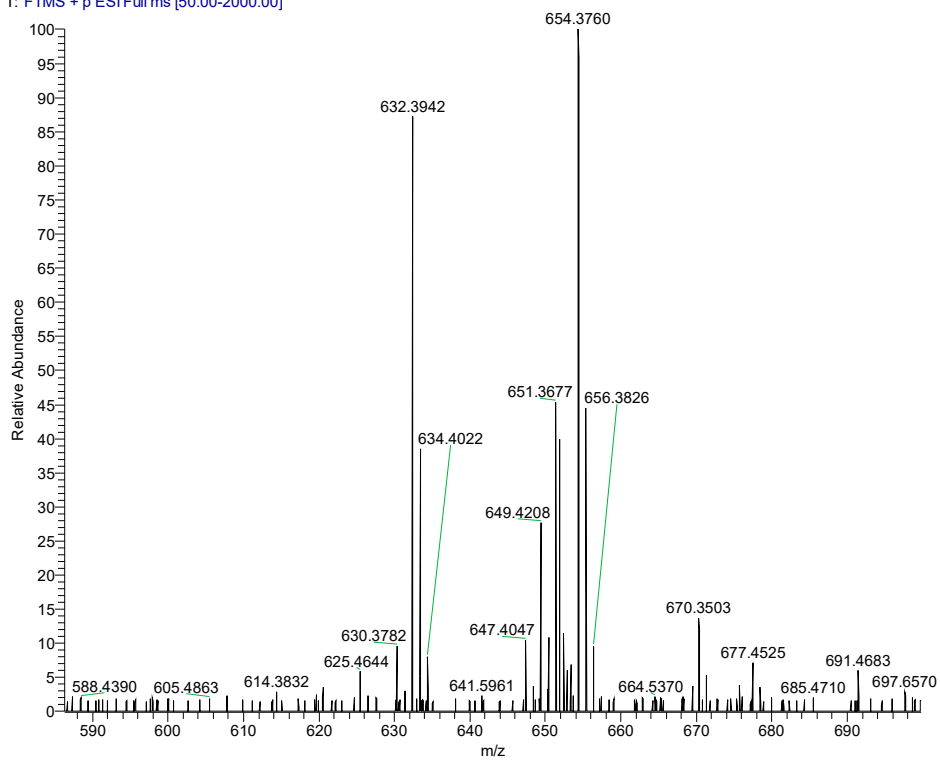


Supplementary Figure. S34 The 1H NMR spectra of compound **A9**

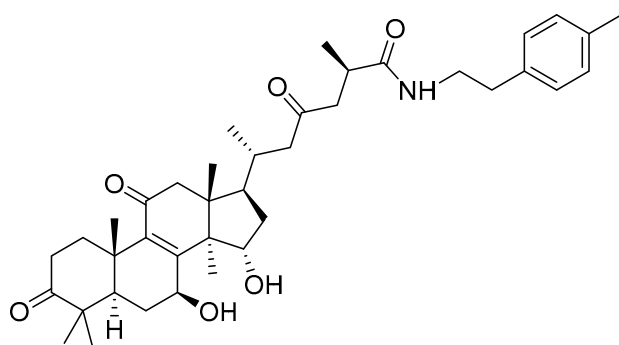


Supplementary Figure. S35 The ^{13}C NMR spectra of compound **A9**

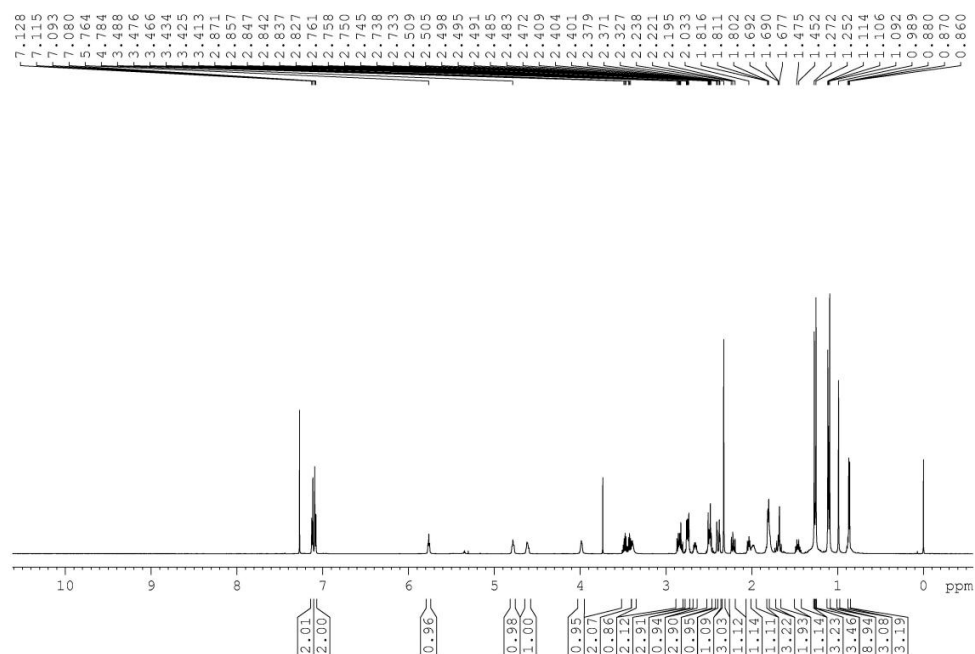
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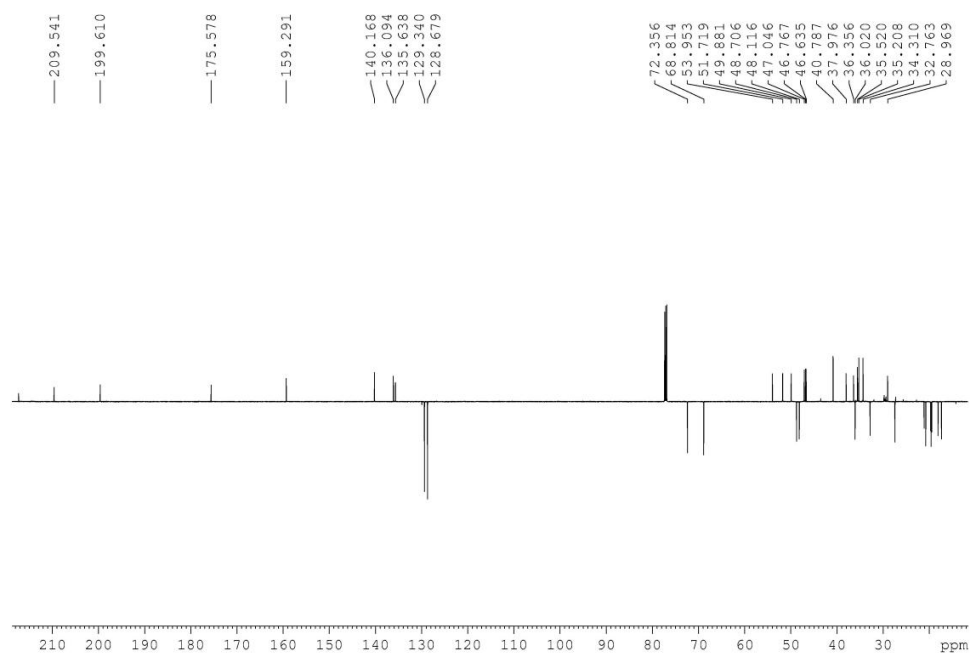
Supplementary Figure. S36 The HRMS spectra of compound **A9**



Supplementary Figure. S37 The chemical structure of compound **A10**. Chemical formula $C_{39}H_{55}NO_6$; molecular weight: 633.87

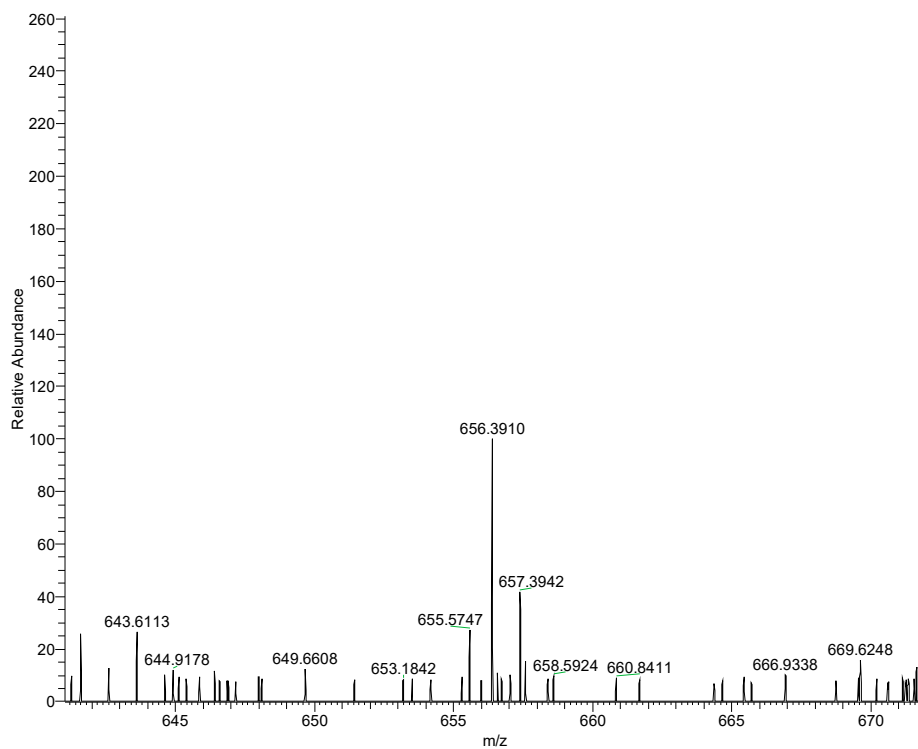


Supplementary Figure. S38 The 1H NMR spectra of compound **A10**

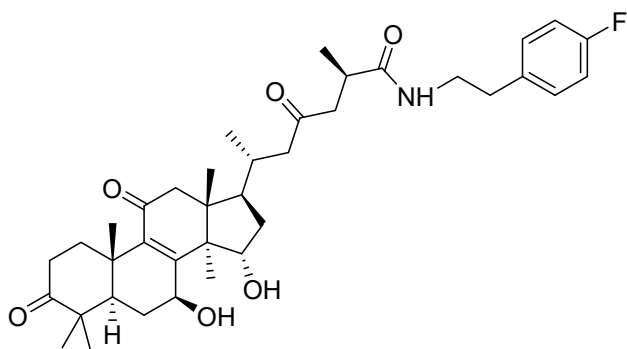


Supplementary Figure. S39 The ¹³C NMR spectra of compound A10

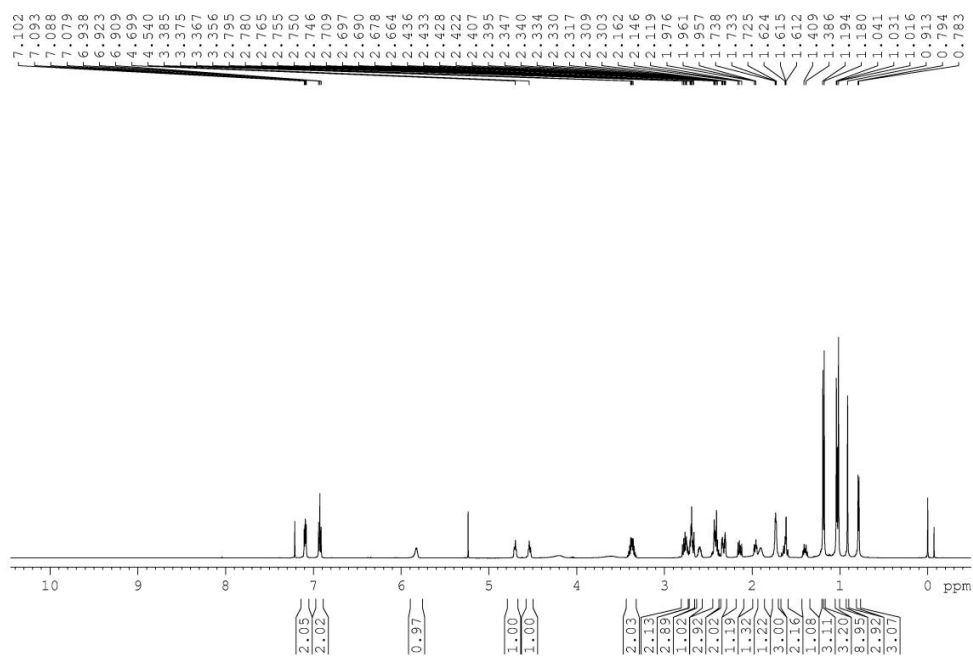
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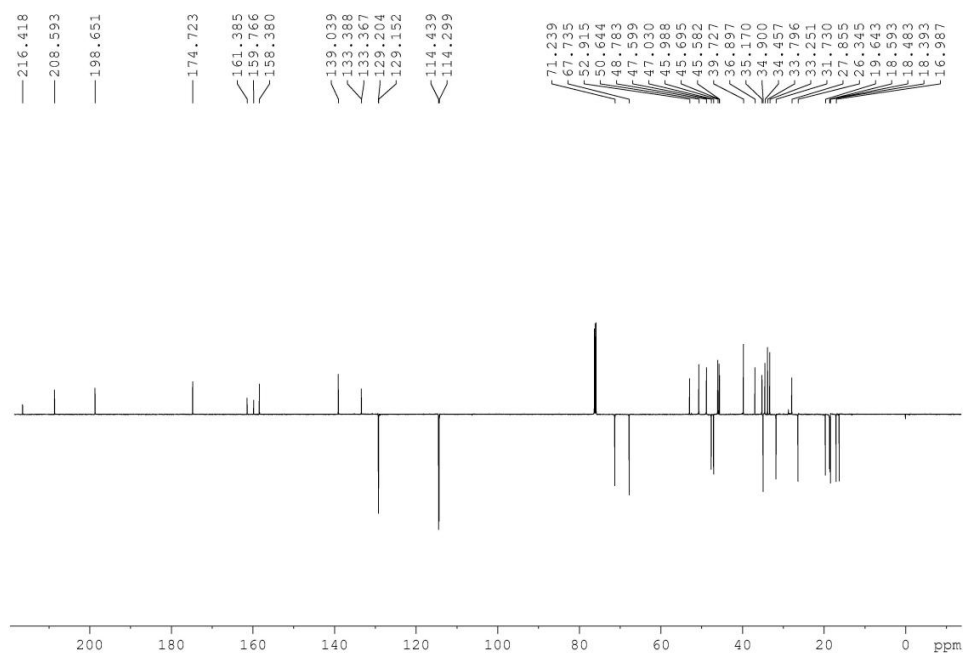
Supplementary Figure. S40 The HRMS spectra of compound A10



Supplementary Figure. S41 The chemical structure of compound **A11**. Chemical formula $C_{38}H_{52}ClNO_6$; molecular weight: 637.83

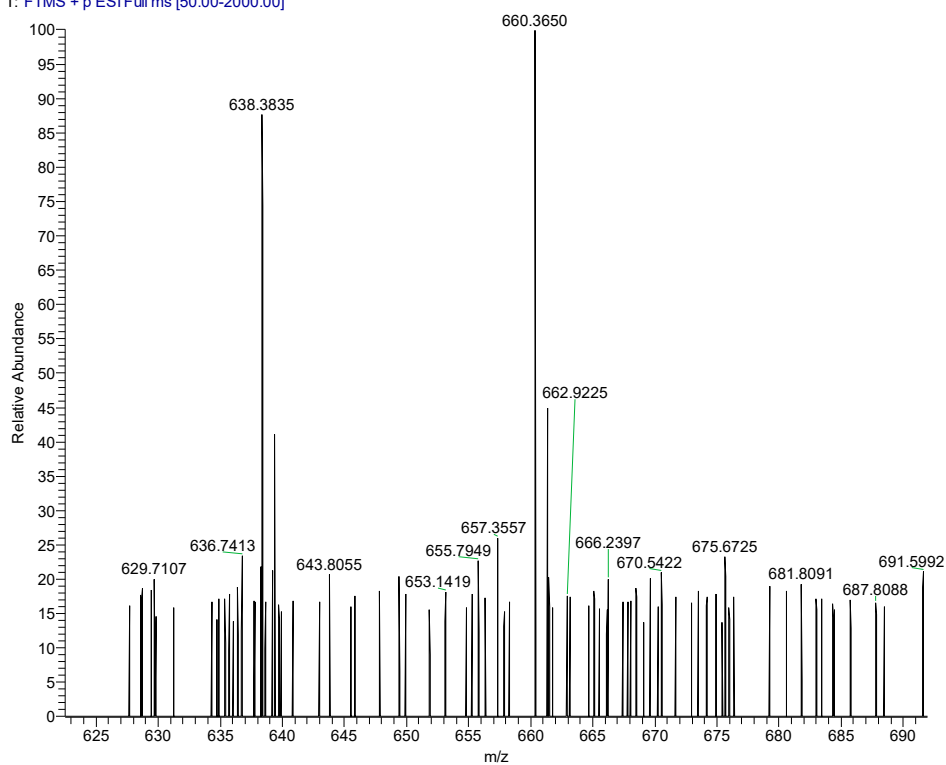


Supplementary Figure. S42 The 1H NMR spectra of compound **A11**

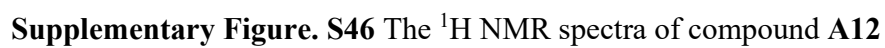
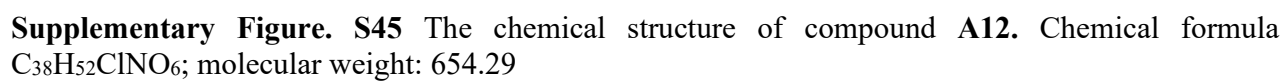


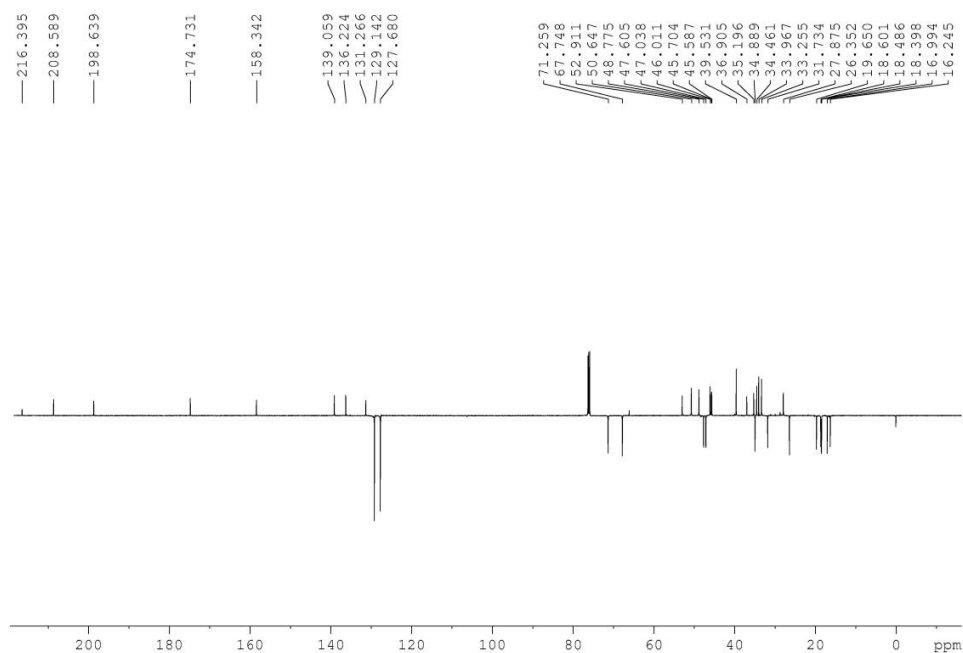
Supplementary Figure. S43 The ¹³C NMR spectra of compound A11

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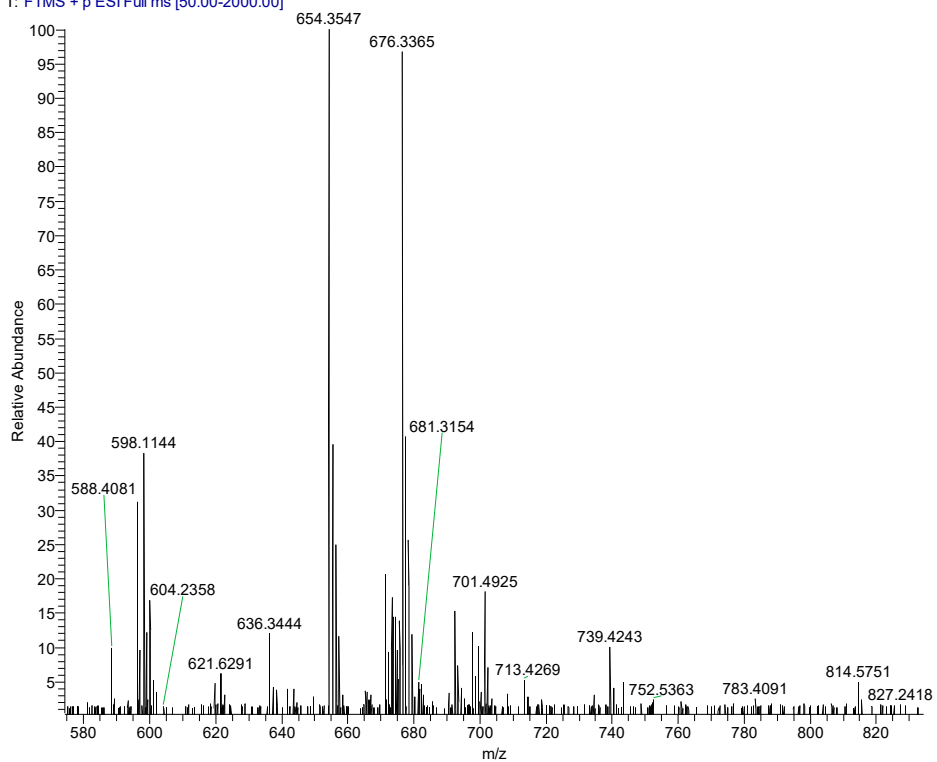
Supplementary Figure. S44 The HRMS spectra of compound A11



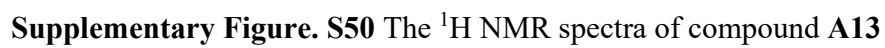
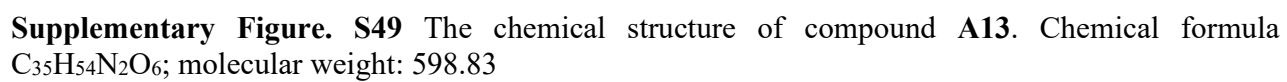


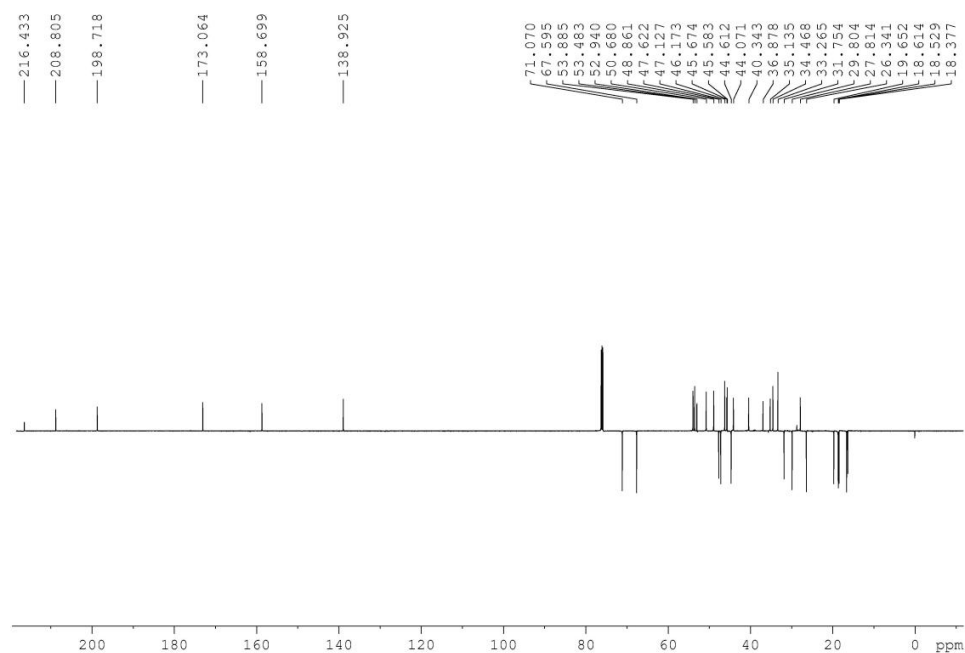
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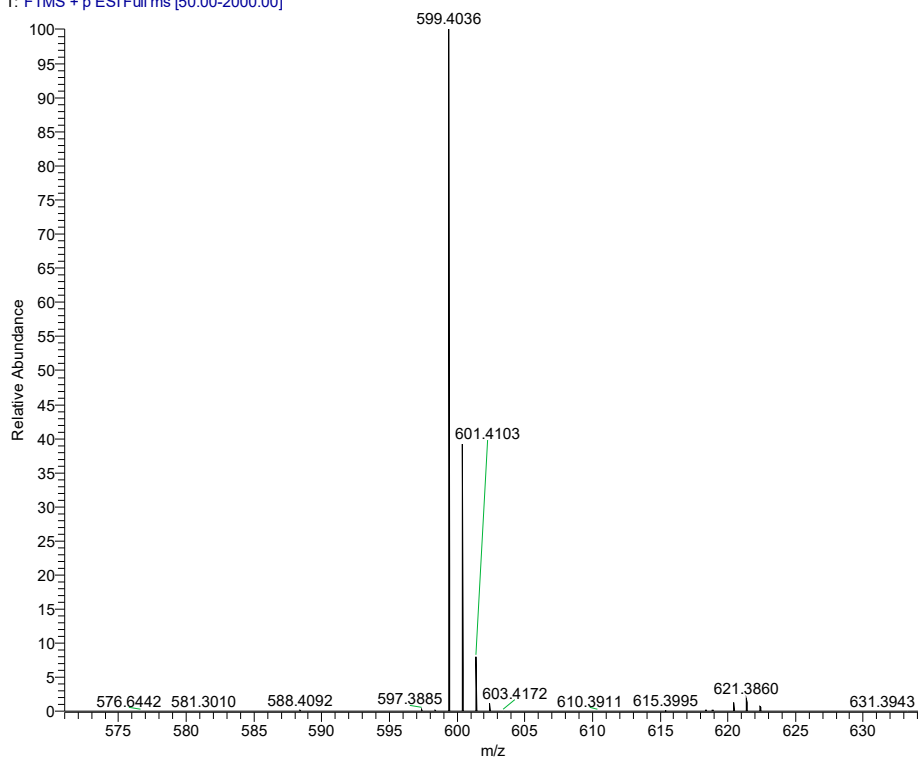
Supplementary Figure. S48 The HRMS spectra of compound A12



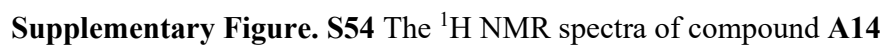
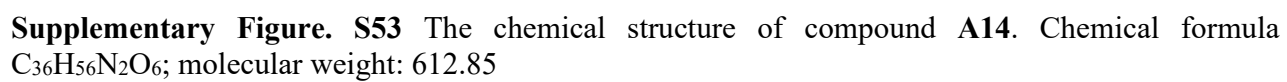


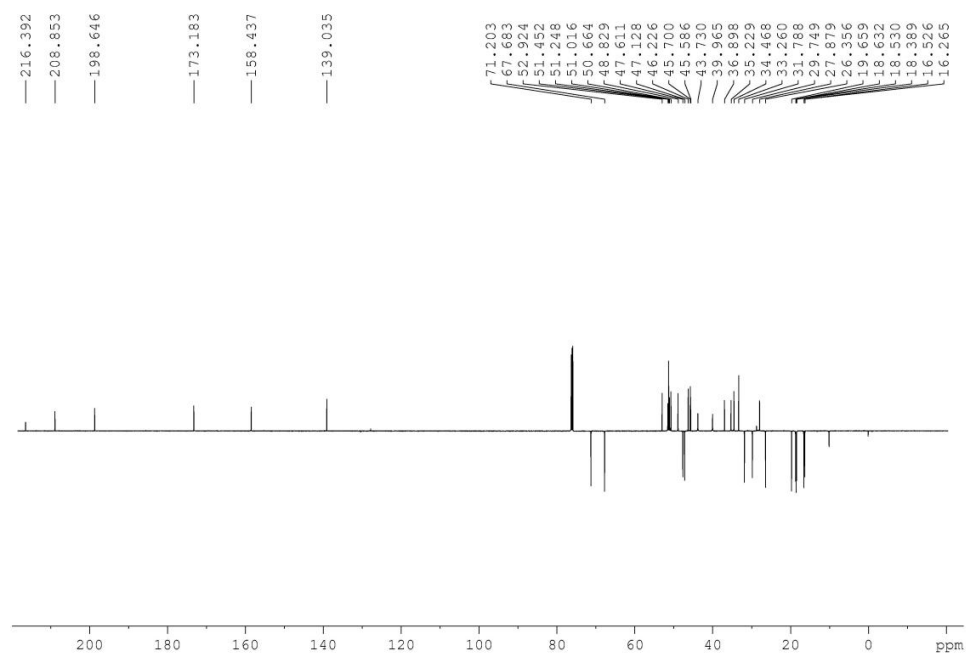
Supplementary Figure. S51 The ¹³C NMR spectra of compound A13

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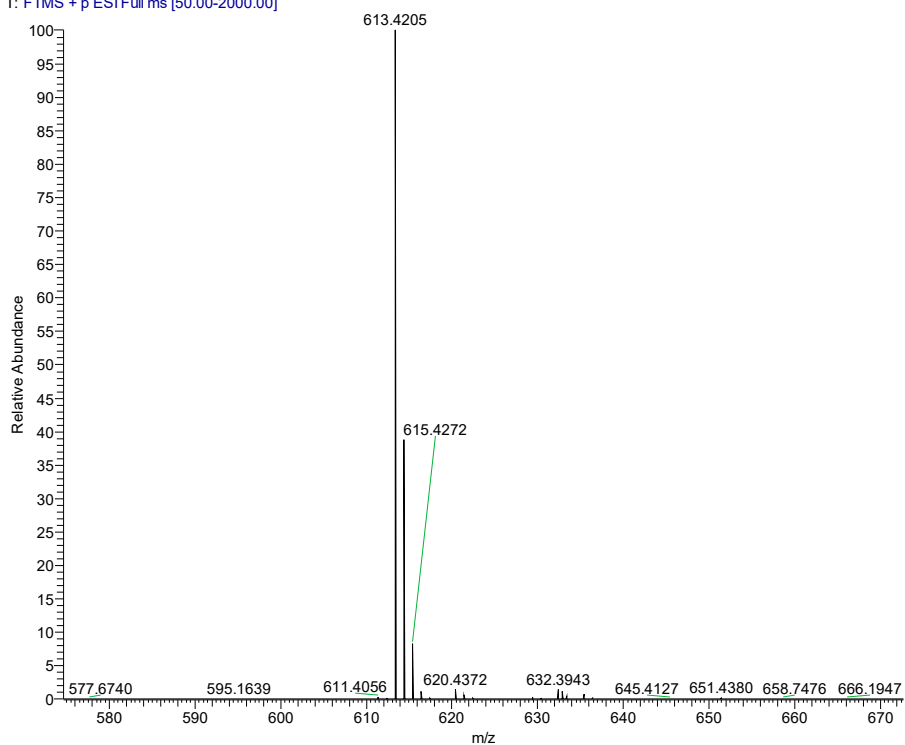
Supplementary Figure. S52 The HRMS spectra of compound A13



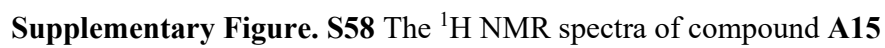
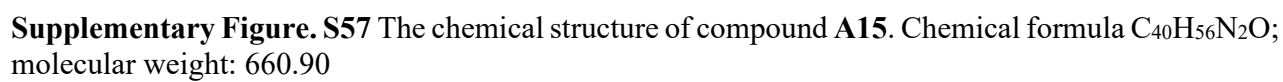


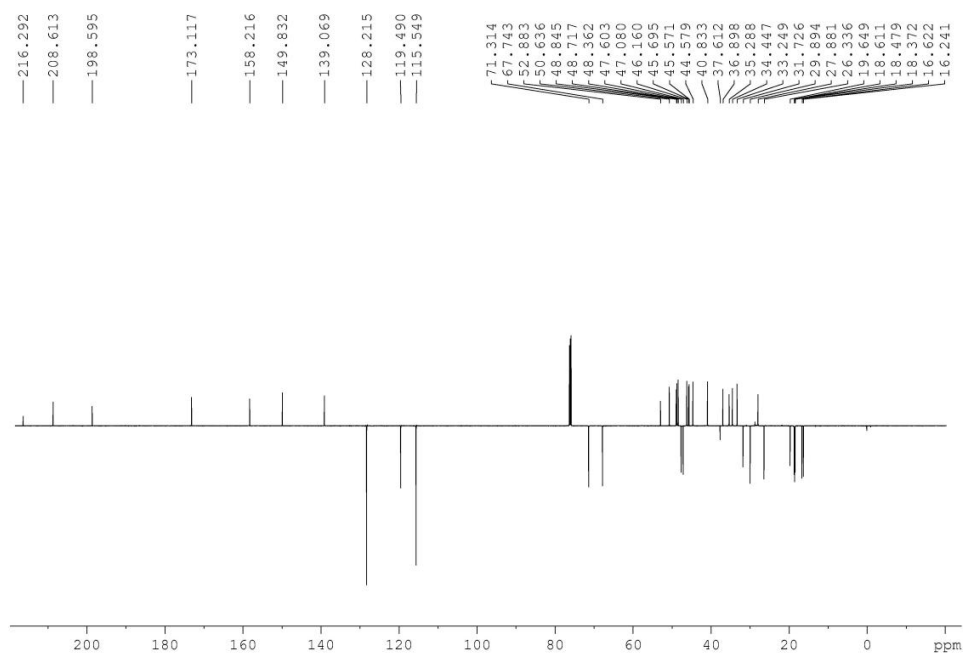
Supplementary Figure. S55 The ¹³C NMR spectra of compound A14

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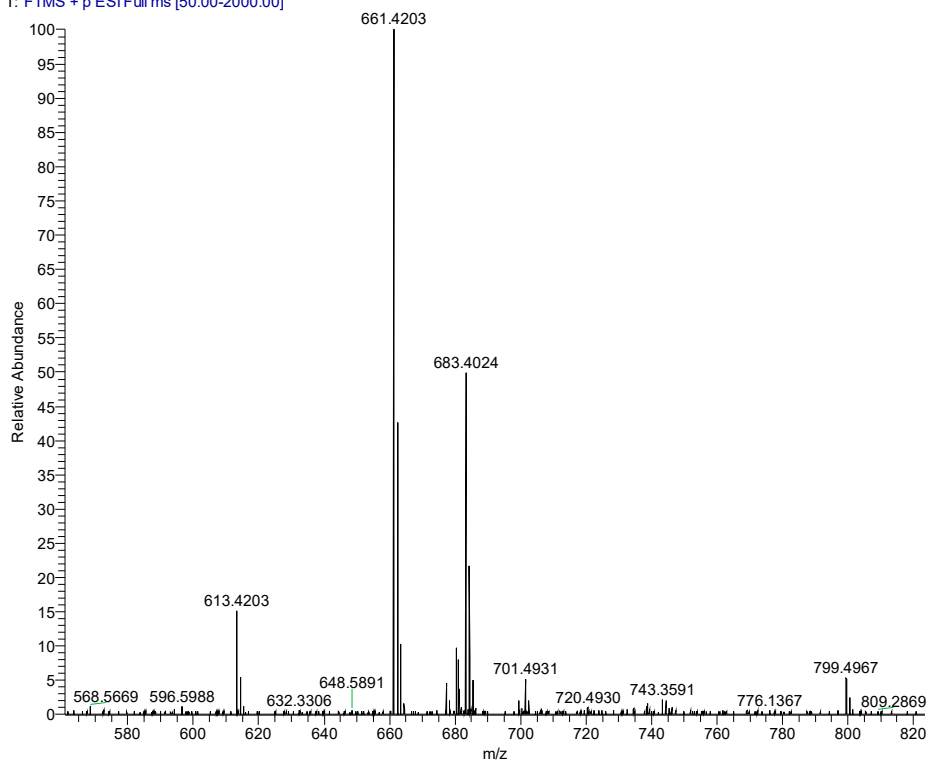
Supplementary Figure. S56 The HRMS spectra of compound A14





Supplementary Figure. S59 The ¹³C NMR spectra of compound A15

GAA-19_221028154551 #1 RT: 0.00 AV: 1 NL: 9.45E6
T: FTMS + p ESI Full ms [50.00-2000.00]



Supplementary Figure. S60 The HRMS spectra of compound A15