

## Supplementary information

# Semi-Synthesis of Small Molecules of Aminocarbazoles: Tumor Growth Inhibition and Potential Impact on p53

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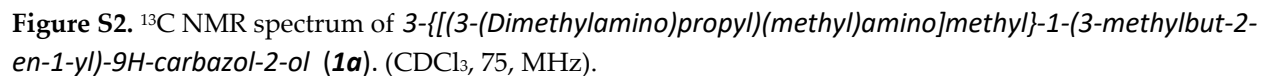
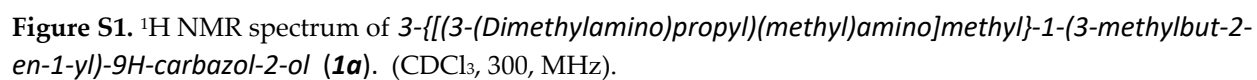
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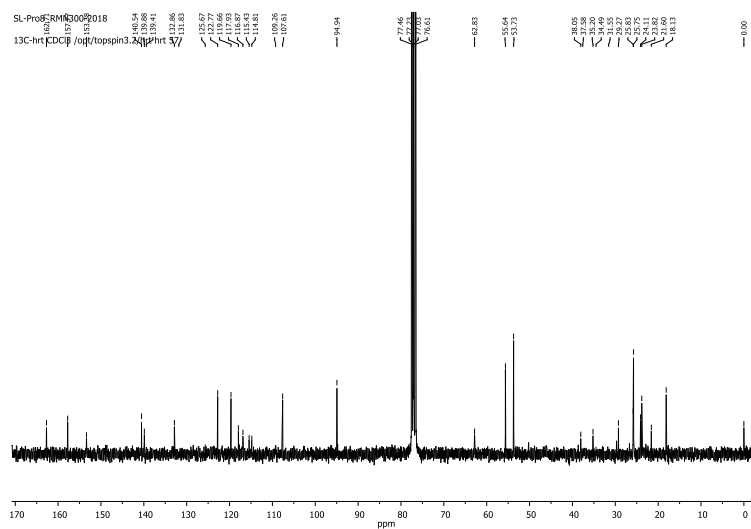
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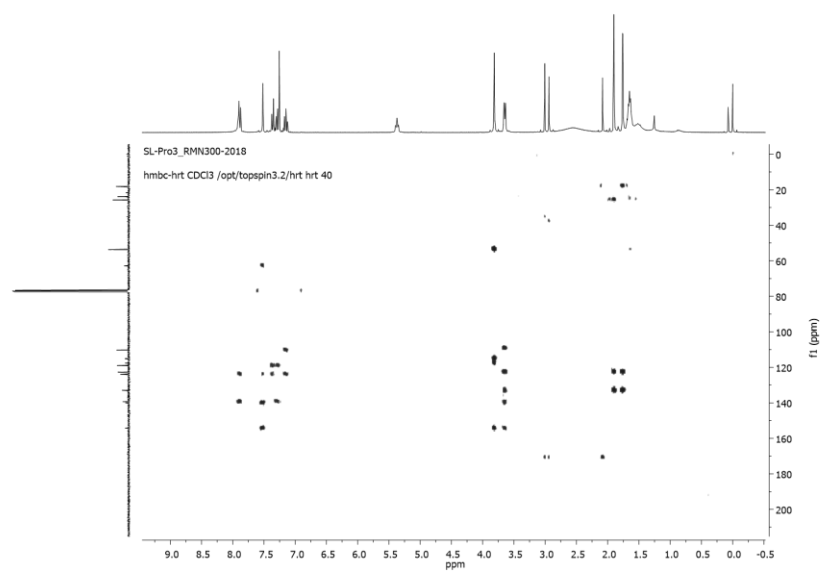
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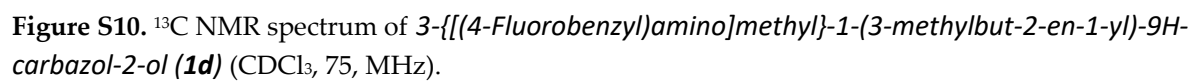
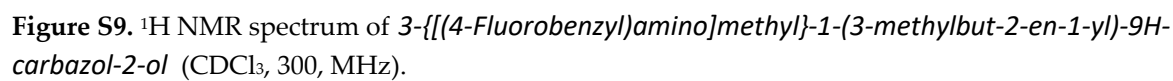


**Figure S5.**  $^{13}\text{C}$  NMR spectrum of 1-(3-Methylbut-2-en-1-yl)-3-(piperidin-1-ylmethyl)-9H-carbazol-2-ol (**1b**) ( $\text{CDCl}_3$ , 75, MHz).



**Figure S6.** HMBC spectrum of 1-(3-Methylbut-2-en-1-yl)-3-(piperidin-1-ylmethyl)-9H-carbazol-2-ol (**1b**) ( $\text{CDCl}_3$ , 300 MHz).

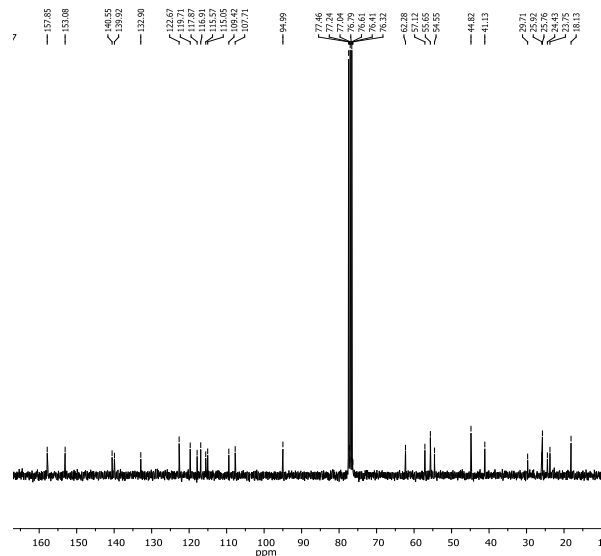




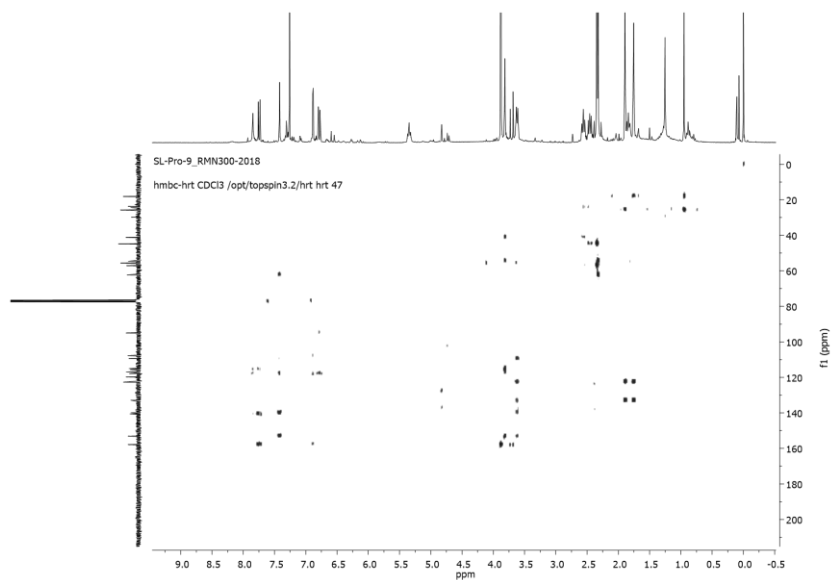




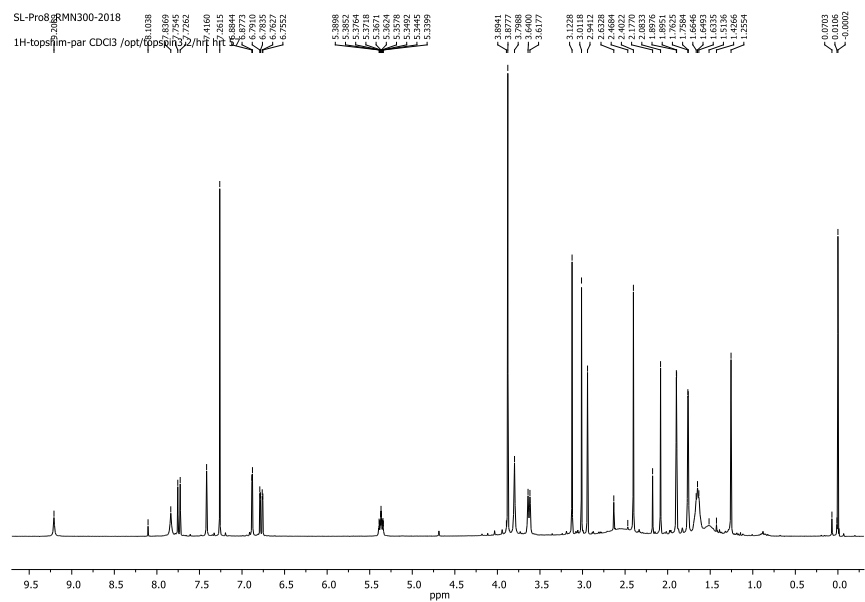




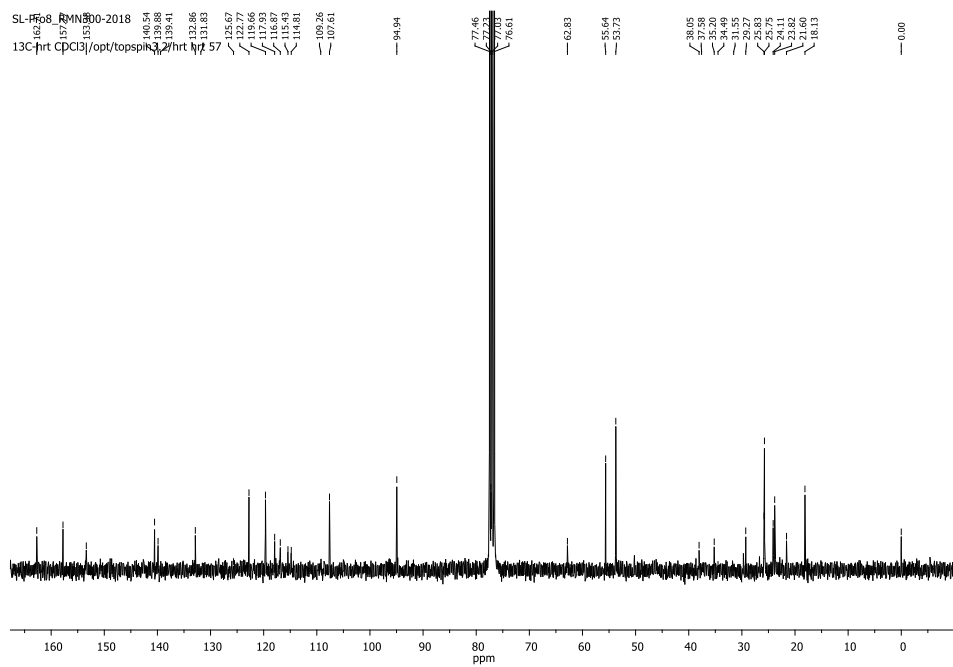
**Figure S15:**  $^{13}\text{C}$  NMR spectrum of 3-[[[3-(Dimethylamino)propyl](methyl)amino]methyl]-7-methoxy-1-(3-methylbut-2-en-1-yl)-9H-carbazol-2-ol (**2a**) ( $\text{CDCl}_3$ , 75, MHz).



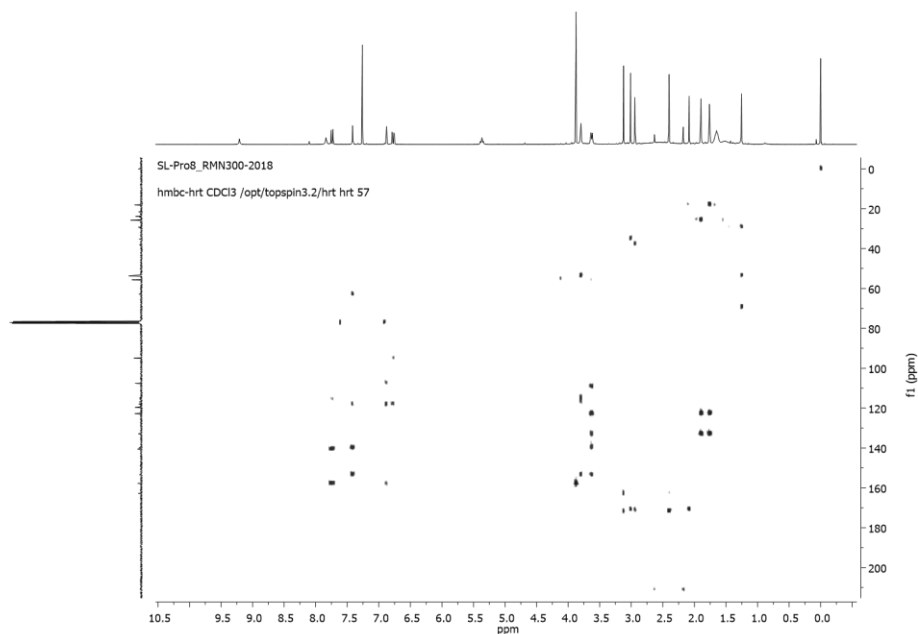
**Figure S16:** HRMS spectrum of 3-[[[3-(Dimethylamino)propyl](methyl)amino]methyl]-7-methoxy-1-(3-methylbut-2-en-1-yl)-9H-carbazol-2-ol (**2a**) ( $\text{CDCl}_3$ , 300, MHz).



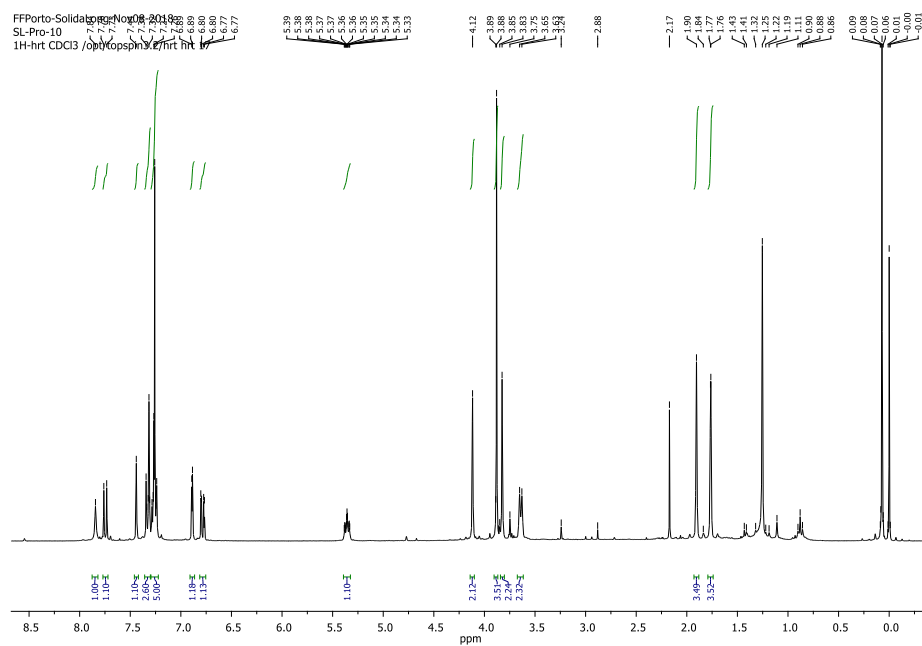
**Figure S17:**  $^1\text{H}$  NMR spectrum of 7-Methoxy-1-(3-methylbut-2-en-1-yl)-3-(piperidin-1-ylmethyl)-9H-carbazol-2-ol (**2b**). ( $\text{CDCl}_3$ , 300, MHz).



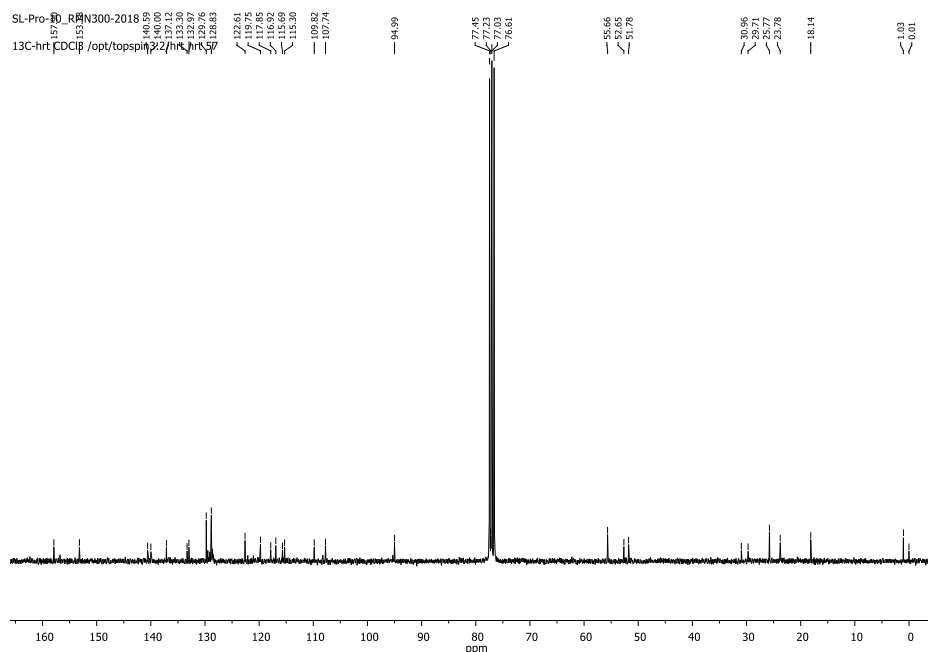
**Figure S18:**  $^{13}\text{C}$  NMR spectrum of 7-Methoxy-1-(3-methylbut-2-en-1-yl)-3-(piperidin-1-ylmethyl)-9H-carbazol-2-ol (**2b**). ( $\text{CDCl}_3$ , 75, MHz).



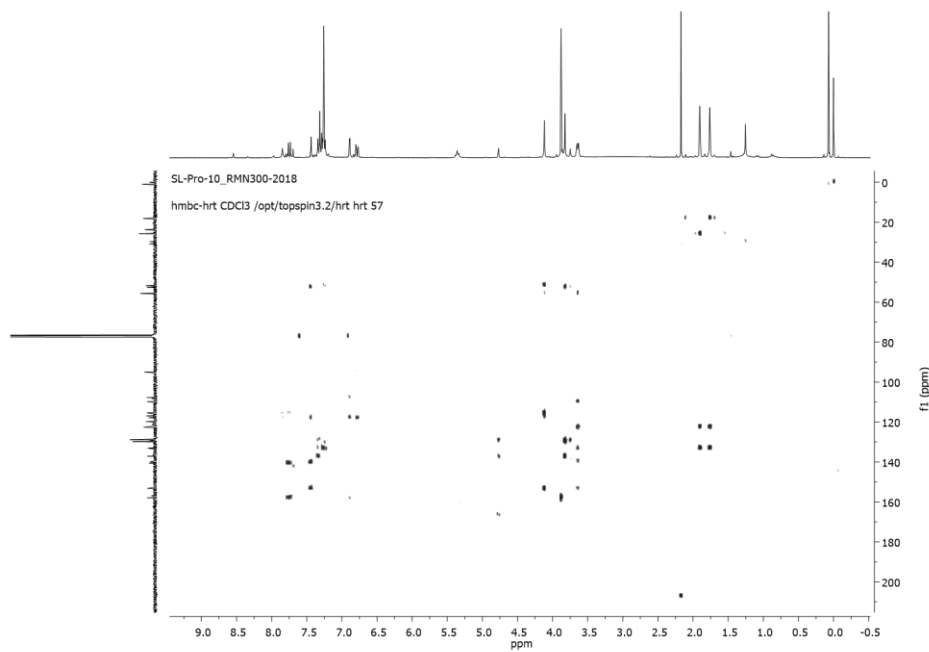
**Figure S19:** HMBC spectrum of 7-Methoxy-1-(3-methylbut-2-en-1-yl)-3-(piperidin-1-ylmethyl)-9H-carbazol-2-ol (**2b**). (CDCl<sub>3</sub>, 300, MHz).



**Figure S20:** <sup>1</sup>H NMR spectrum of 3-[(4-Chlorobenzyl)amino]methyl}-7-methoxy-1-(3-methylbut-2-en-1-yl)-9H-carbazol-2-ol (**2c**). (CDCl<sub>3</sub>, 300, MHz).

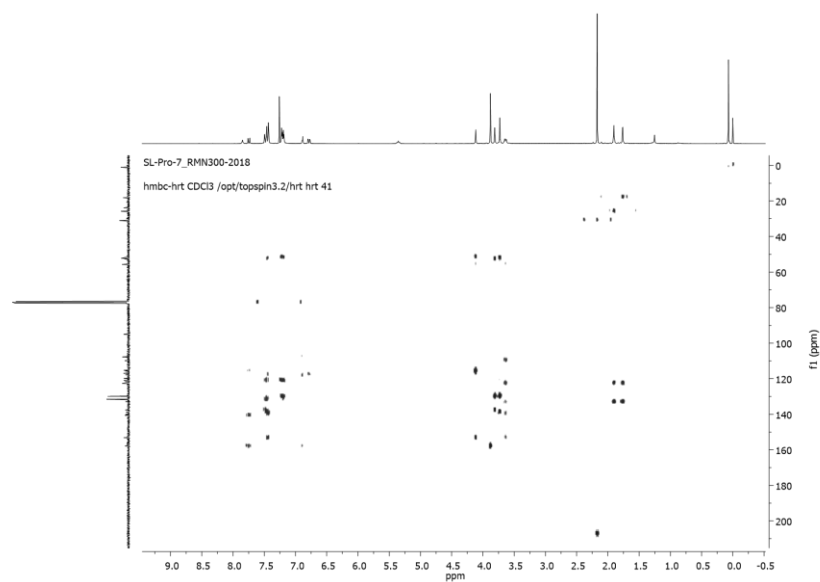


**Figure S21:**  $^{13}\text{C}$  NMR spectrum of 3-[[[4-Chlorobenzyl)amino]methyl]-7-methoxy-1-(3-methylbut-2-en-1-yl)-9H-carbazol-2-ol (**2c**) ( $\text{CDCl}_3$ , 75, MHz).

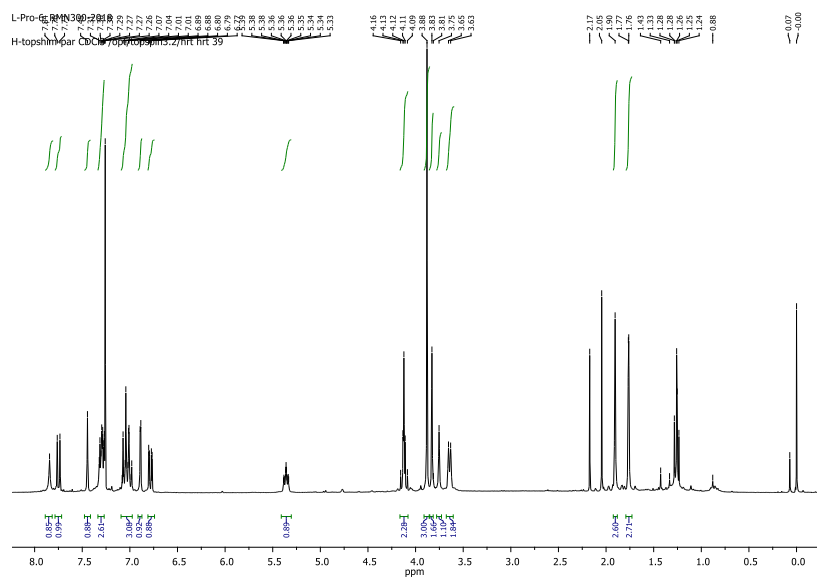


**Figure S22:** HMBC spectrum of 3-[[[4-Chlorobenzyl)amino]methyl]-7-methoxy-1-(3-methylbut-2-en-1-yl)-9H-carbazol-2-ol (**2c**) ( $\text{CDCl}_3$ , 300, MHz).

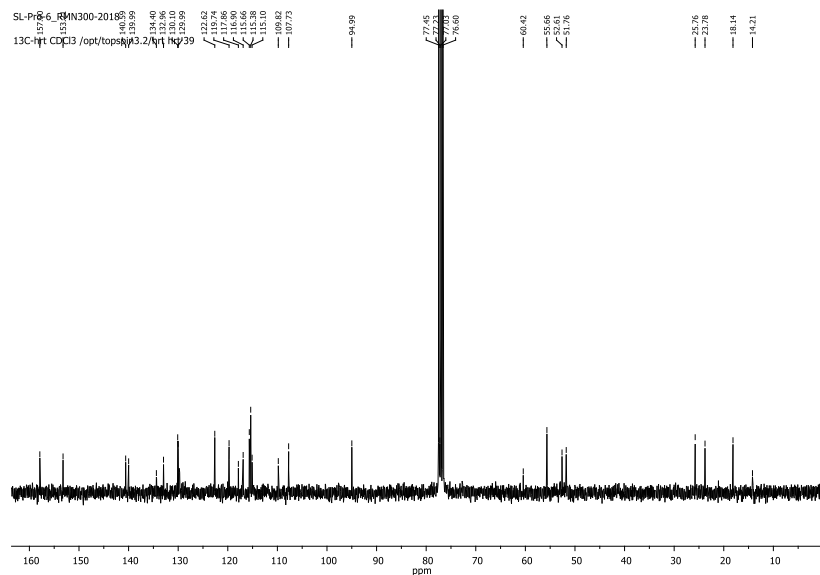




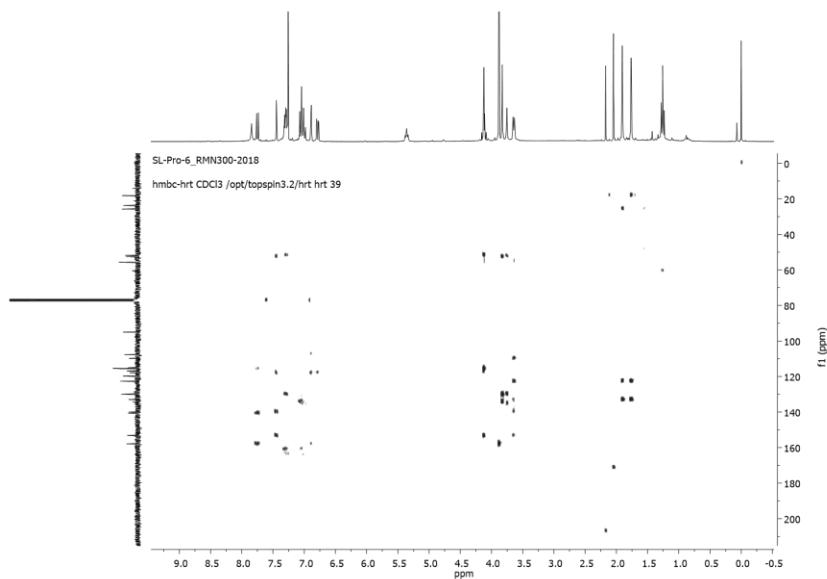
**Figure S25:** HMBC spectrum of 3-[[*(4-Fluorobenzyl)amino*]methyl]-7-methoxy-1-(3-methylbut-2-en-1-yl)-9*H*-carbazol-2-ol (**2d**) (CDCl<sub>3</sub>, 300, MHz).



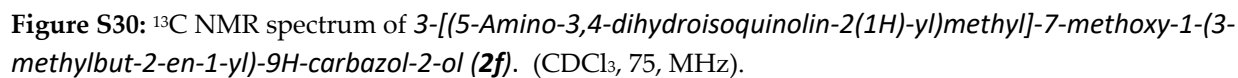
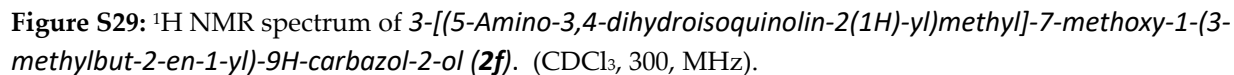
**Figure S26:** <sup>1</sup>H NMR spectrum 3-[[*(4-Bromobenzyl)amino*]methyl]-7-methoxy-1-(3-methylbut-2-en-1-yl)-9*H*-carbazol-2-ol (**2e**) (CDCl<sub>3</sub>, 300, MHz).



**Figure S27:**  $^{13}\text{C}$  NMR spectrum of 3-[[*(4-Bromobenzyl)amino*]methyl]-7-methoxy-1-(3-methylbut-2-en-1-yl)-9*H*-carbazol-2-ol (**2e**) ( $\text{CDCl}_3$ , 75, MHz).

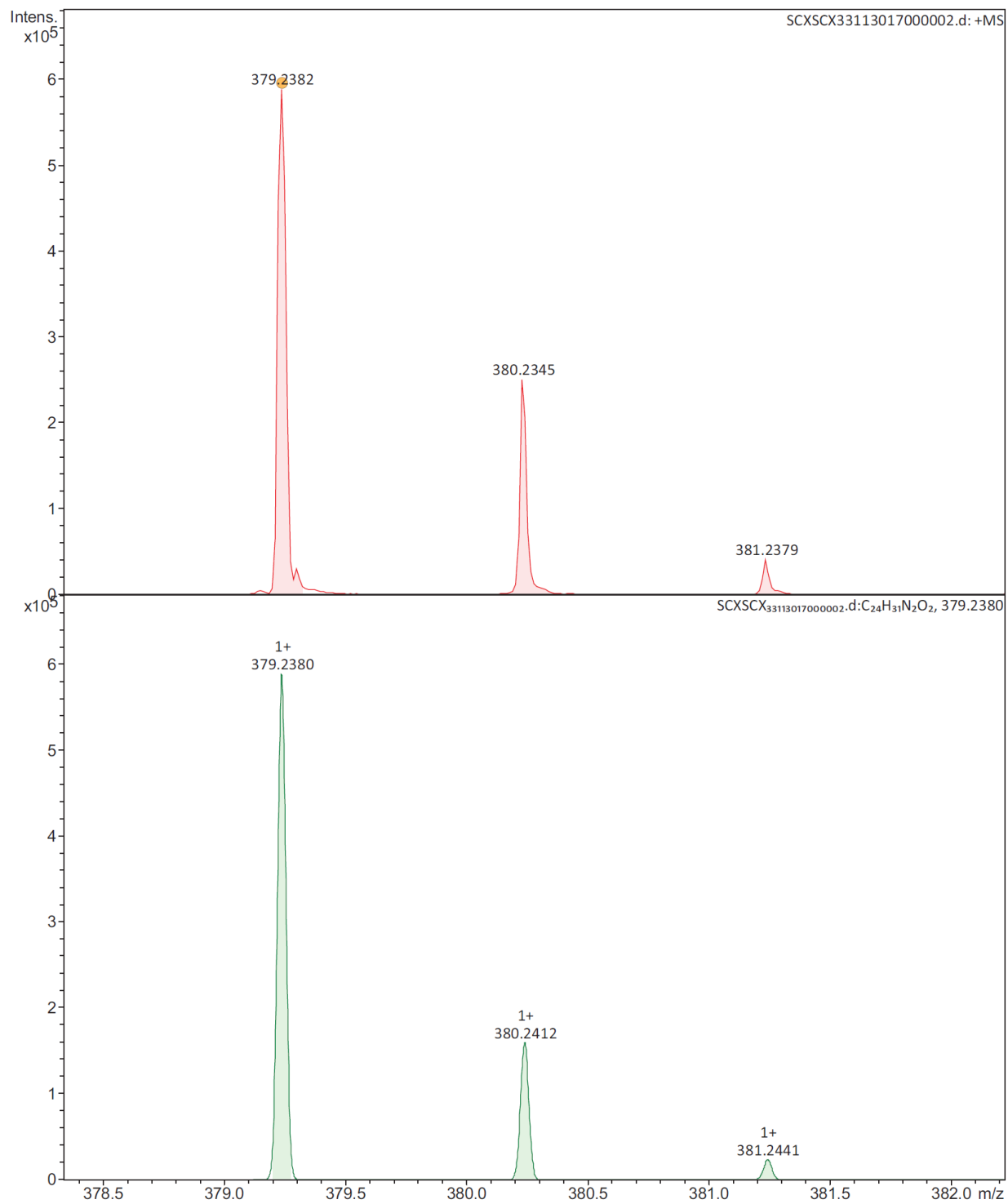


**Figure S28:**  $^{13}\text{C}$  NMR spectrum of 3-[[*(4-Bromobenzyl)amino*]methyl]-7-methoxy-1-(3-methylbut-2-en-1-yl)-9*H*-carbazol-2-ol (**2e**) ( $\text{CDCl}_3$ , 300, MHz).

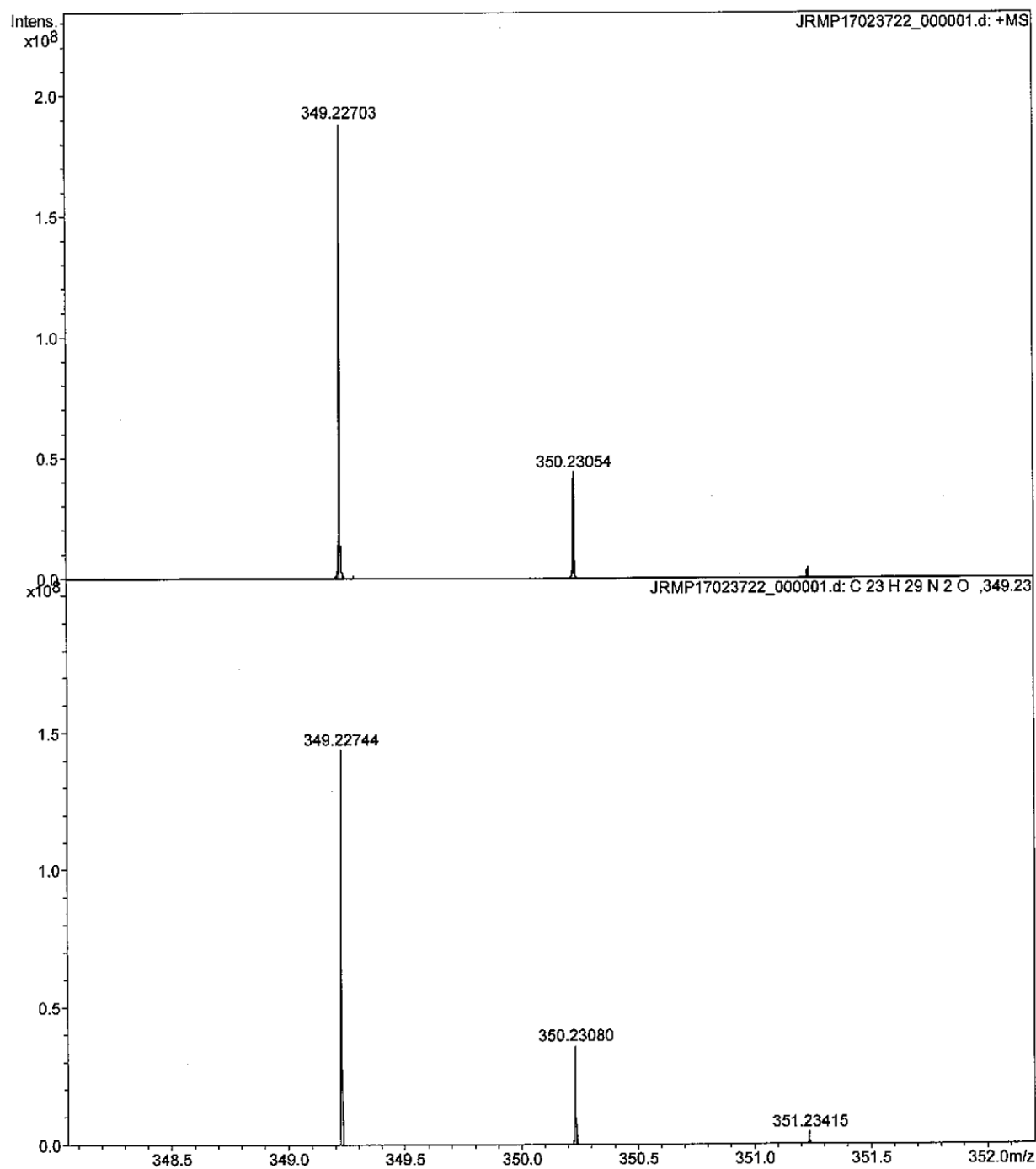




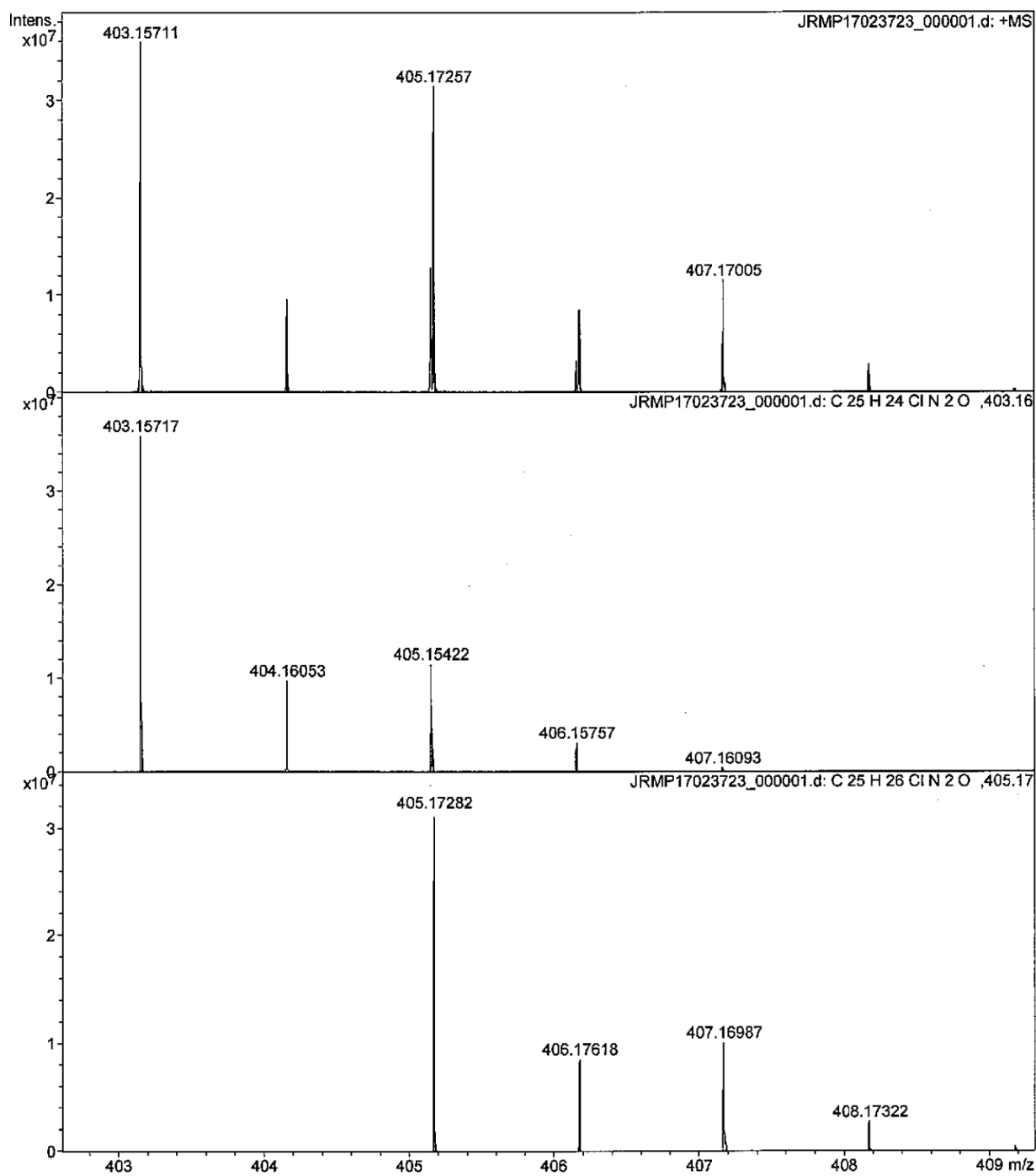




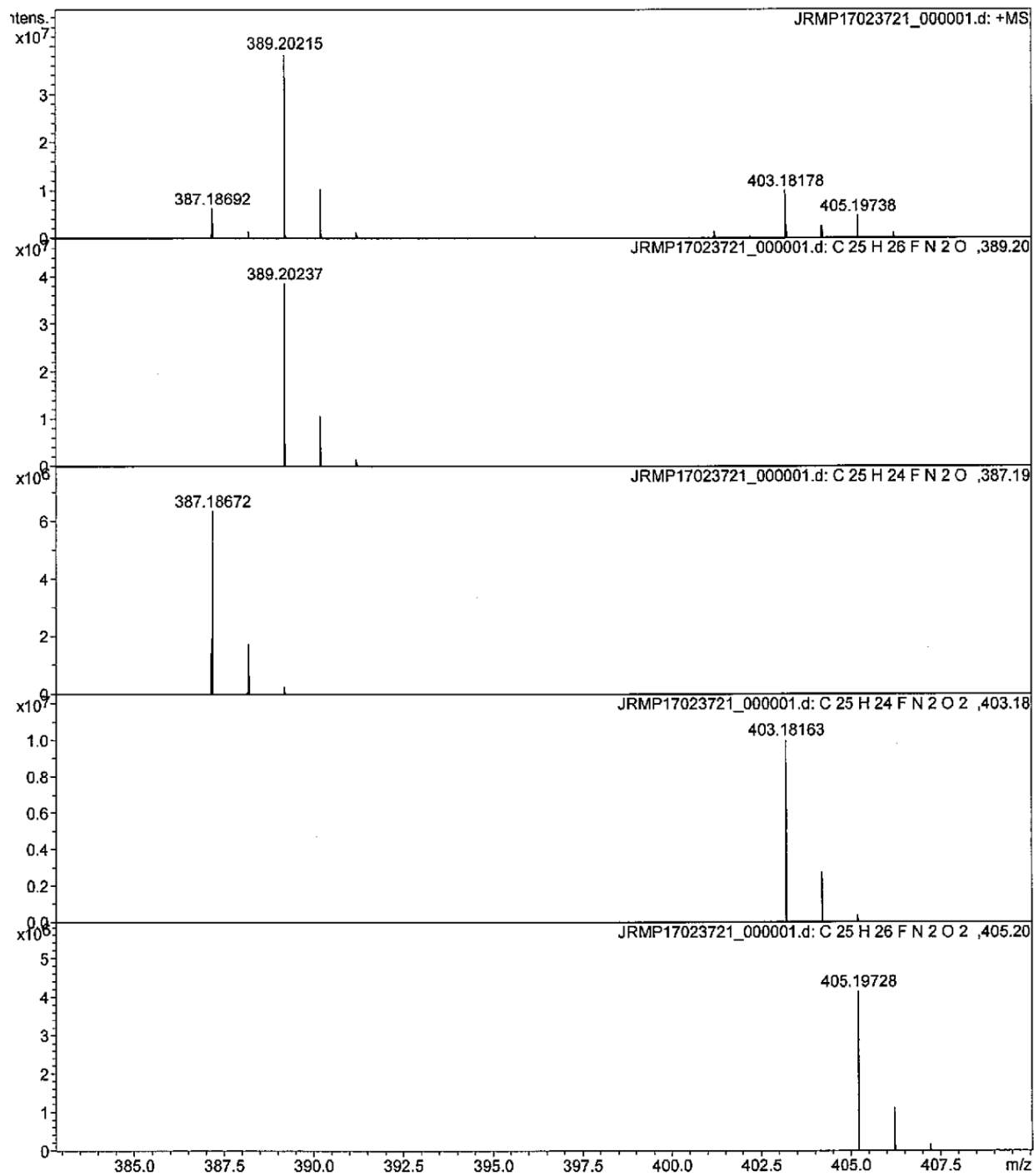
**Figure S33:** HRMS of compound 3- $\{[(3-(\text{Dimethylamino})\text{propyl})(\text{methyl})\text{amino}]\text{methyl}\}$ -1-(3-methylbut-2-en-1-yl)-9H-carbazol-2-ol (**1a**), (20, 300 V).



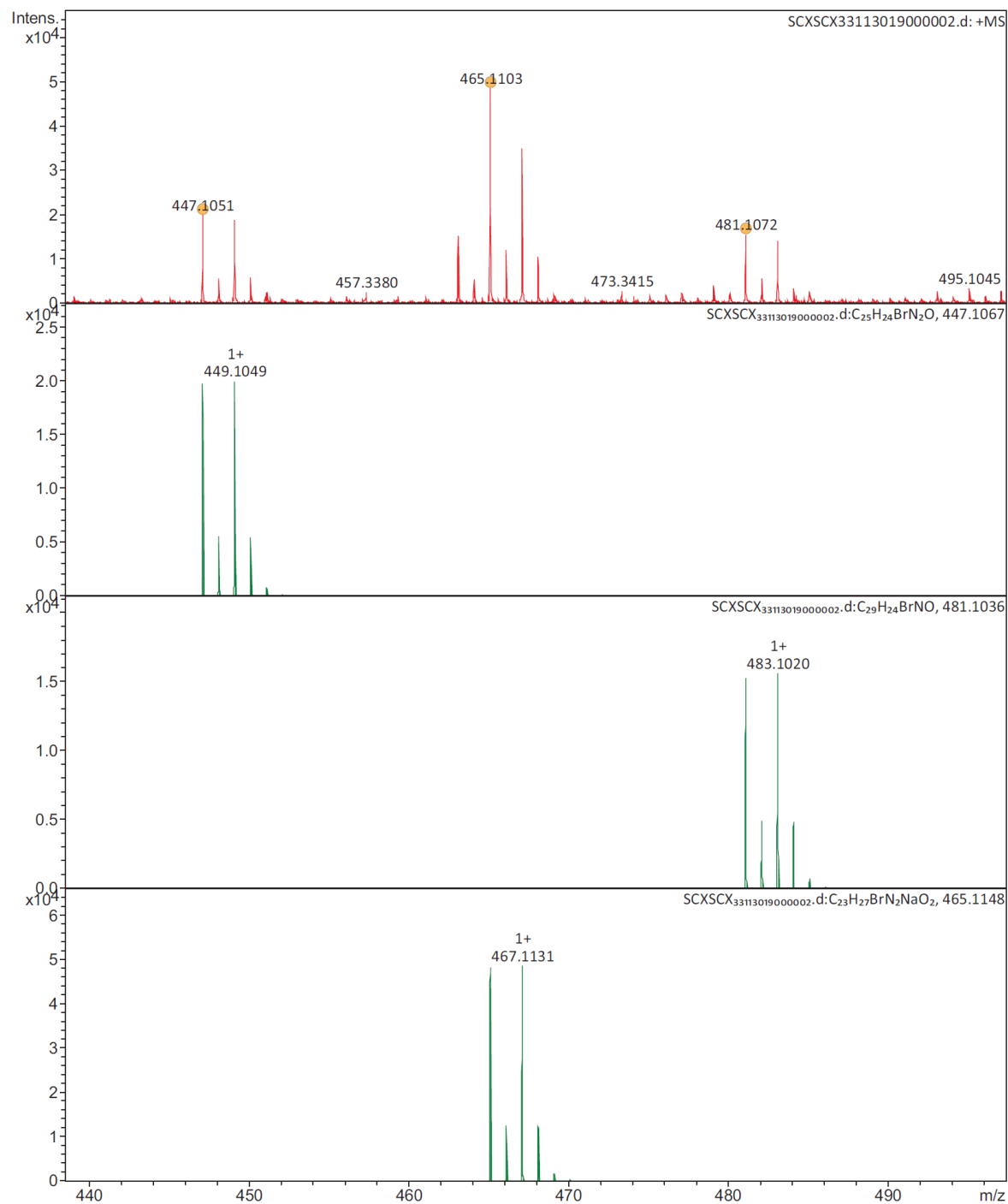
**Figure S34:** HRMS of compound *1-(3-Methylbut-2-en-1-yl)-3-(piperidin-1-ylmethyl)-9H-carbazol-2-ol* (**1b**), (20, 300 V).



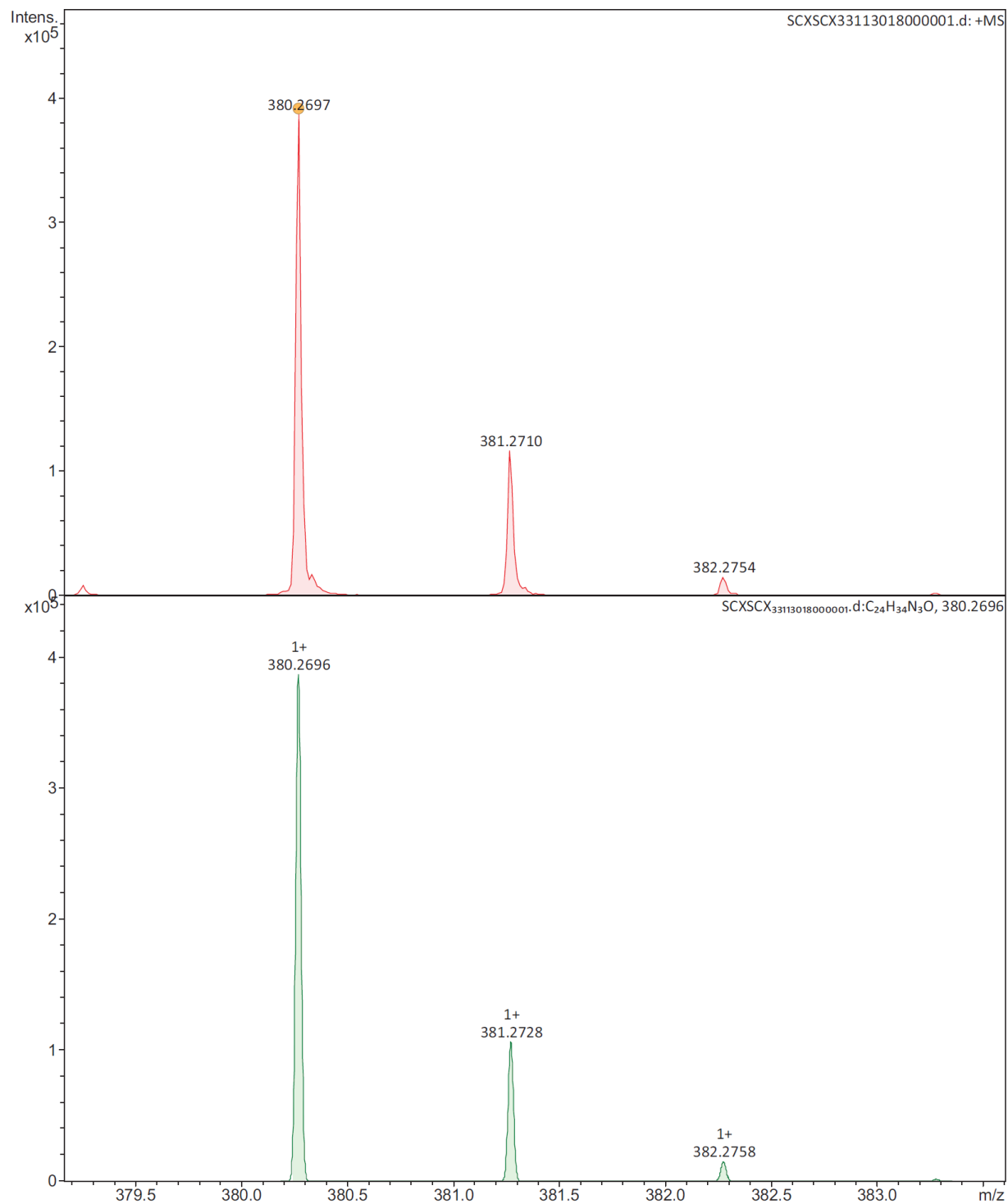
**Figure S35:** HRMS of compound of compound 3-[[*(4-Chlorobenzyl)amino*]methyl]-1-(3-methylbut-2-en-1-yl)-9*H*-carbazol-2-ol (**1c**), (20, 300 V).



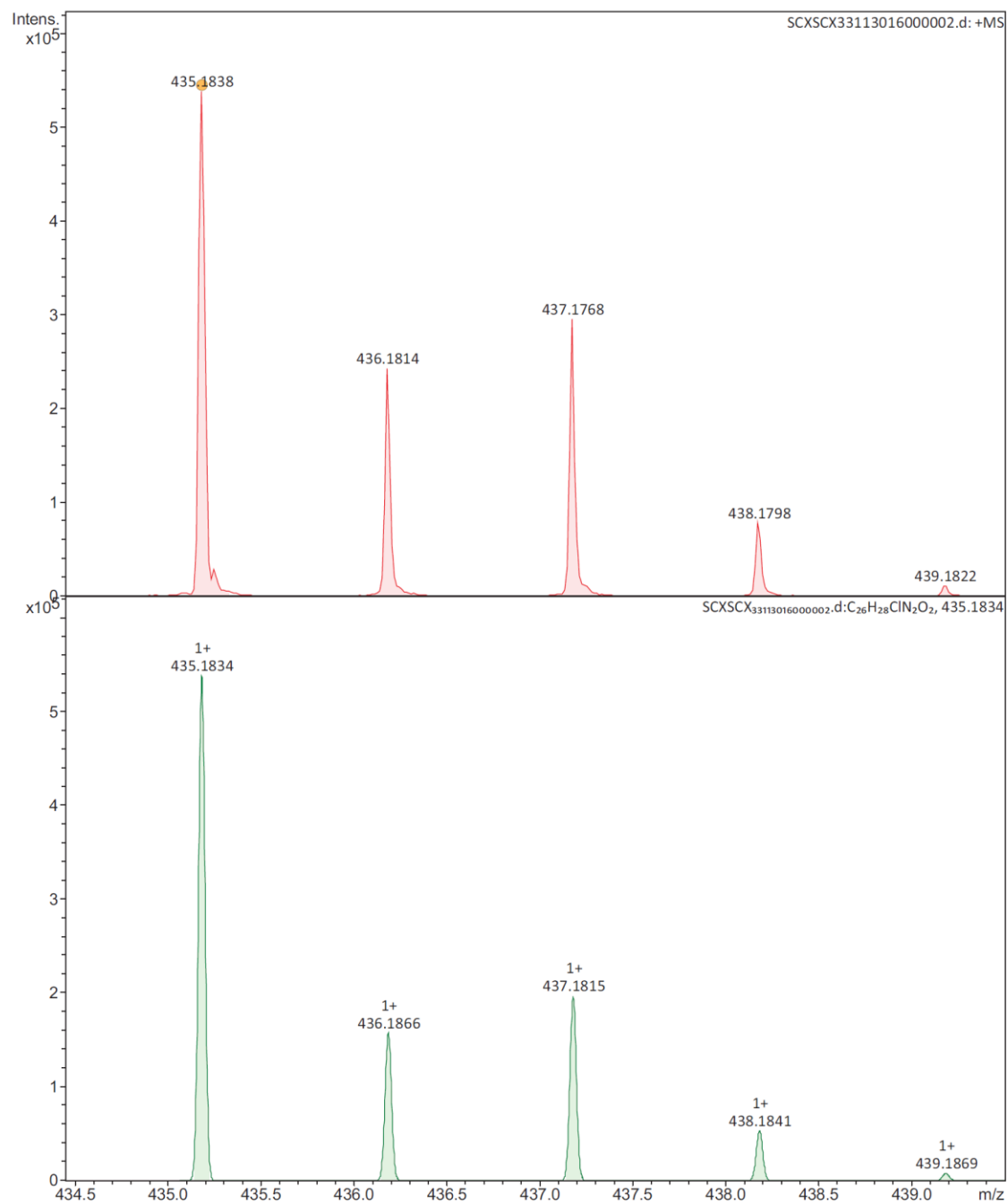
**Figure S36:** HRMS of compound 3- $\{[(4\text{-Fluorobenzyl})\text{amino}]\text{methyl}\}$ -1-(3-methylbut-2-en-1-yl)-9H-carbazol-2-ol (**1d**) (20, 300 V).



**Figure S37:** HRMS of compound 3- $\{[(4\text{-Bromobenzyl})\text{amino}]\text{methyl}\}$ -1-(3-methylbut-2-en-1-yl)-9H-carbazol-2-ol (**1e**). (20, 300 V).

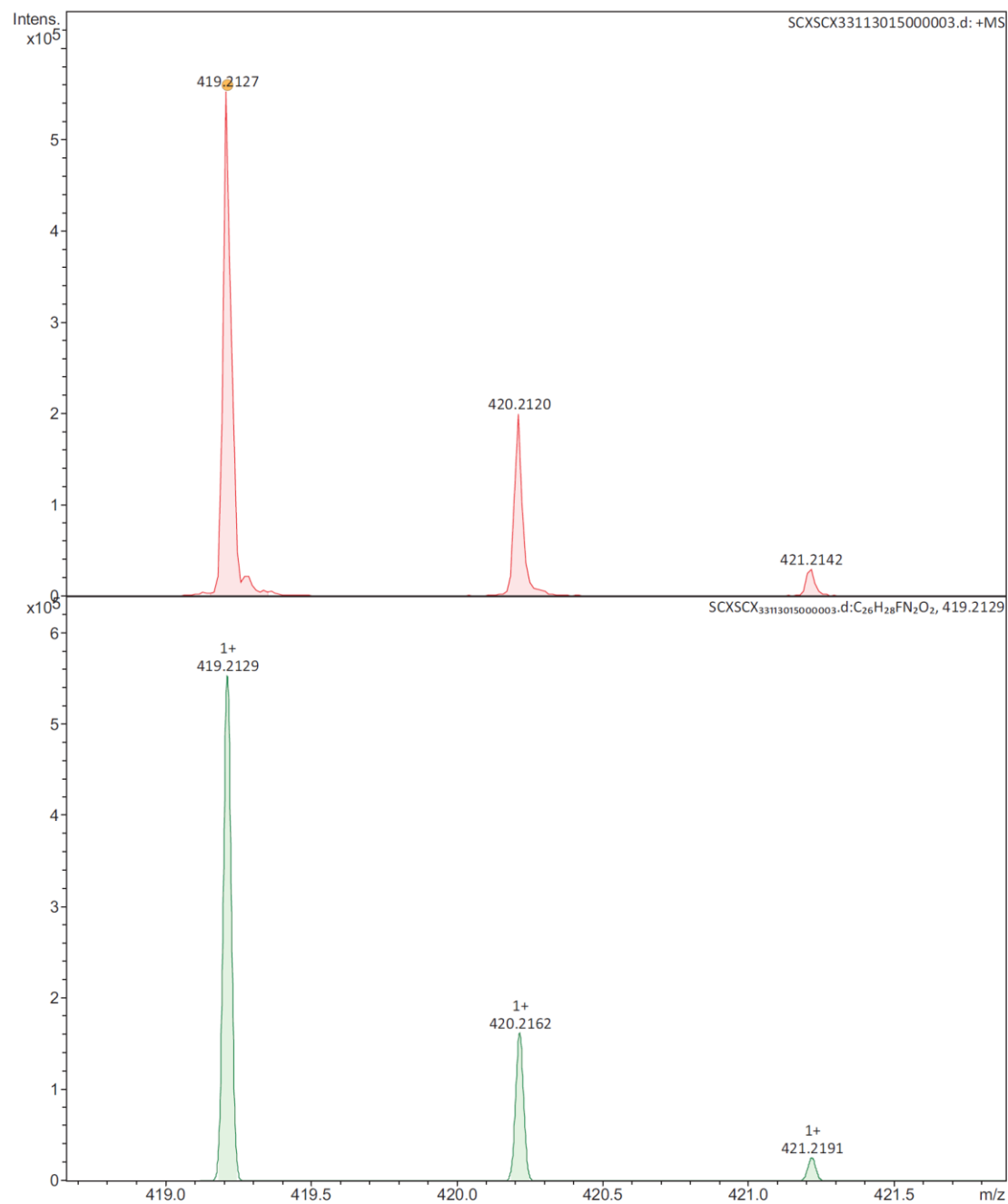


**Figure S38:** HRMS of compound 3- $\{[(3-(\text{Dimethylamino})\text{propyl})(\text{methyl})\text{amino}]\text{methyl}\}$ -7-methoxy-1-(3-methylbut-2-en-1-yl)-9H-carbazol-2-ol (**2a**), (20, 300 V).

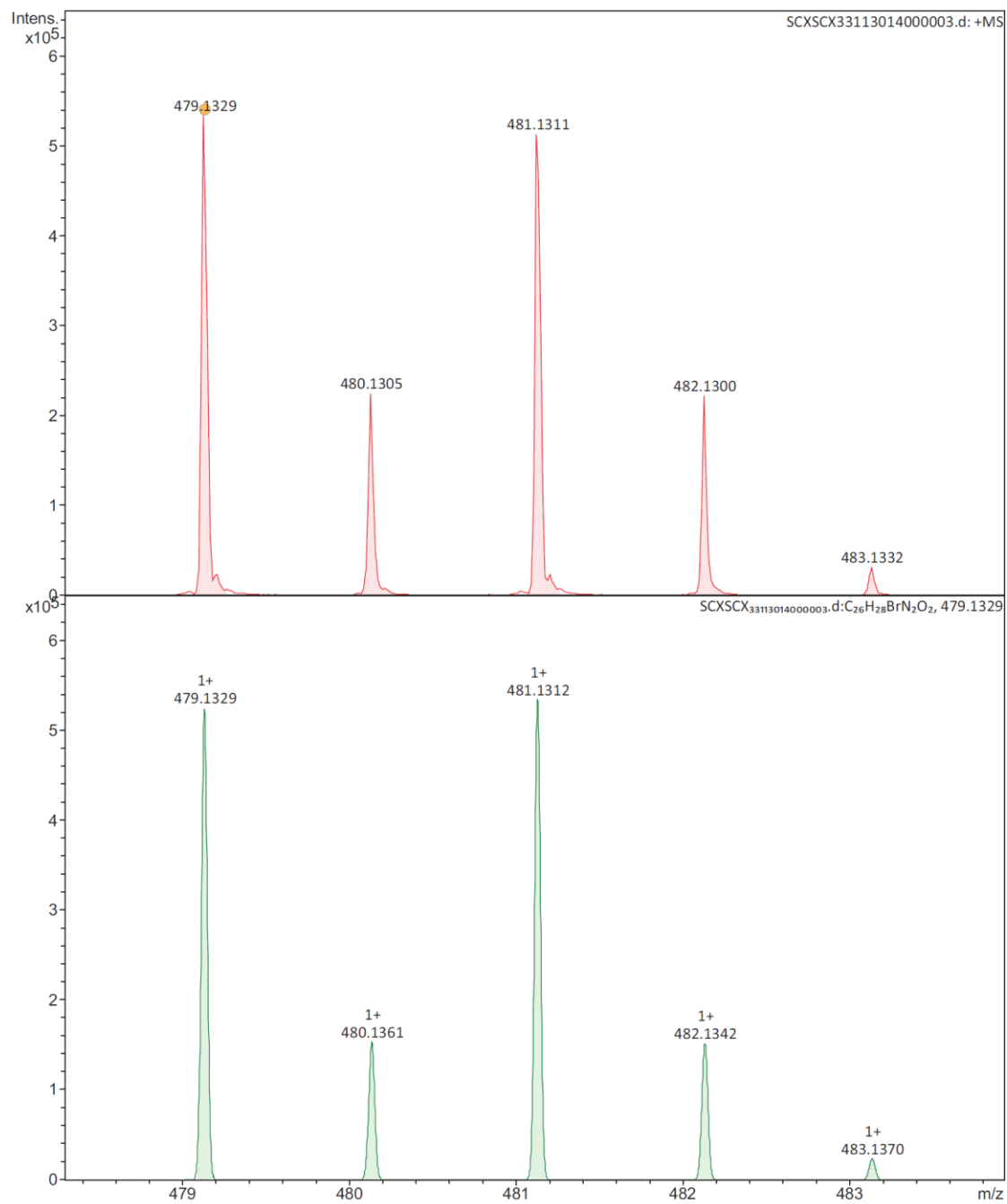


**Figure S39:** HRMS of compound 3- $\{[(4\text{-Chlorobenzyl})\text{amino}]\text{methyl}\}$ -7-methoxy-1-(3-methylbut-2-en-1-yl)-9H-carbazol-2-ol (**2c**), (20, 300 V).

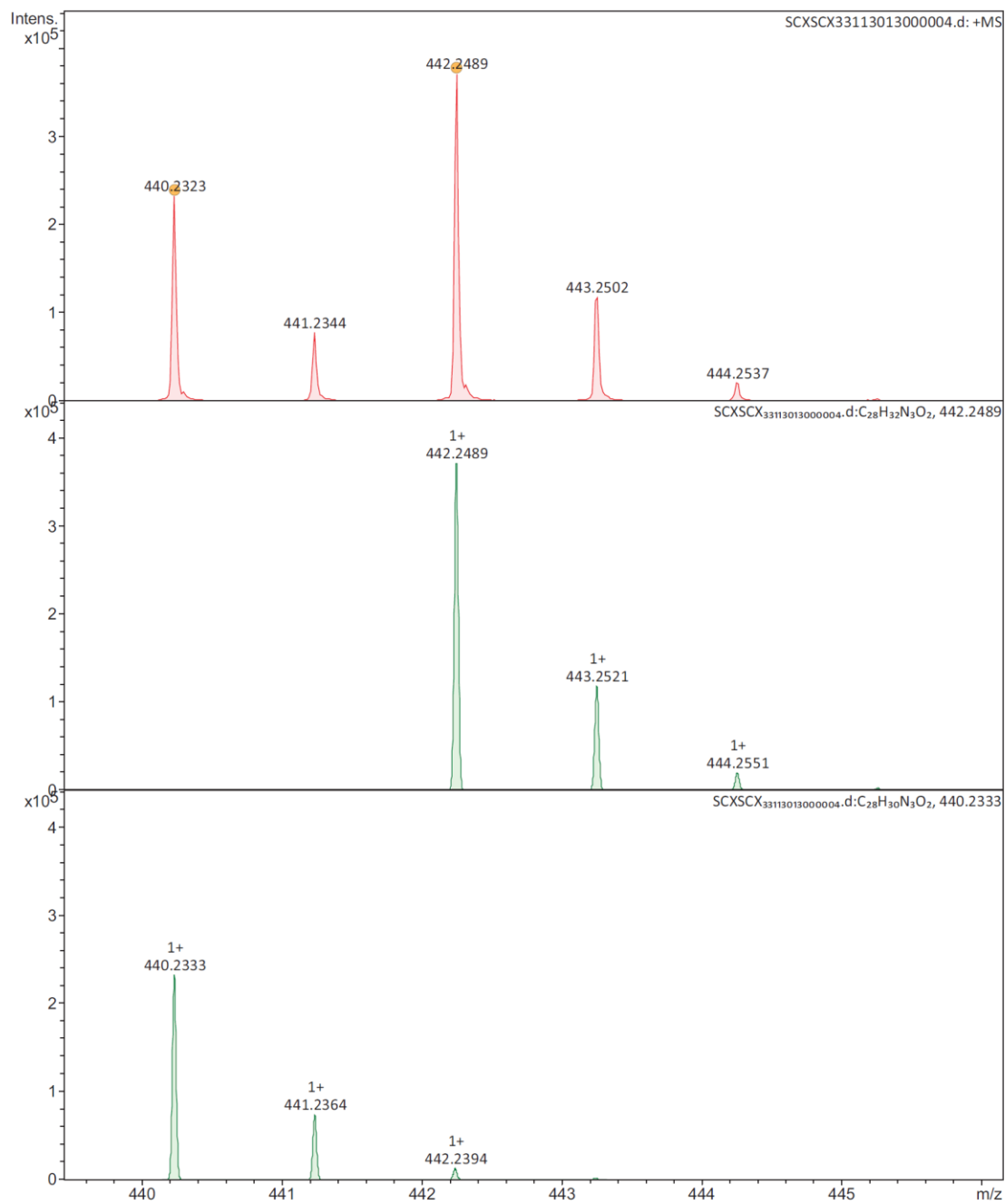




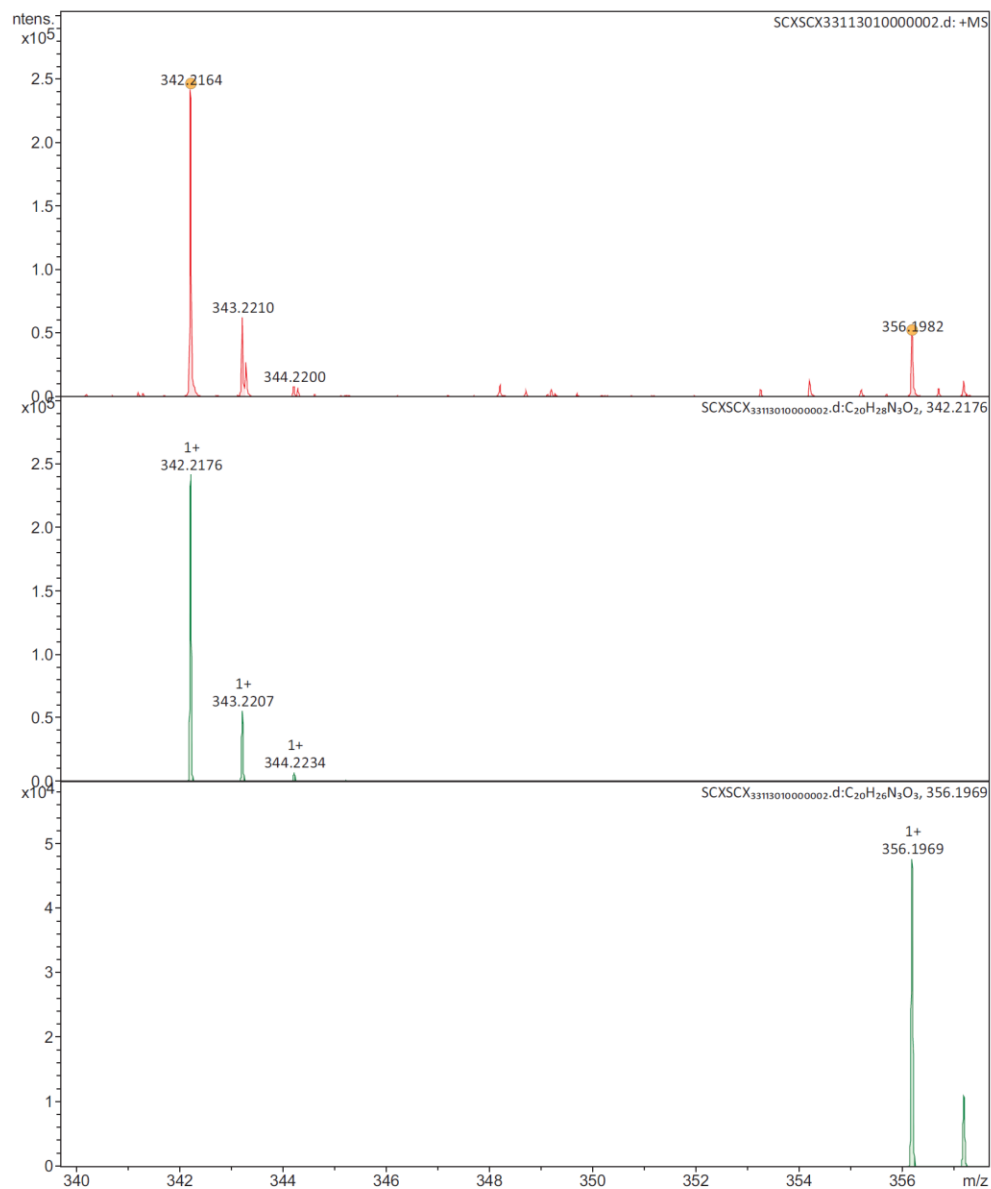
**Figure S40:** HRMS of compound 3- $\{[(4\text{-Fluorobenzyl})\text{amino}]\text{methyl}\}$ -7-methoxy-1-(3-methylbut-2-en-1-yl)-9H-carbazol-2-ol (**2d**), (20, 300 V).



**Figure S41:** HRMS of compound 3- $\{[(4\text{-Bromobenzyl})\text{amino}]\text{methyl}\}$ -7-methoxy-1-(3-methylbut-2-en-1-yl)-9H-carbazol-2-ol (**2e**), (20, 300 V).



**Figure S42:** HRMS of compound 3-[(5-Amino-3,4-dihydroisoquinolin-2(1H)-yl)methyl]-7-methoxy-1-(3-methylbut-2-en-1-yl)-9H-carbazol-2-ol (**2f**), (20, 300 V)



**Figure S43:** HRMS of compound 3- $\{[(3-(\text{Dimethylamino})\text{propyl})(\text{methyl})\text{amino}]\text{methyl}\}$ -7-methoxy-9H-carbazol-2-ol (**3a**), (20, 300 V).