

Supporting Information

An integrated strategy for investigating antioxidants from *Ribes himalense* Royle ex Decne and their potential target proteins

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Table of Contents

| | |
|--|----|
| Figure S1. ESI-MS data of Fr3-1-1..... | 3 |
| Figure S2. ¹ H NMR (600 MHz) data of Fr3-1-1 (in CD ₃ OD)..... | 4 |
| Figure S3. ¹³ C NMR (151 MHz) data of Fr3-1-1 (in CD ₃ OD)..... | 5 |
| Figure S4. ESI-MS data of Fr3-1-2..... | 6 |
| Figure S5. ¹ H NMR (600 MHz) data of Fr3-1-2 (in CD ₃ OD)..... | 7 |
| Figure S6. ¹³ C NMR (151 MHz) data of Fr3-1-2 (in CD ₃ OD)..... | 8 |
| Figure S7. ESI-MS data of Fr3-1-3..... | 9 |
| Figure S8. ¹ H NMR (600 MHz) data of Fr3-1-3 (in CD ₃ OD)..... | 10 |
| Figure S9. ¹³ C NMR (151 MHz) data of Fr3-1-3 (in CD ₃ OD)..... | 11 |
| Figure S10. ESI-MS data of Fr3-1-4..... | 12 |
| Figure S11. ¹ H NMR (600 MHz) data of Fr3-1-4 (in CD ₃ OD)..... | 13 |
| Figure S12. ¹³ C NMR (151 MHz) data of Fr3-1-4 (in CD ₃ OD)..... | 14 |
| Figure S13. Interaction of Fr3-1-1 with active sites of 9 potential target proteins..... | 15 |
| Figure S14. Interaction of Fr3-1-2 with active sites of 9 potential target proteins..... | 16 |
| Figure S15. Interaction of Fr3-1-3 with active sites of 9 potential target proteins..... | 17 |
| Figure S16. Interaction of Fr3-1-4 with active sites of 9 potential target proteins..... | 18 |

Figure S1. ESI-MS data of Fr3-1-1

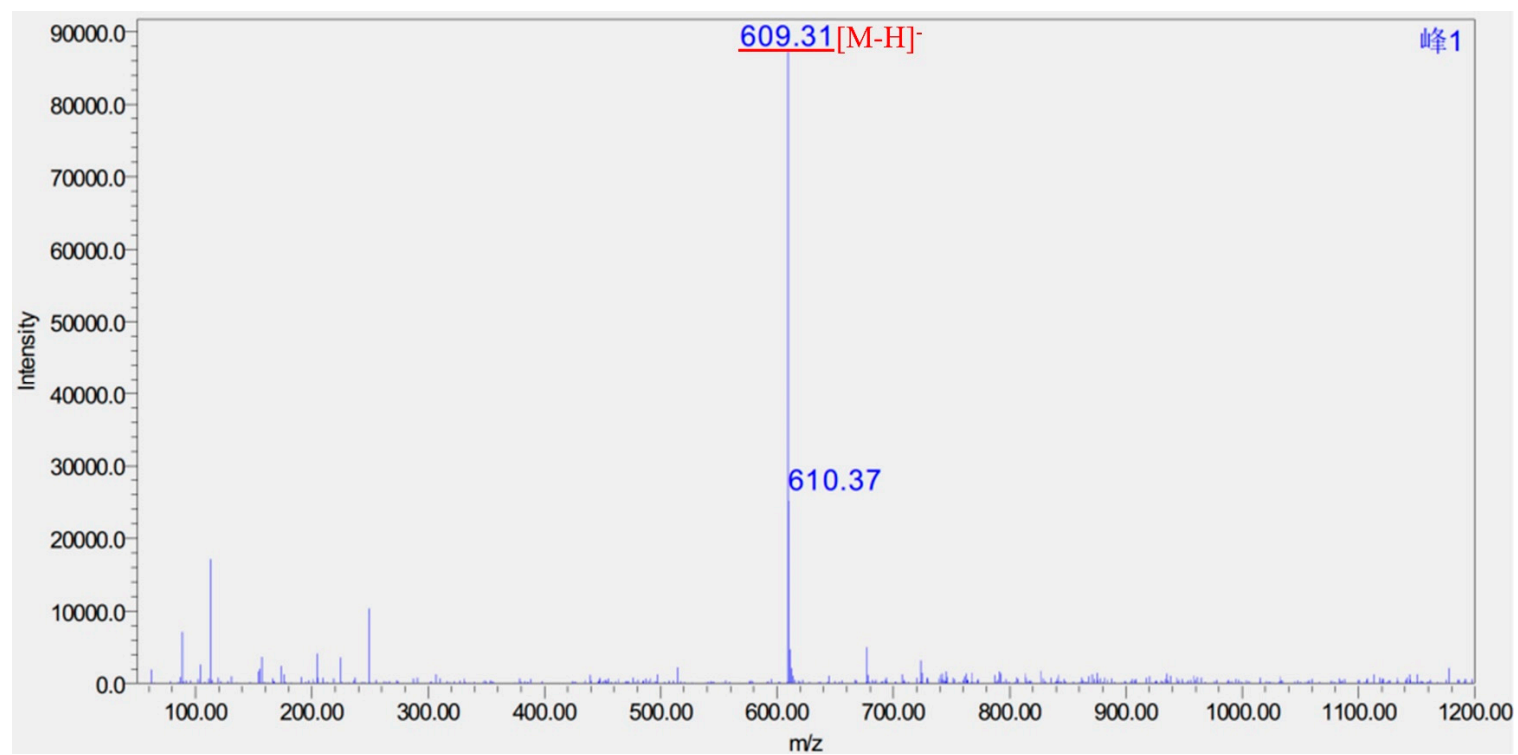


Figure S2. ^1H NMR (600 MHz) data of Fr3-1-1 (in CD_3OD)

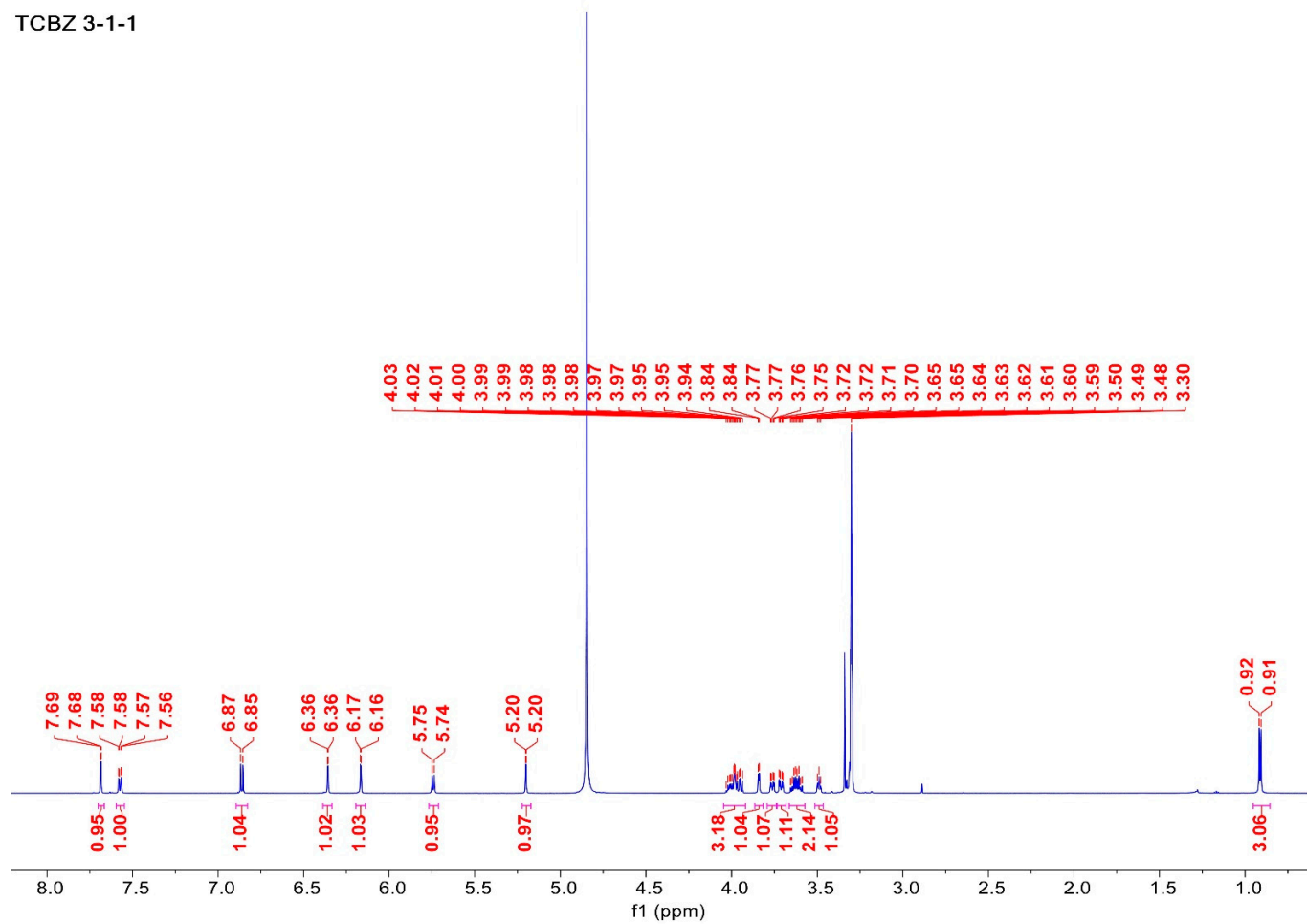


Figure S3. ^{13}C NMR (151 MHz) data of Fr3-1-1 (in CD_3OD)

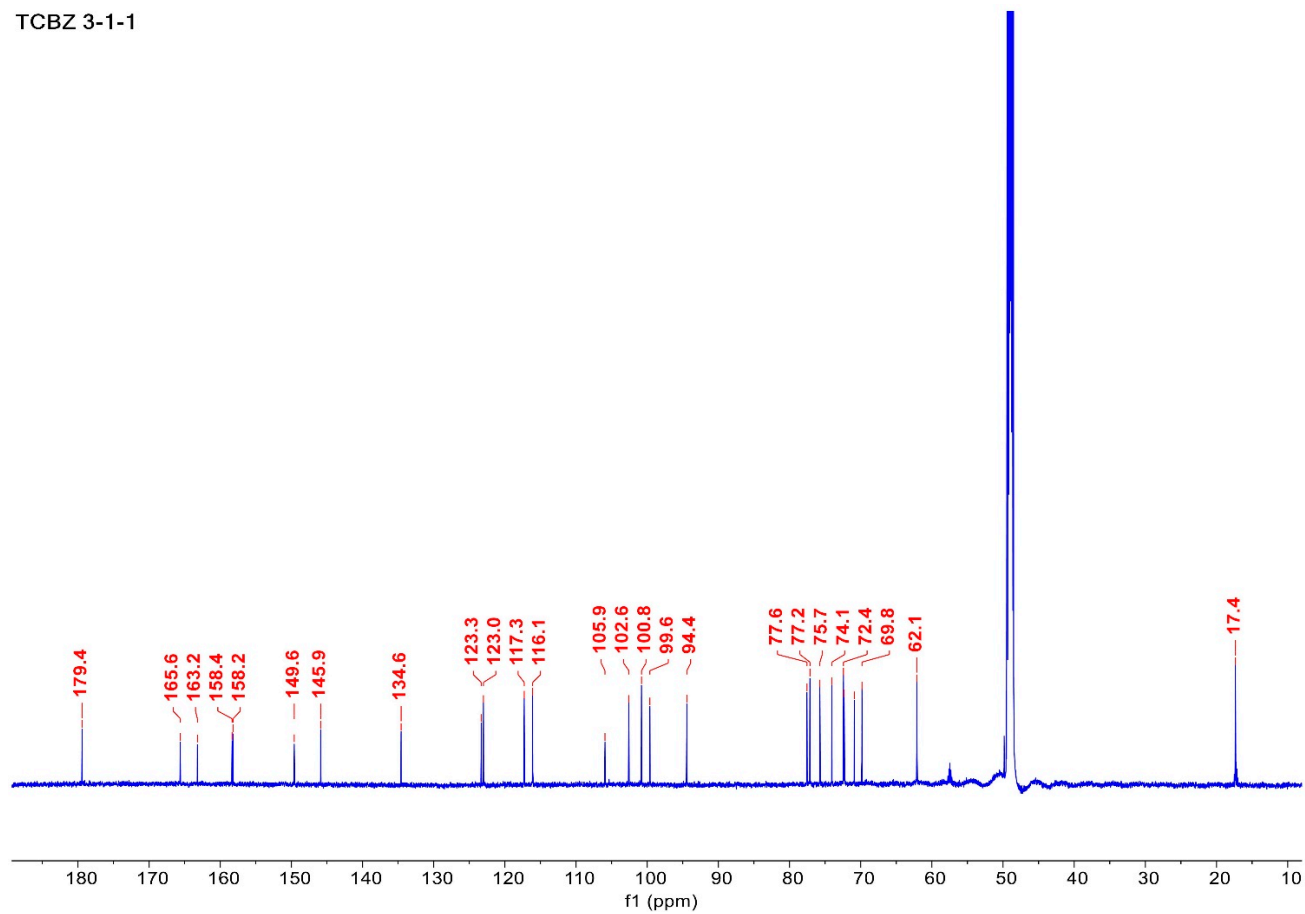


Figure S4. ESI-MS data of Fr3-1-2

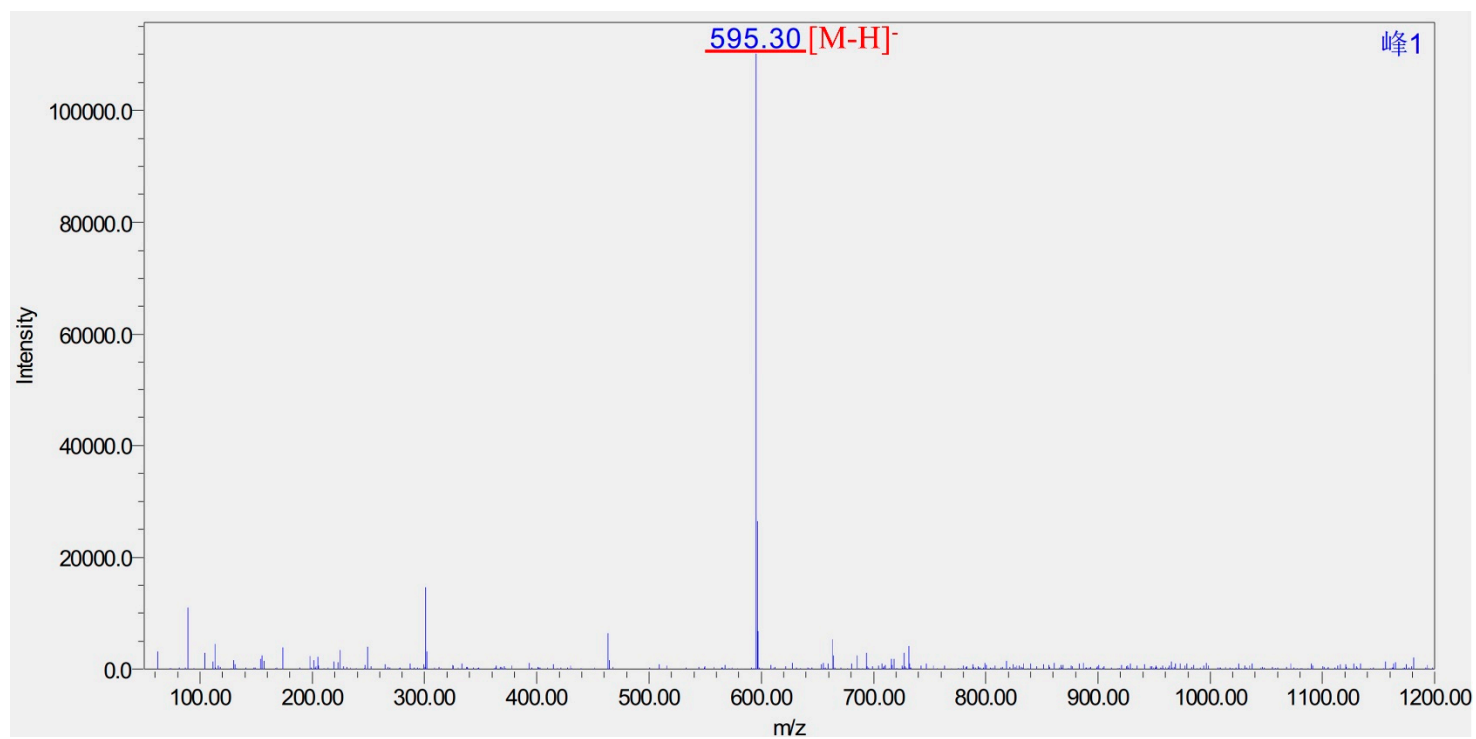


Figure S5. ^1H NMR (600 MHz) data of Fr3-1-2 (in CD_3OD)

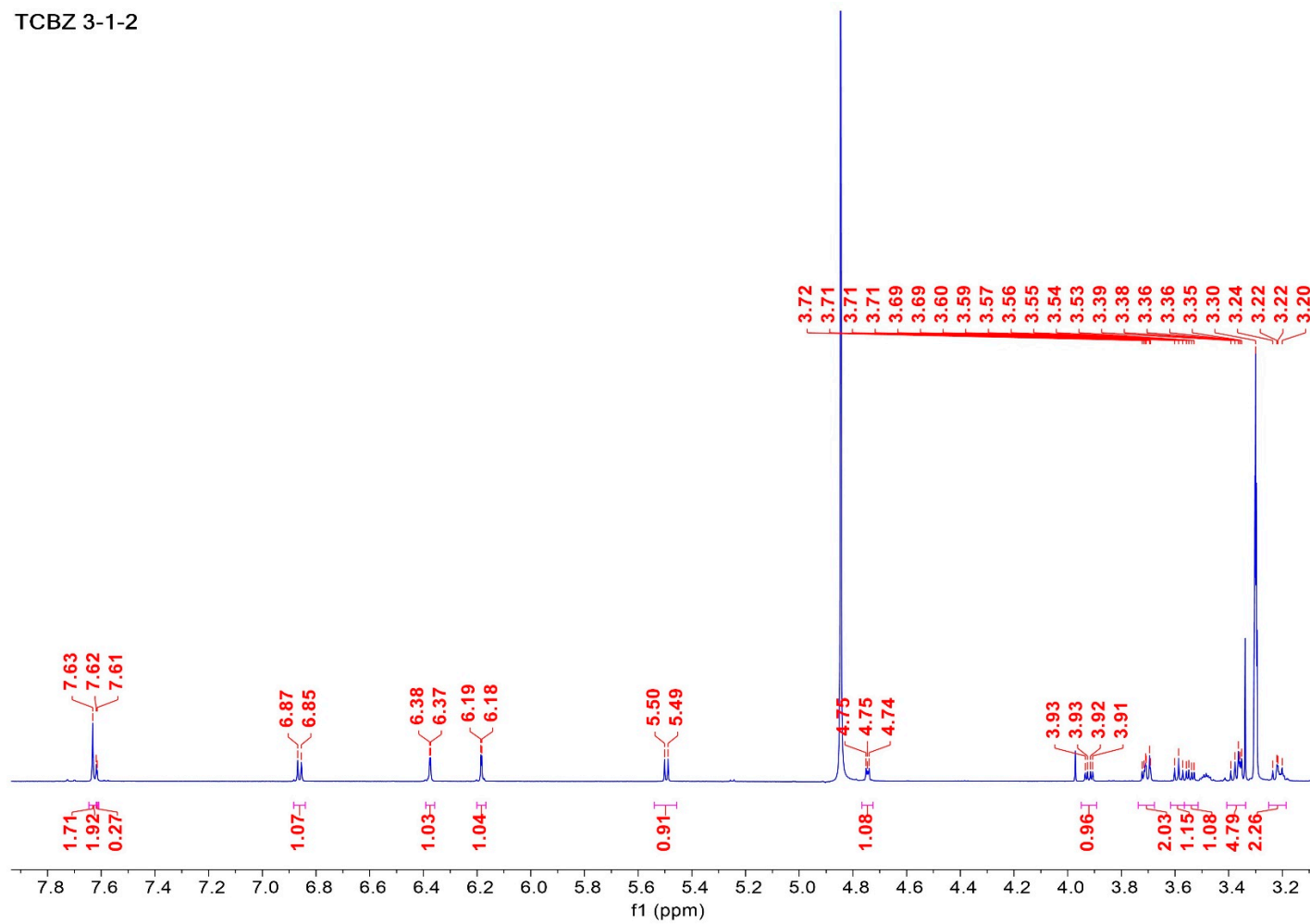


Figure S6. ^{13}C NMR (151 MHz) data of Fr3-1-2 (in CD_3OD)

TCBZ 3-1-2

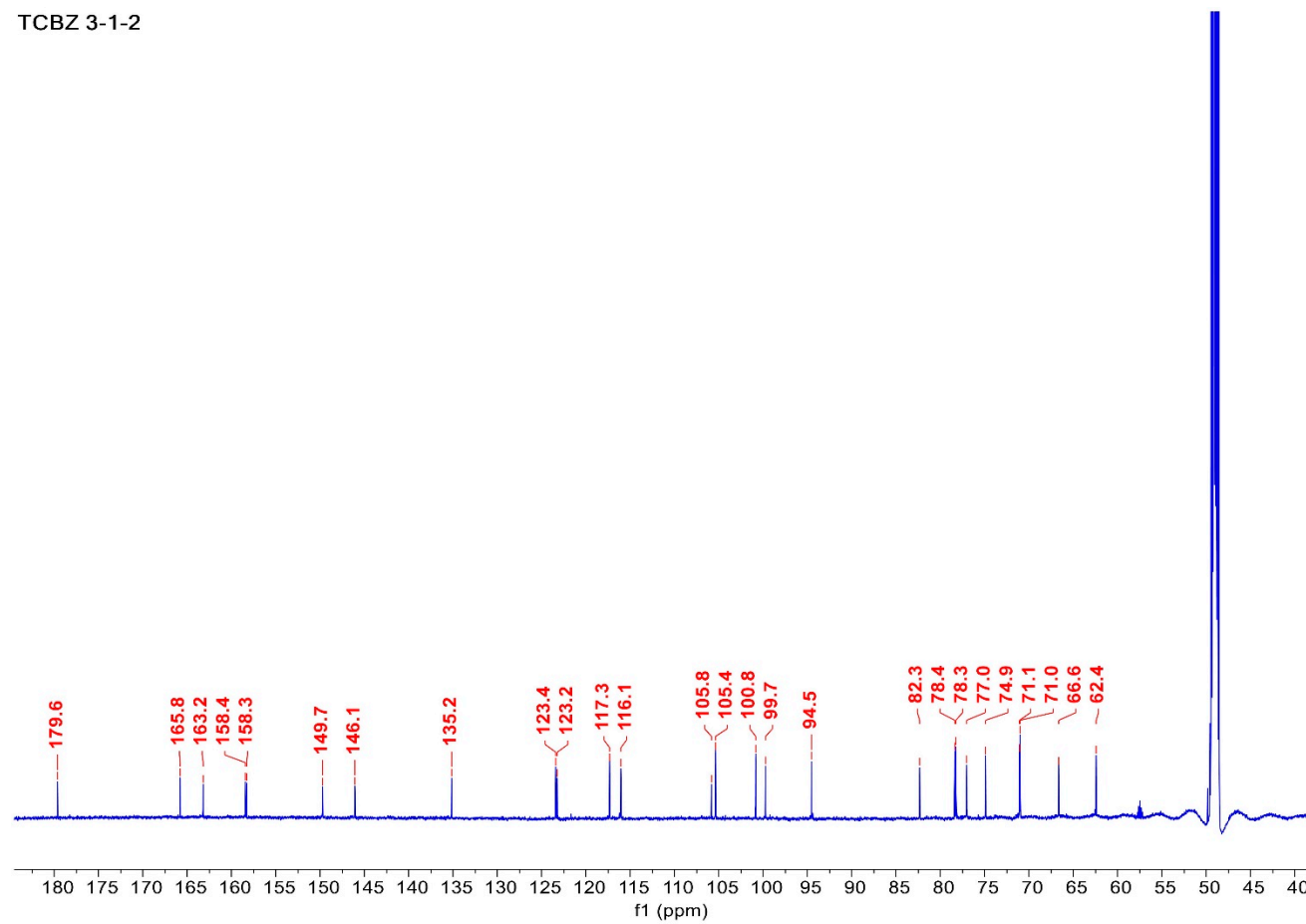


Figure S7. ESI-MS data of Fr3-1-3

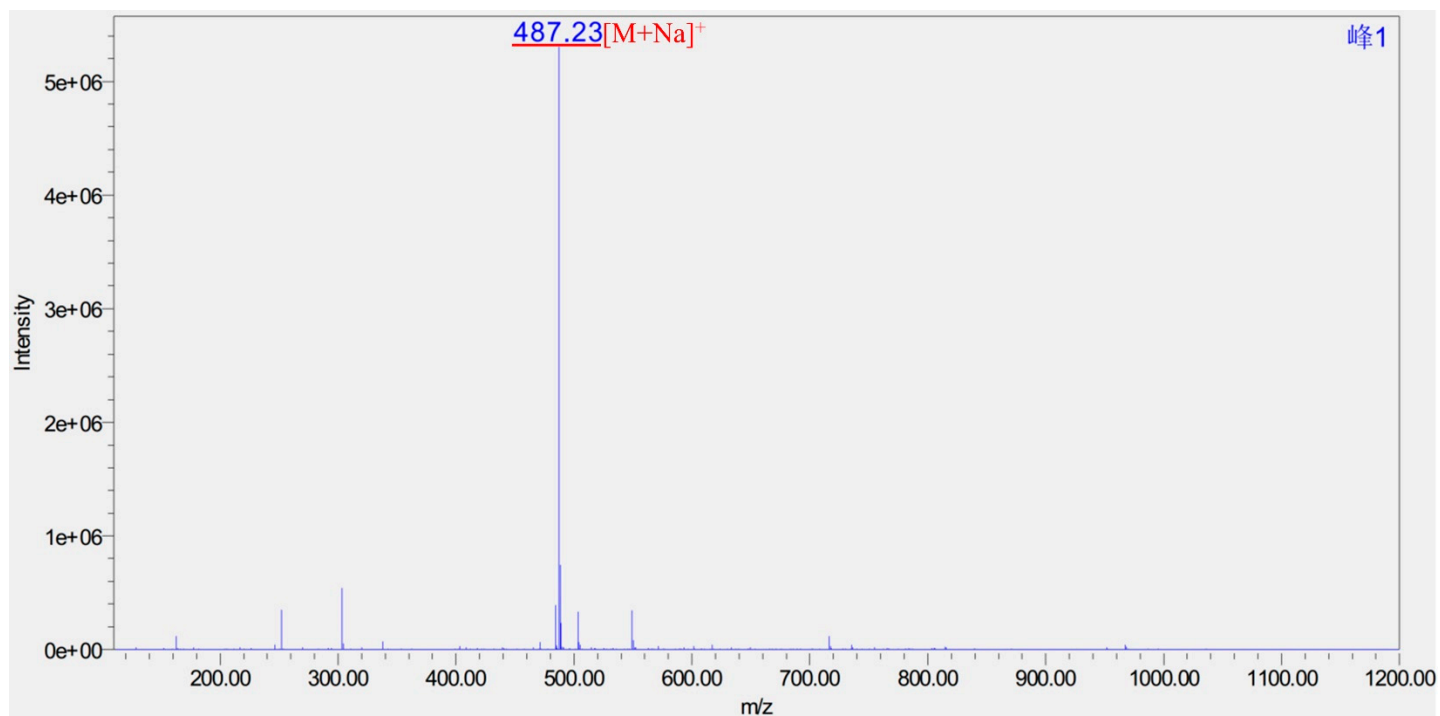


Figure S8. ^1H NMR (600 MHz) data of Fr3-1-3 (in CD_3OD)

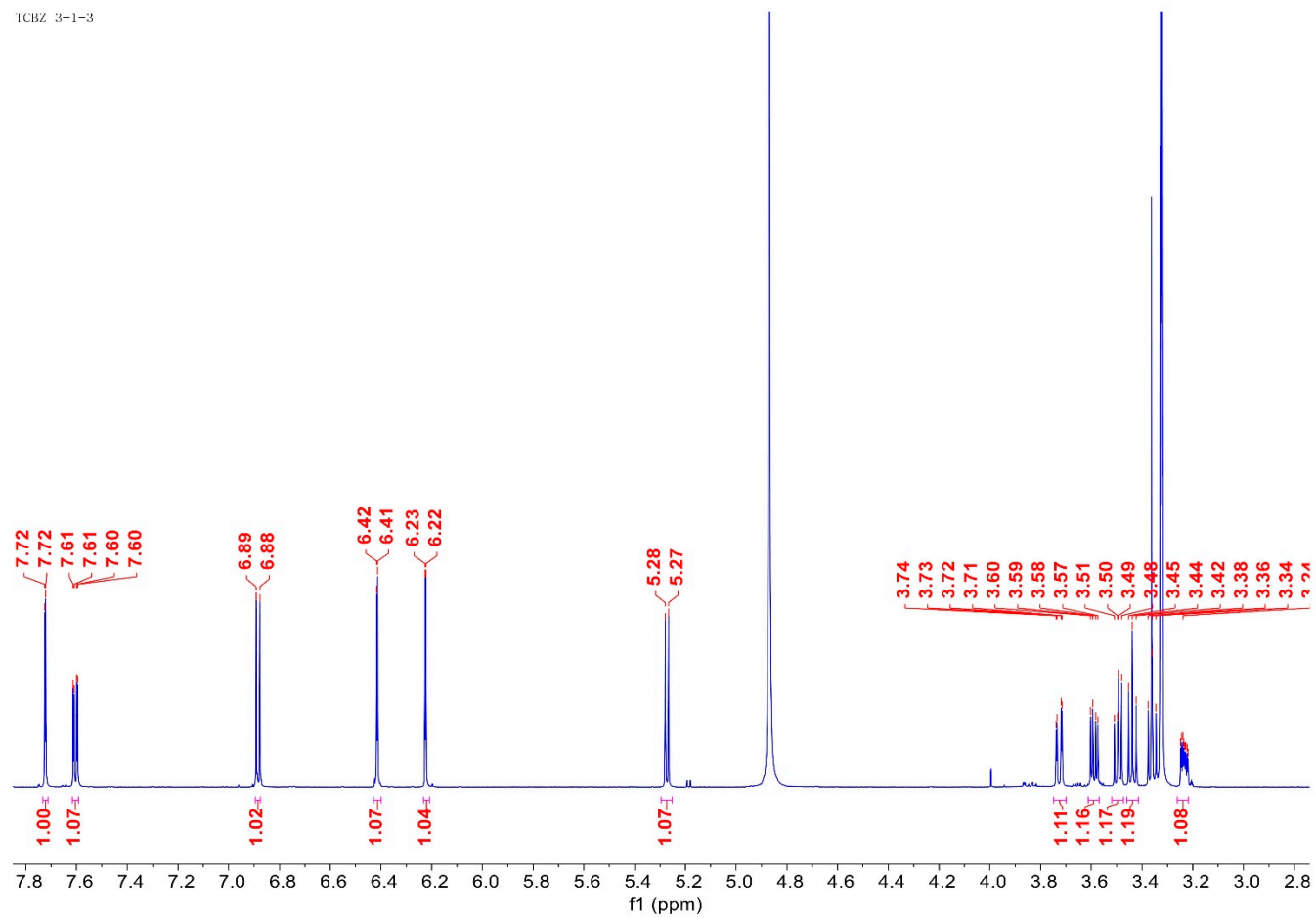


Figure S9. ^{13}C NMR (151 MHz) data of Fr3-1-3 (in CD_3OD)

TCBZ 3-1-3

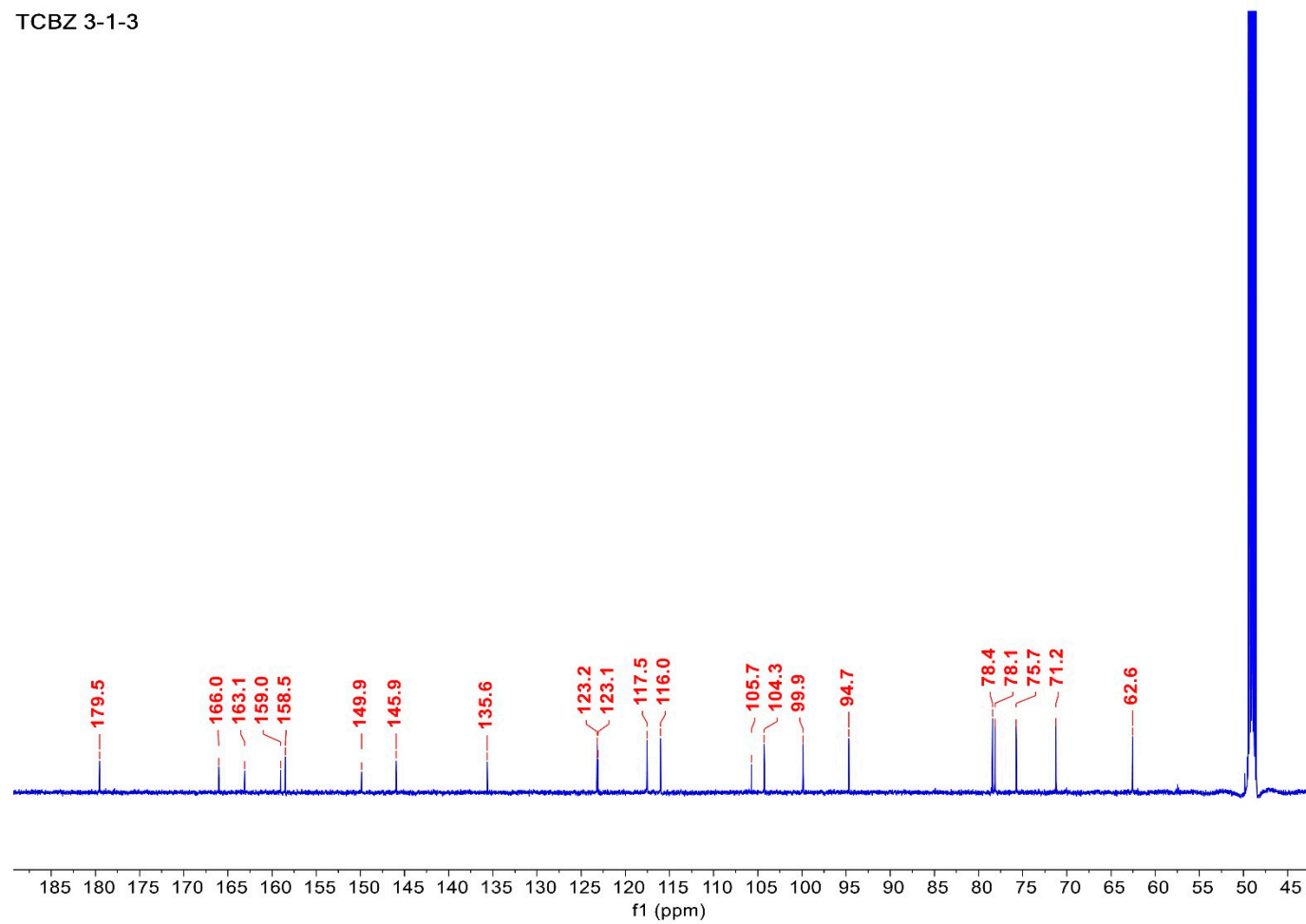
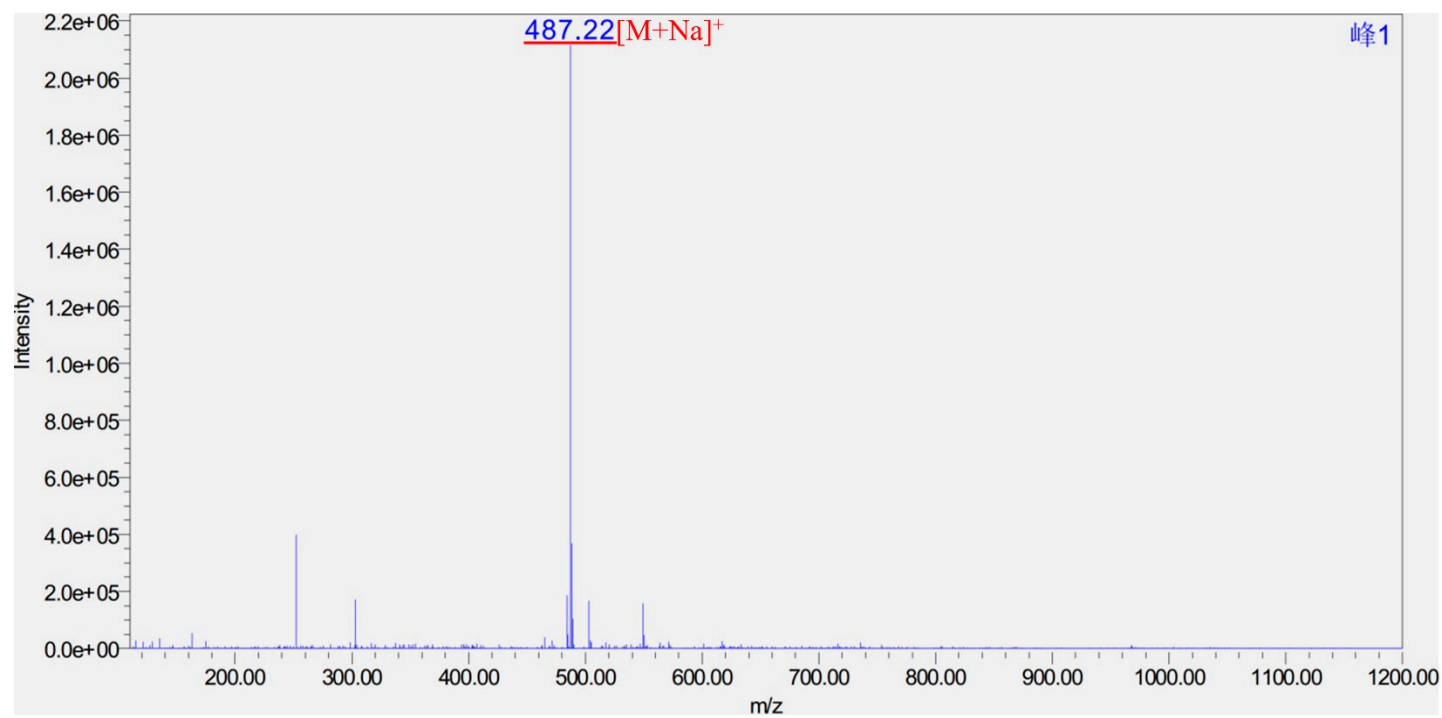


Figure S10. ESI-MS data of Fr3-1-4



¹H NMR spectrum (CDCl₃) of compound 3-1-4. The x-axis represents the chemical shift in ppm (f1), ranging from 2.0 to 8.0. The spectrum shows several multiplets and doublets, with integration values provided below the peaks.

| Chemical Shift (ppm) | Integration |
|--|-------------|
| 7.86, 7.85 | 1.00 |
| 7.61, 7.61, 7.60, 7.59 | 1.08 |
| 6.89, 6.87 | 1.10 |
| 6.42, 6.42 | 1.02 |
| 6.22, 6.22 | 1.01 |
| 5.19, 5.18 | 1.06 |
| 3.87, 3.87, 3.86, 3.86, 3.67, 3.66, 3.65, 3.64, 3.58, 3.58, 3.57, 3.57 | 1.06 |
| 3.56, 3.56, 3.55, 3.50, 3.50, 3.49, 3.49, 3.48, 3.48 | 2.21 |

Figure S12. ^{13}C NMR (151 MHz) data of Fr3-1-4 (in CD_3OD)

TCBZ 3-1-4

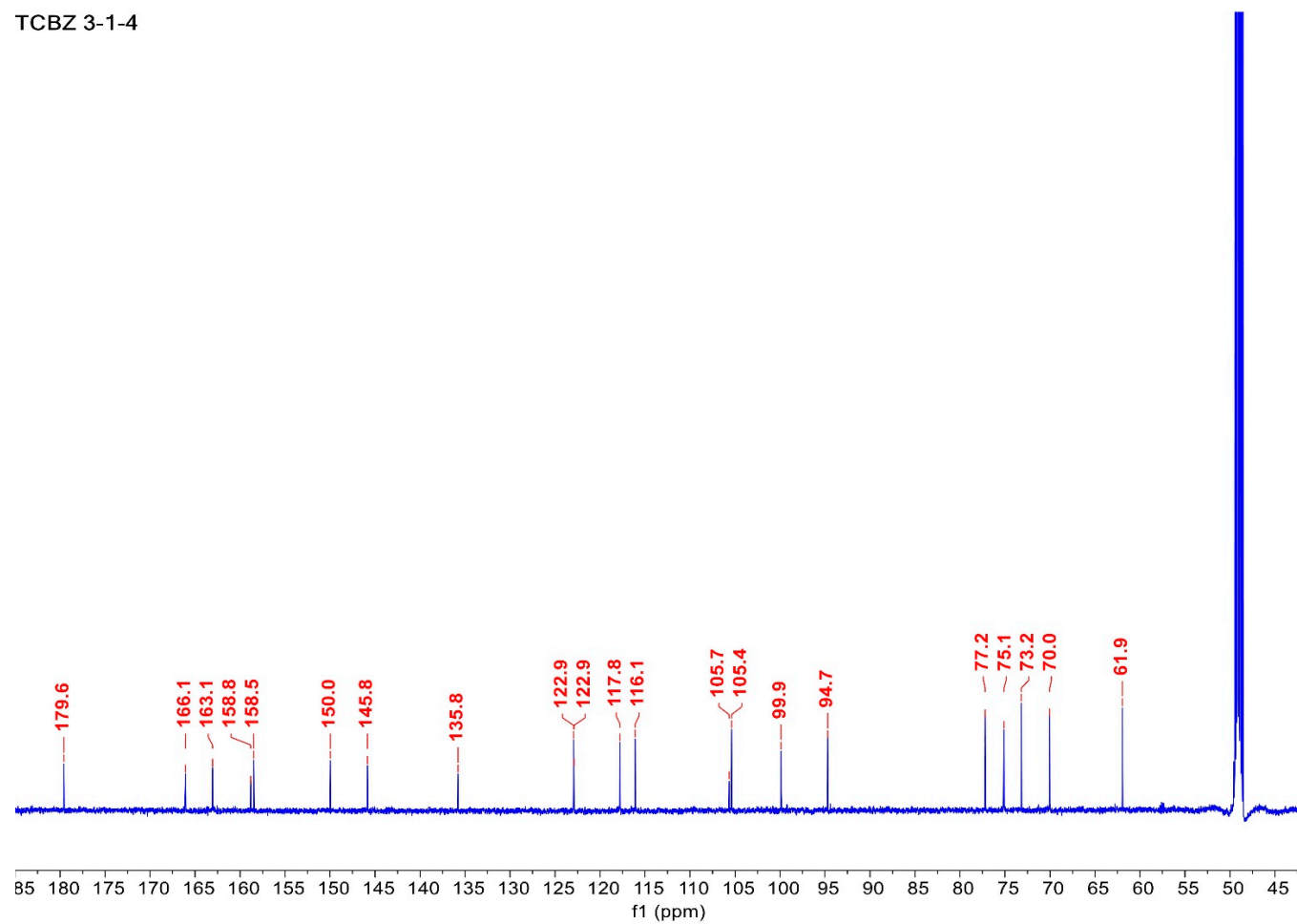
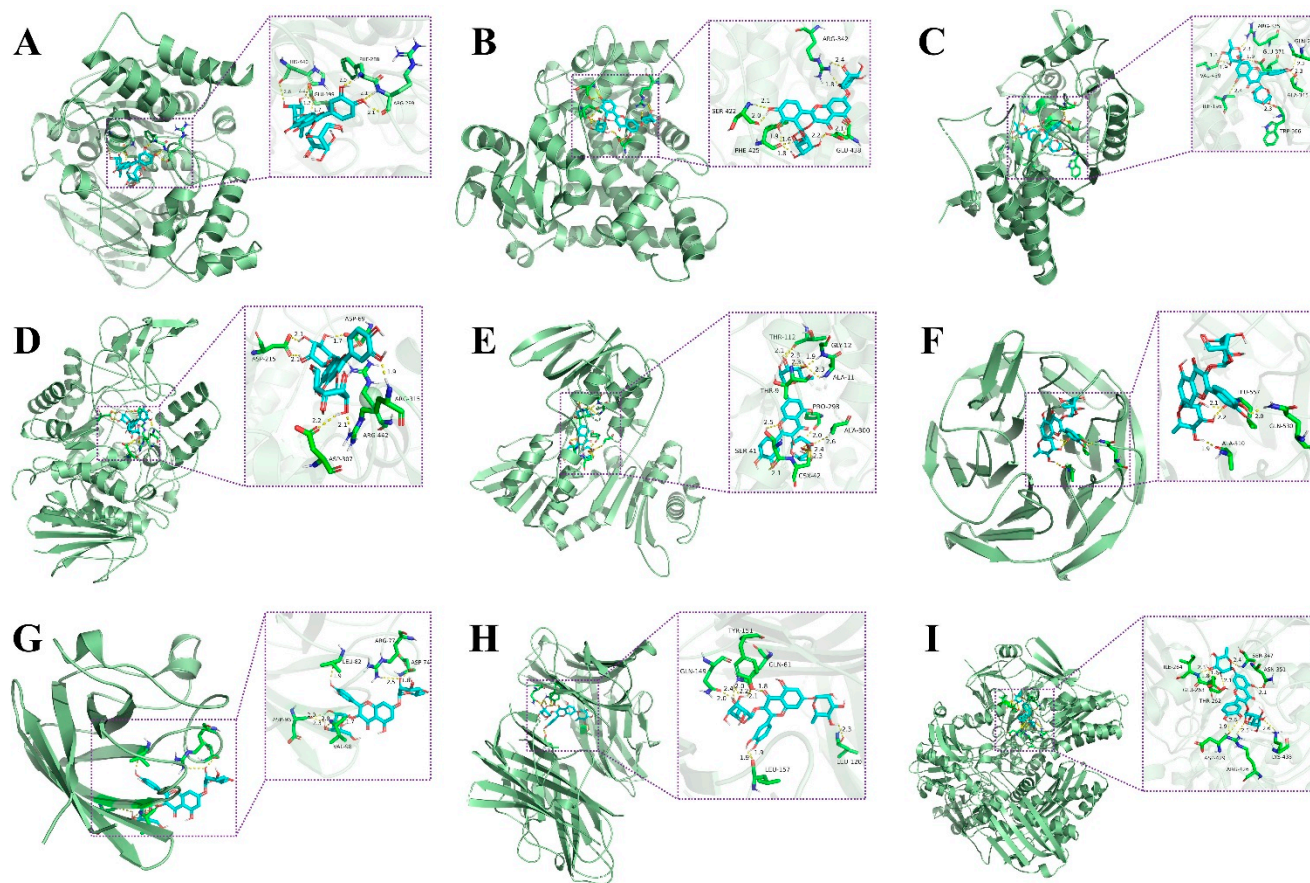
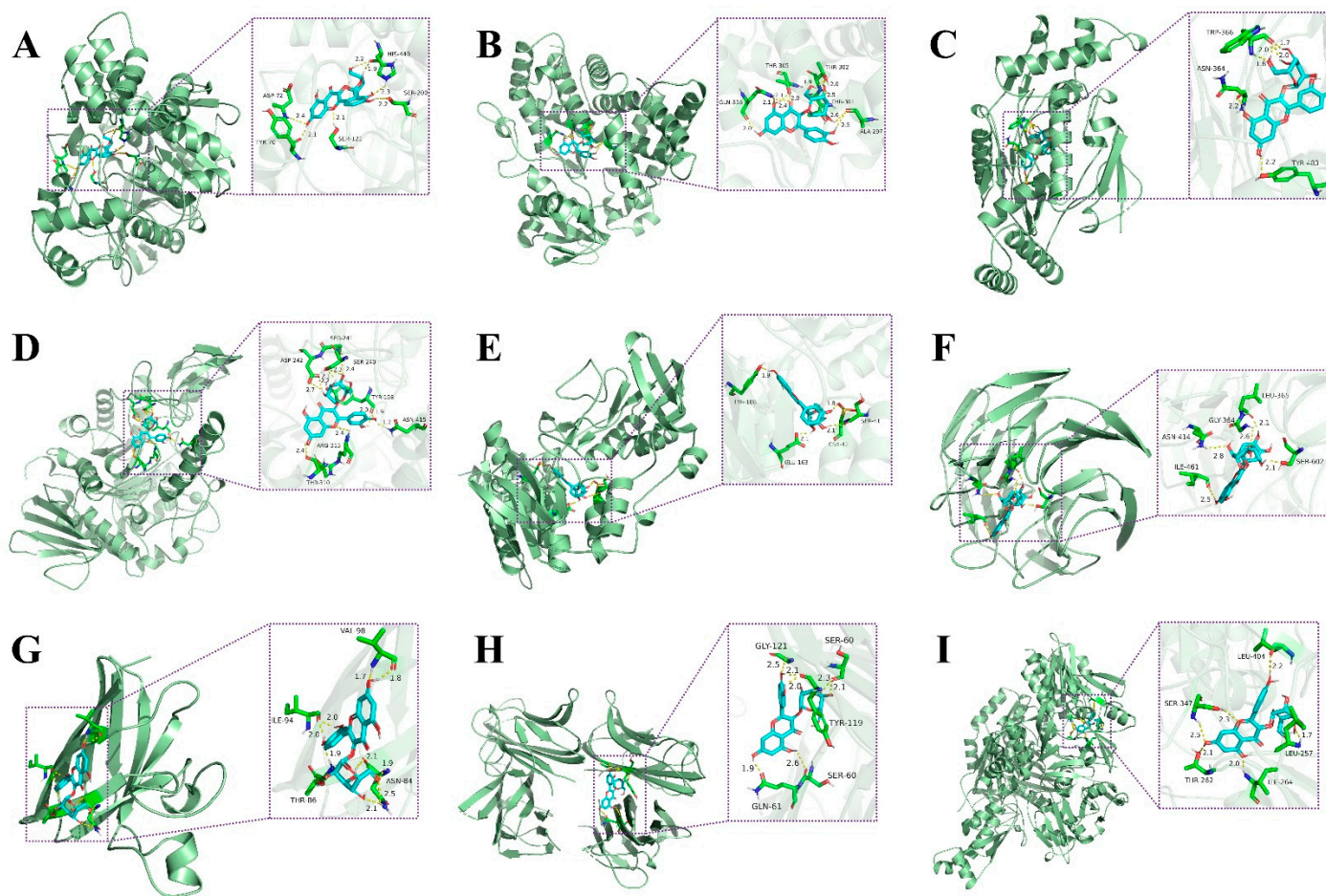


Figure S13. Interaction of Fr3-1-1 with active sites of 9 potential target proteins.



The potential target proteins represented by A-I are: AChE, CYP2C9, iNOS, α -glucosidase, NADPH-oxidase, Nrf2, SOD, TNF- α , XOD, respectively.

Figure S16. Interaction of Fr3-1-4 with active sites of 9 potential target proteins.



The potential target proteins represented by A-I are: AchE, CYP2C9, iNOS, α -glucosidase, NADPH-oxidase, Nrf2, SOD, TNF- α , XOD, respectively.