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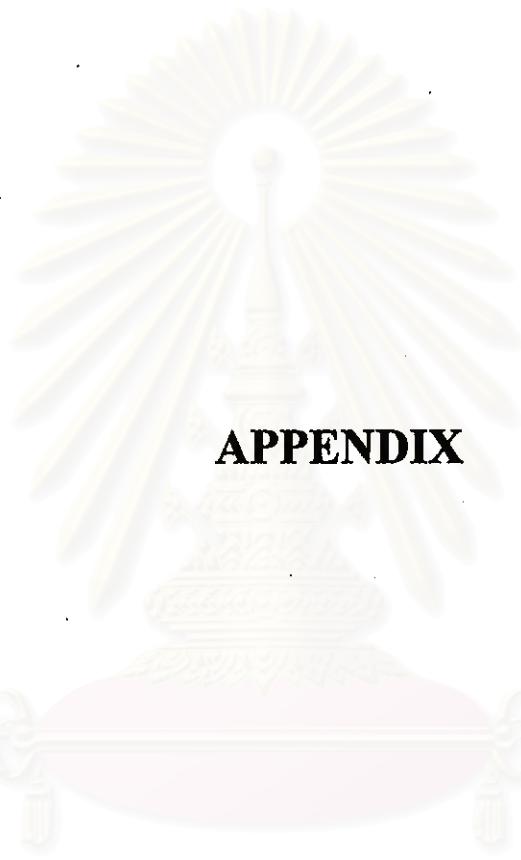
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สถาบันวิทยบริการ  
จุฬาลงกรณ์มหาวิทยาลัย



## **APPENDIX**

สถาบันวิทยบริการ  
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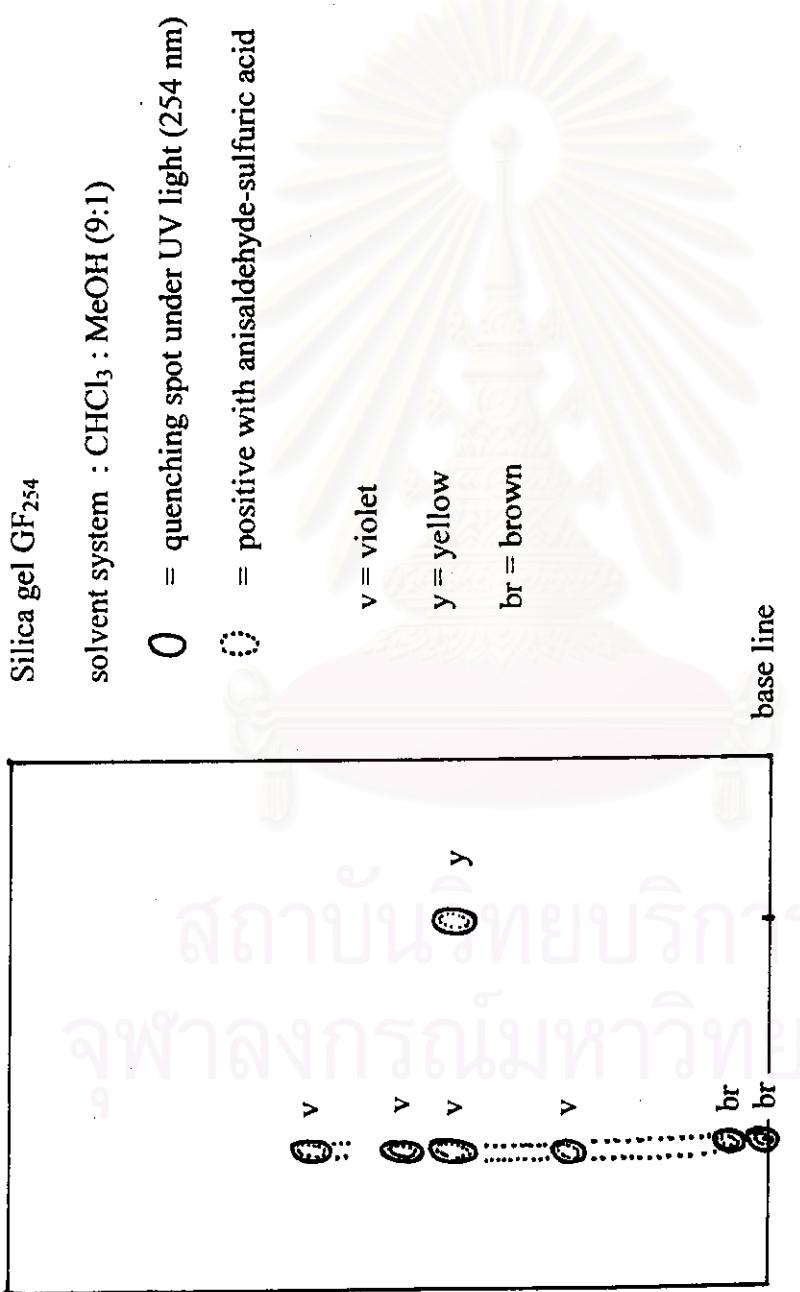


Figure 11. TLC chromatogram of the fractions MF006 and KMF006

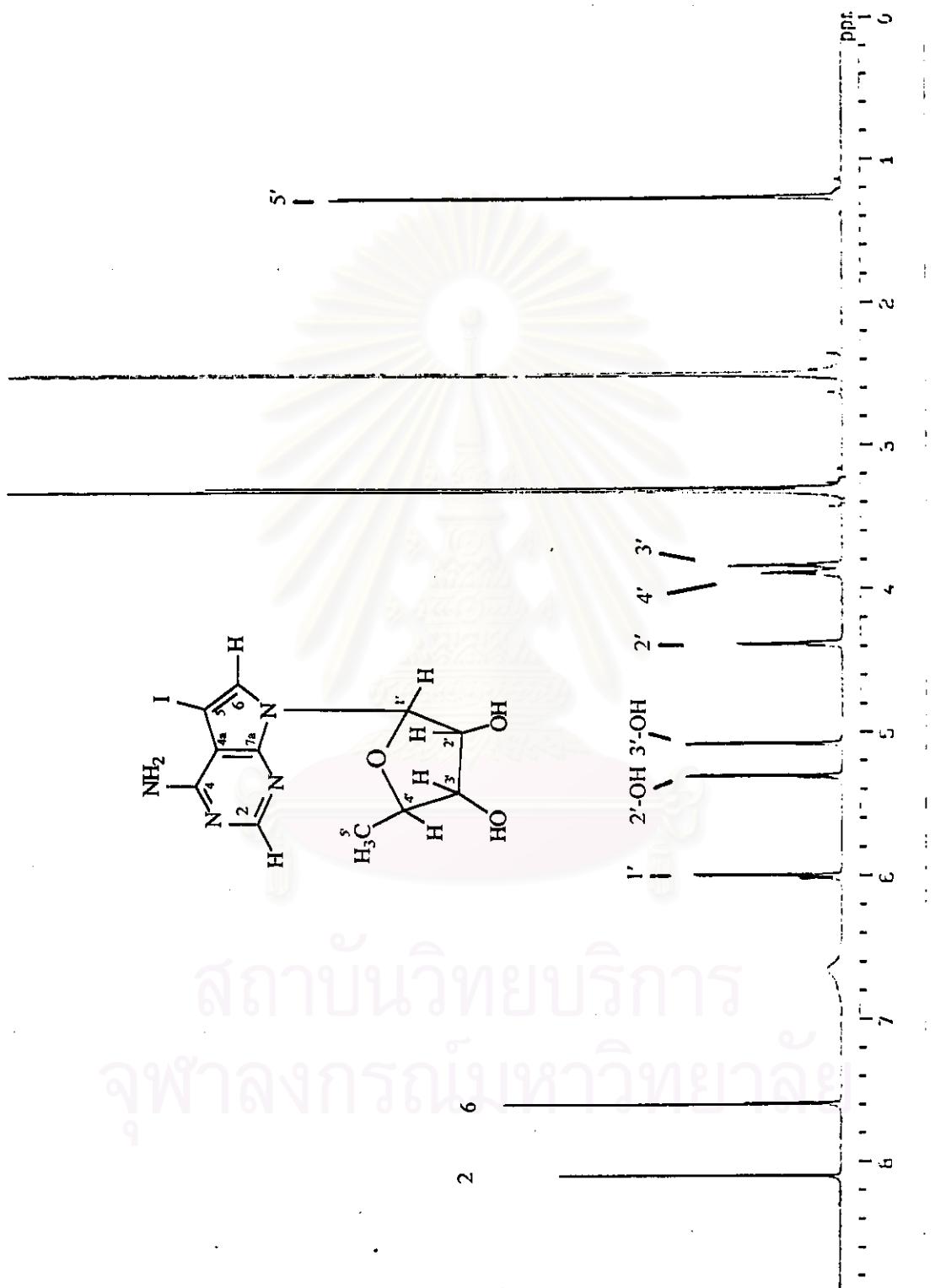


Figure 12. The 500 MHz  $^1\text{H}$  NMR spectrum of compounds KMF006-1 and KMF006-2 (in  $\text{DMSO-d}_6$ )

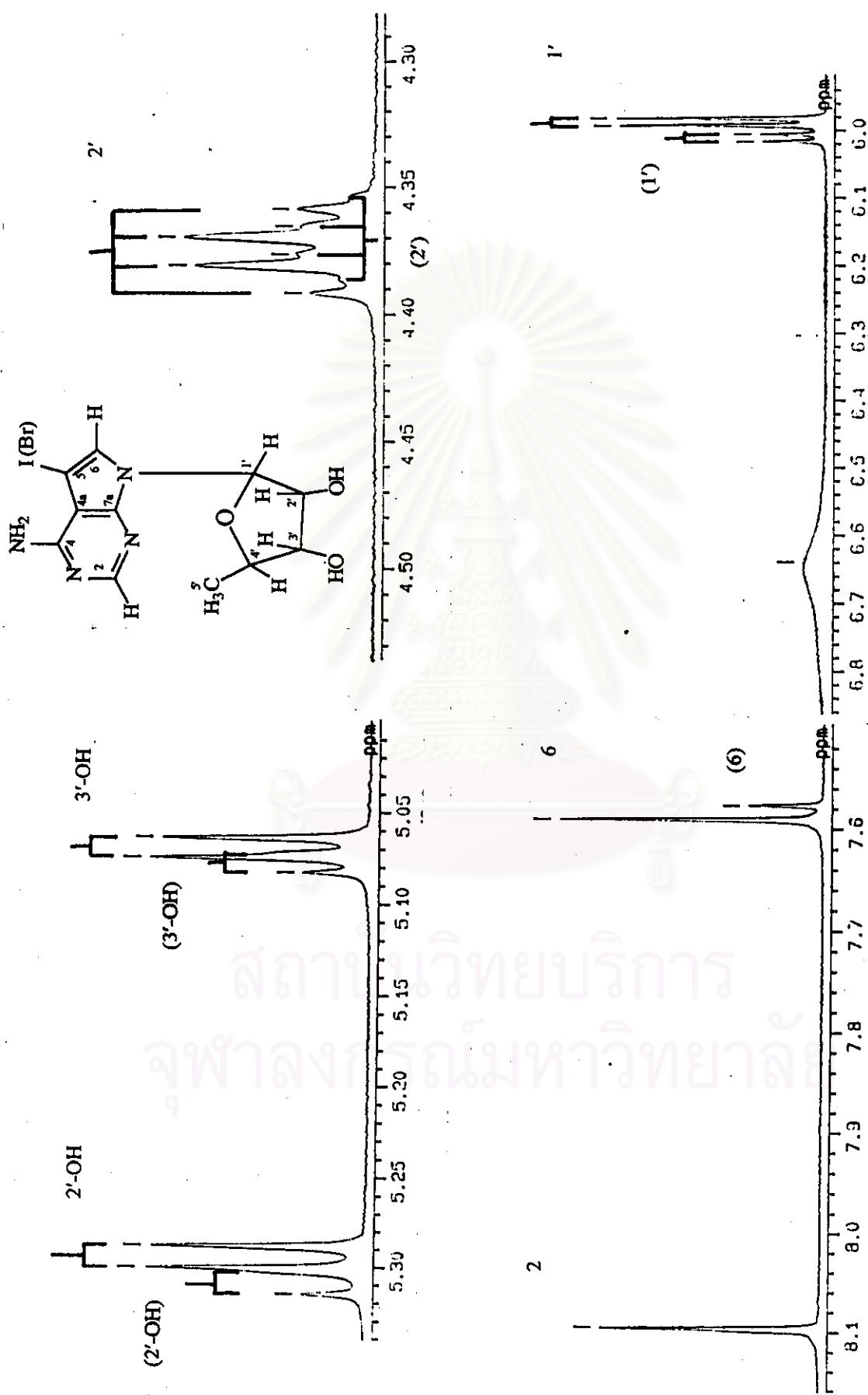


Figure 13. The 500 MHz  $^1\text{H}$  nmr spectrum of compounds KMF006-1 and KMF006-2 (in  $\text{DMSO-d}_6$ )  
(expanded from 4.30-8.26 ppm) ( ) indicate nmr peak of KMF006-2

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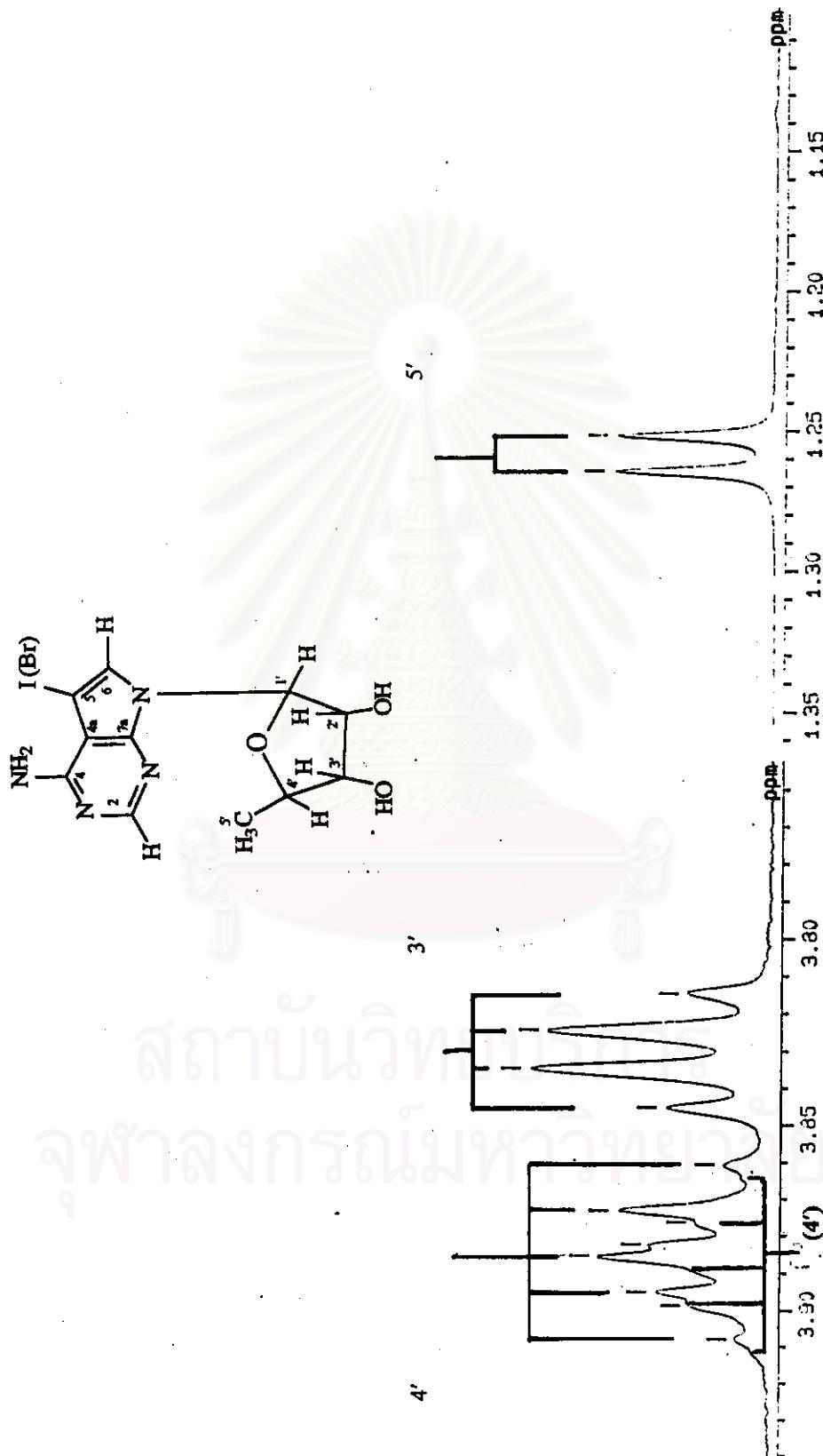


Figure 14. The 500 MHz  $^1\text{H}$  NMR spectrum of compounds KMF006-1 and KMF006-2 (in  $\text{DMSO-d}_6$ )  
(expanded from 1.15-3.95 ppm) ( ) indicate nmr peak of KMF006-2

(expanded from 1.15-3.95 ppm)

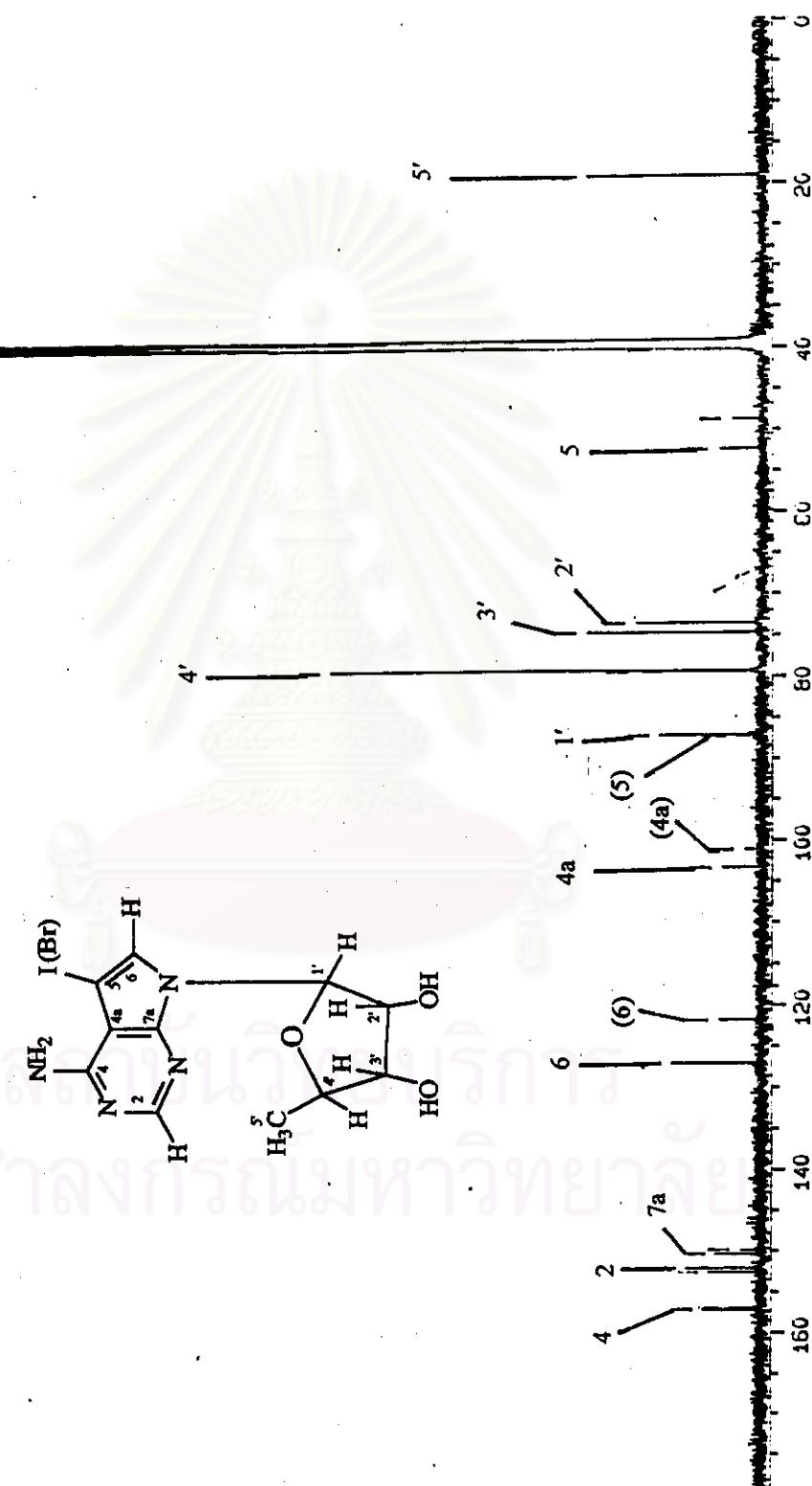
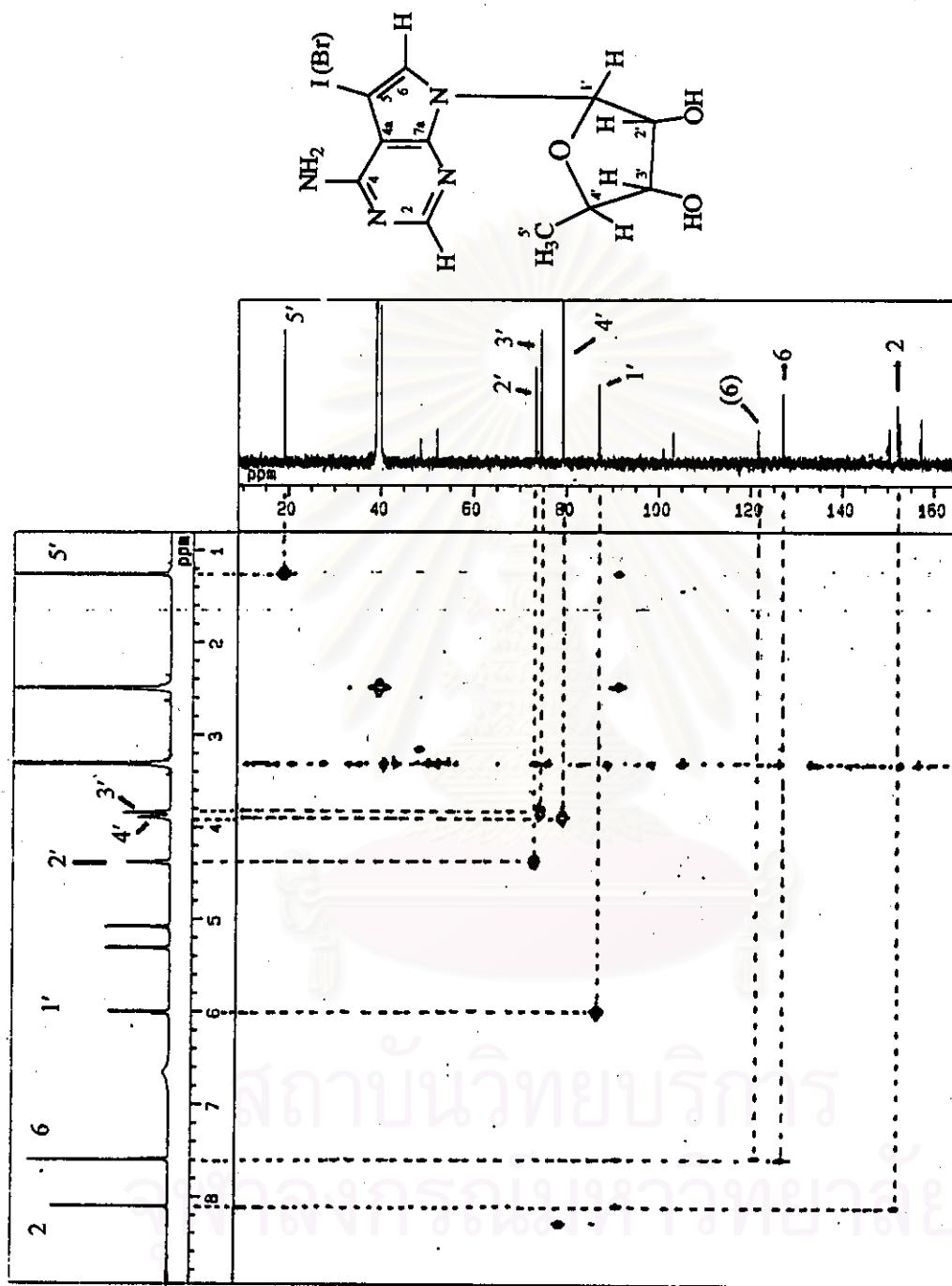


Figure 15. The 125 MHz  $^{13}\text{C}$  nmr spectrum of compounds KMF006-1 and KMF006-2 (in  $\text{DMSO-d}_6$ )

( ) indicate nmr peak of KMF006-2



**Figure 16.** The 500 MHz HMQC spectrum of compounds KMF006-1 and KMF006-2 (in DMSO-d<sub>6</sub>)

( ) indicate nmr peak of KMF006-2

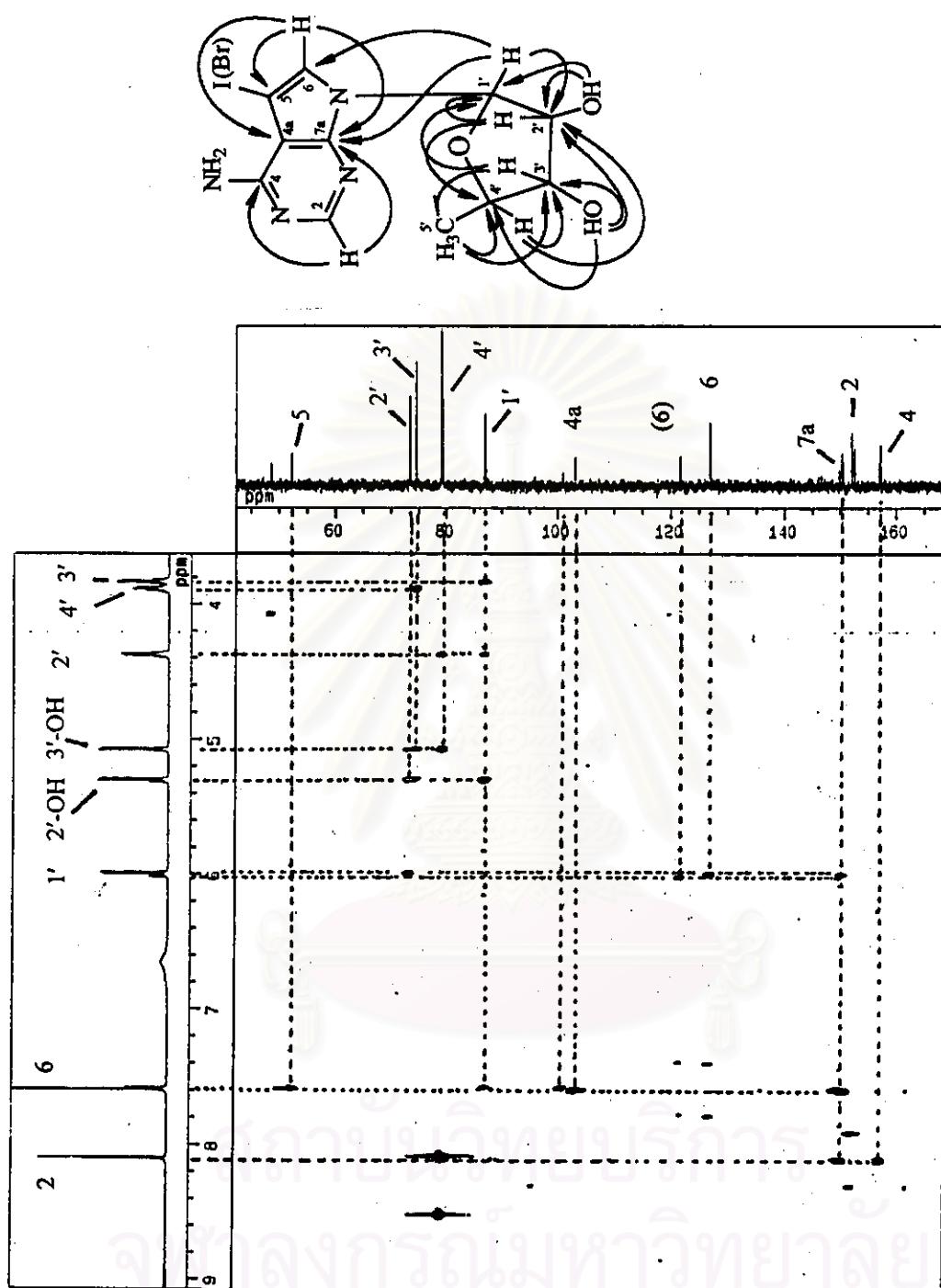
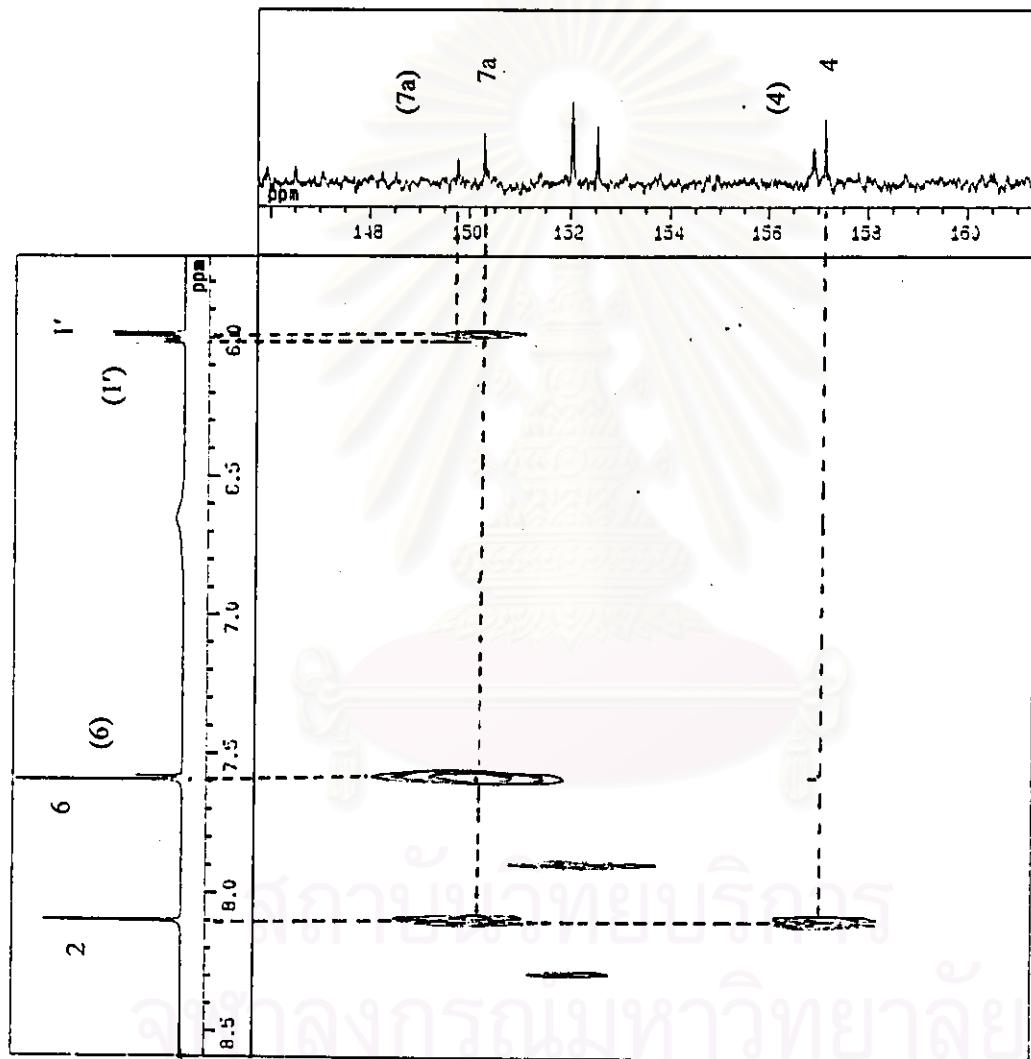


Figure 17. The 500 MHz HMBC ( $J = 8 \text{ Hz}$ ) spectrum of compounds KMF006-1 and KMF006-2 (in DMSO- $d_6$ )  
(expanded from 45-160 ppm) ( ) indicate nmr peak of KMF006-2

(expanded from 45-160 ppm) ( ) indicate nmr peak of KMF006-2



**Figure 18.** The 500 MHz HMBC ( $J = 8$  Hz) spectrum of compounds KMF006-1 and KMF006-2 (in DMSO-d<sub>6</sub>)  
(expanded from 146-160 ppm) ( ) indicate nmr peak of KMF006-2

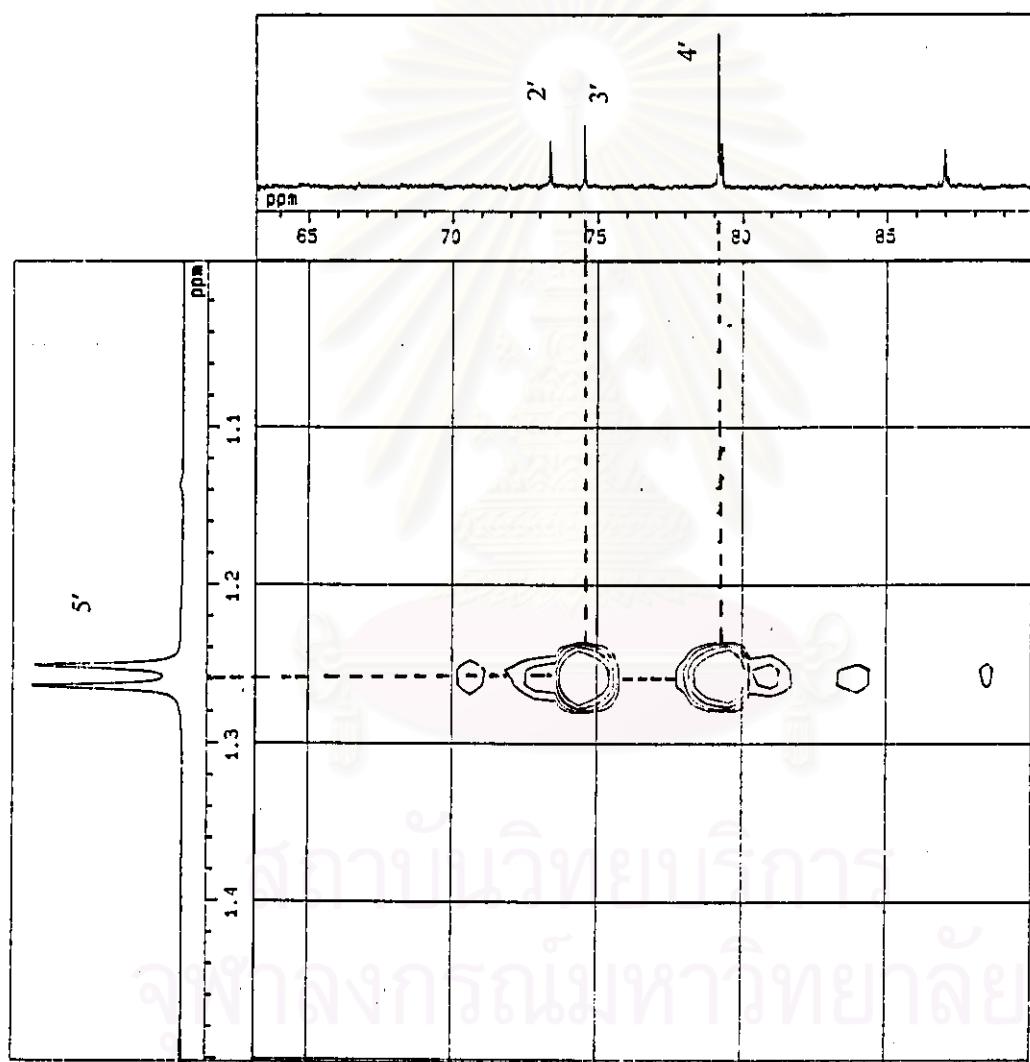


Figure 19. The 500 MHz HMBC ( $J = 8$  Hz) spectrum of compounds KMF006-1 and KMF006-2 (in DMSO-d<sub>6</sub>) (expanded from 65-90 ppm)

(expanded from 65-90 ppm)

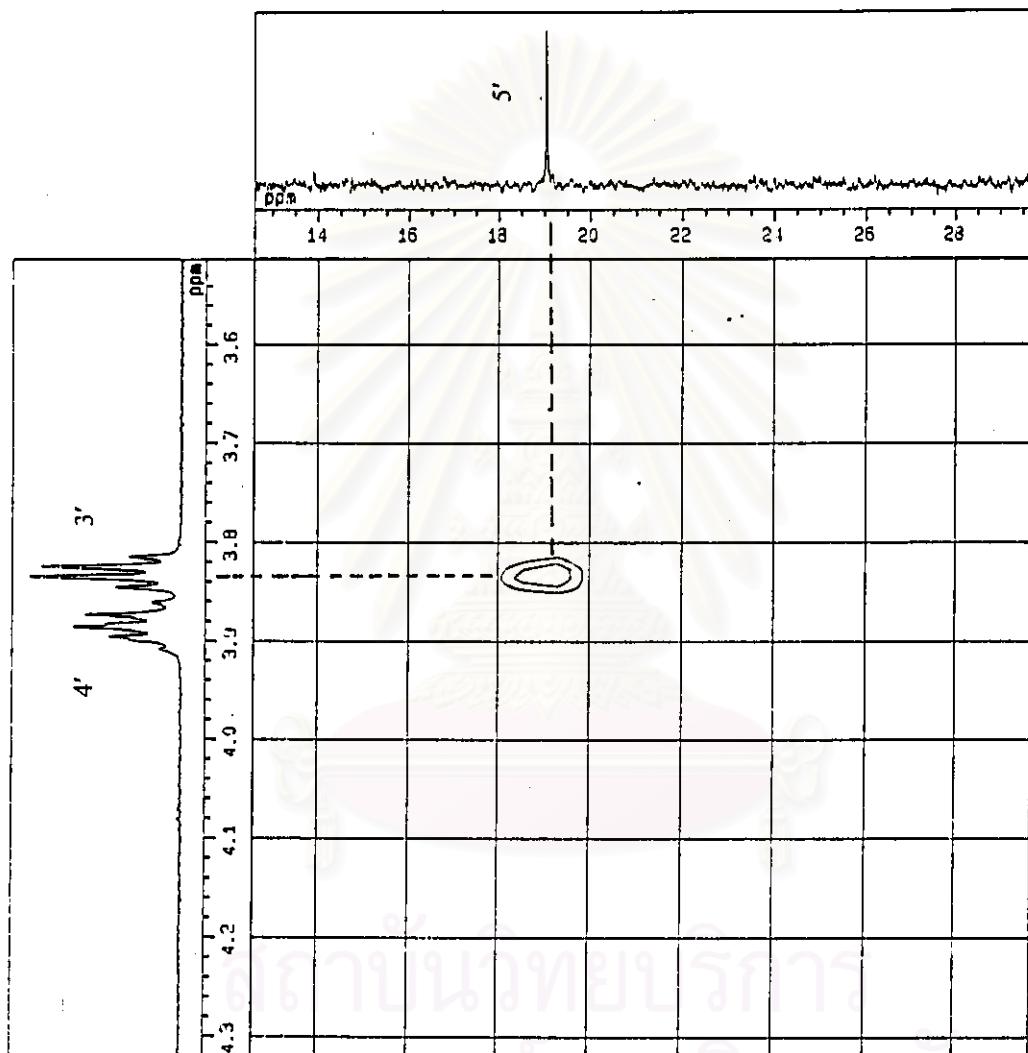


Figure 20. The 500 MHz HMBC ( $J = 8$  Hz) spectrum of compounds KMF006-1 and KMF006-2 (in DMSO- $d_6$ )  
(expanded from 14-28 ppm)

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**Figure 21.** The 500 MHz NOE difference spectrum of compounds KMF006-1 and KMF006-2 (in DMSO-d<sub>6</sub>), irradiation at 1.25 (5'-CH<sub>3</sub>), 4.37 (H-2'), 5.99 (H-1') and 7.57 (H-6)

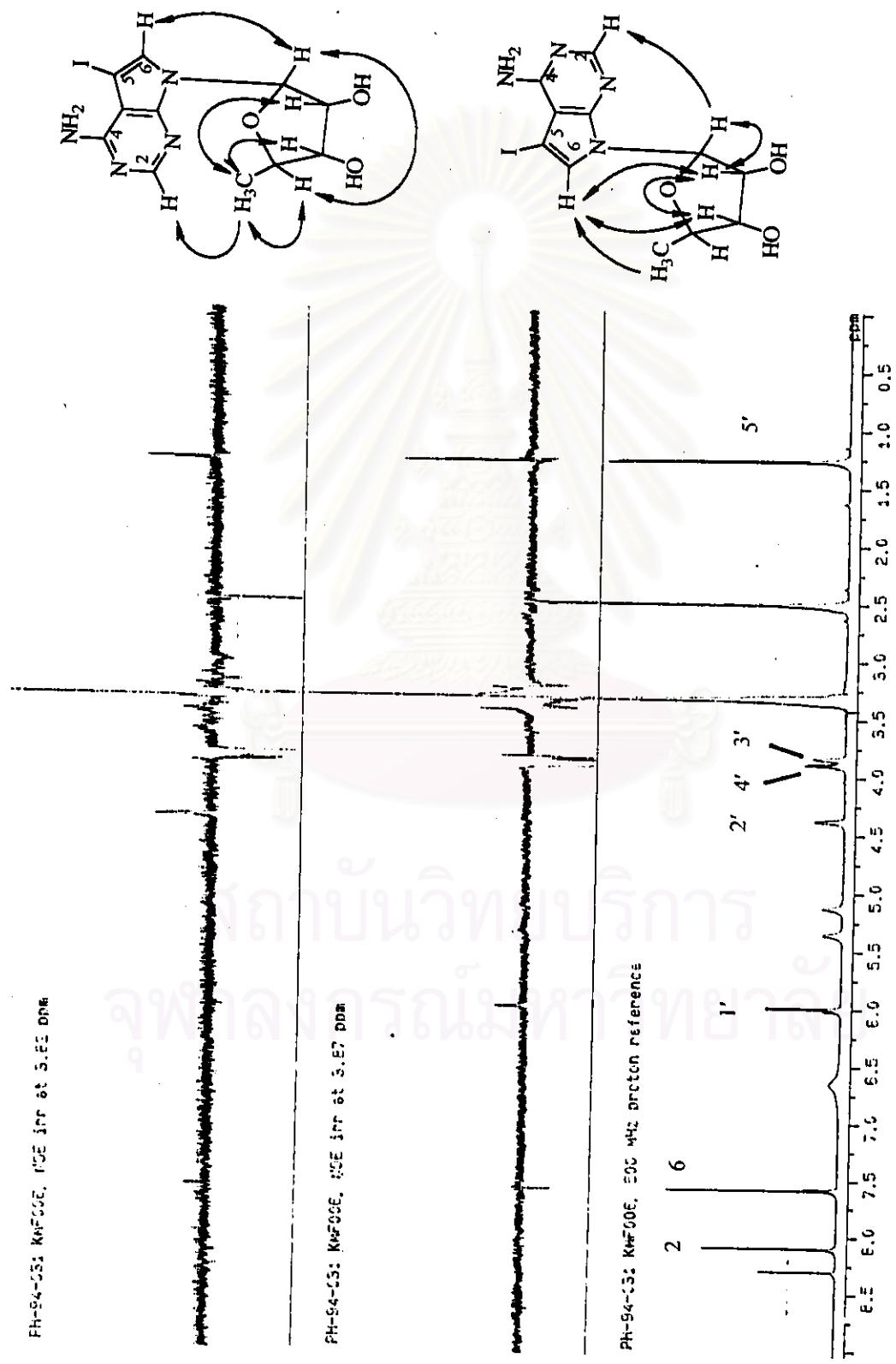


Figure 22. The 500 MHz NOE difference spectrum of compounds KMF006-1 and KMF006-2 (in  $\text{DMSO-d}_6$ ), irradiation at 3.82 ( $\text{H}-3'$ ) and 3.87 ( $\text{H}-4'$ )

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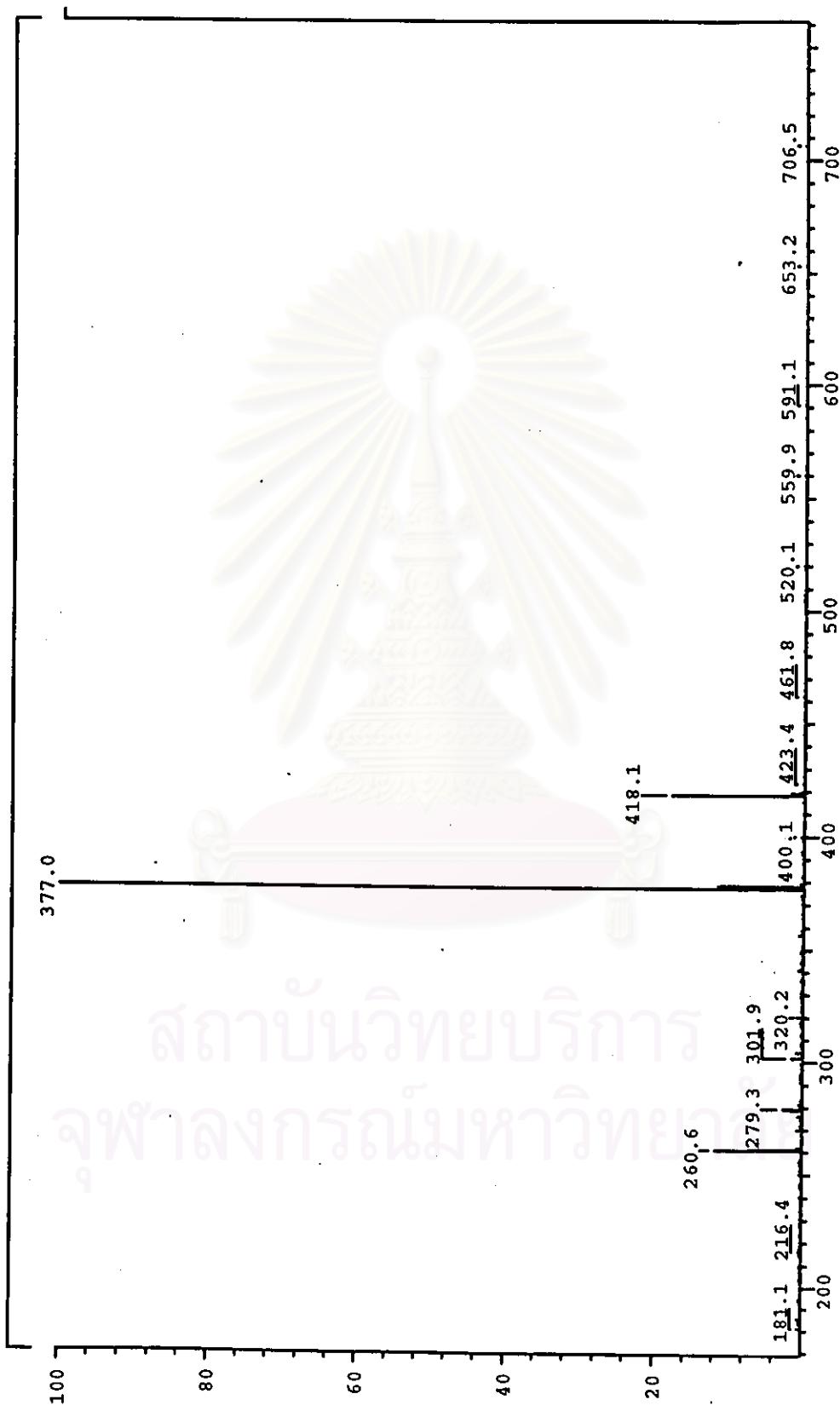


Figure 23. The MS spectrum of compound KMF006-1

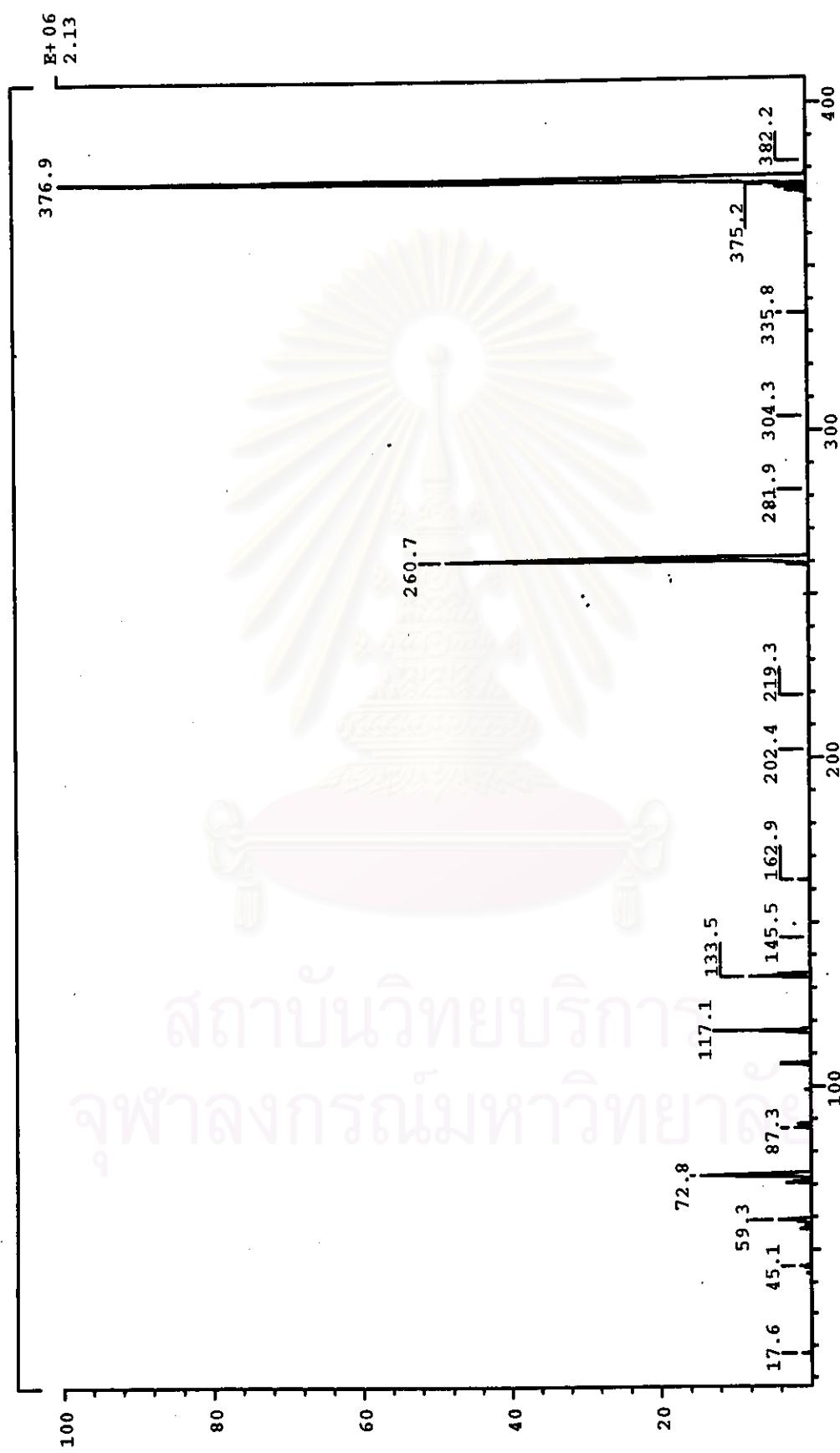


Figure 24. The MS/MS spectrum of compound KMF006-1

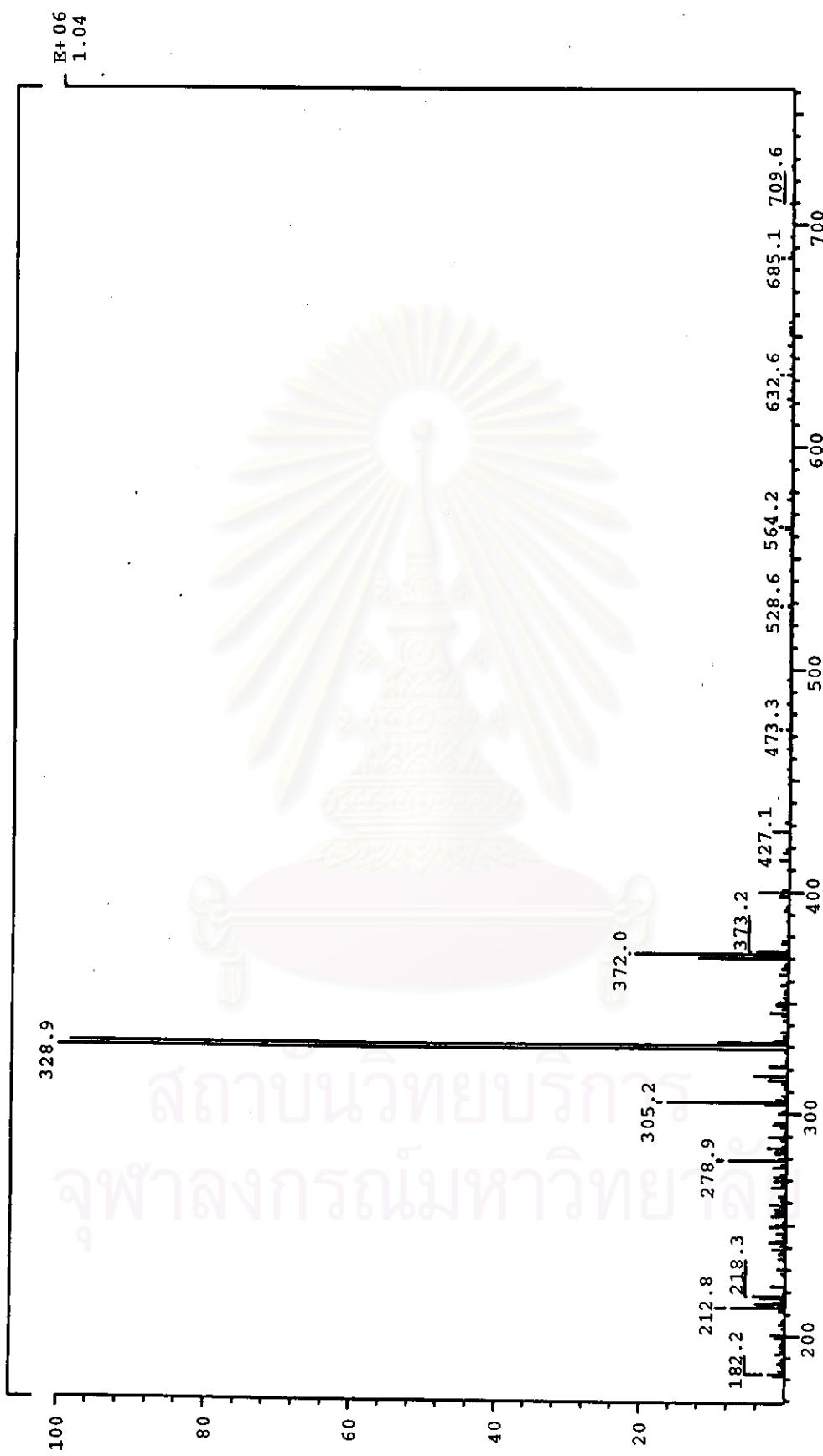


Figure 25. The MS spectrum of compound KMF006-2

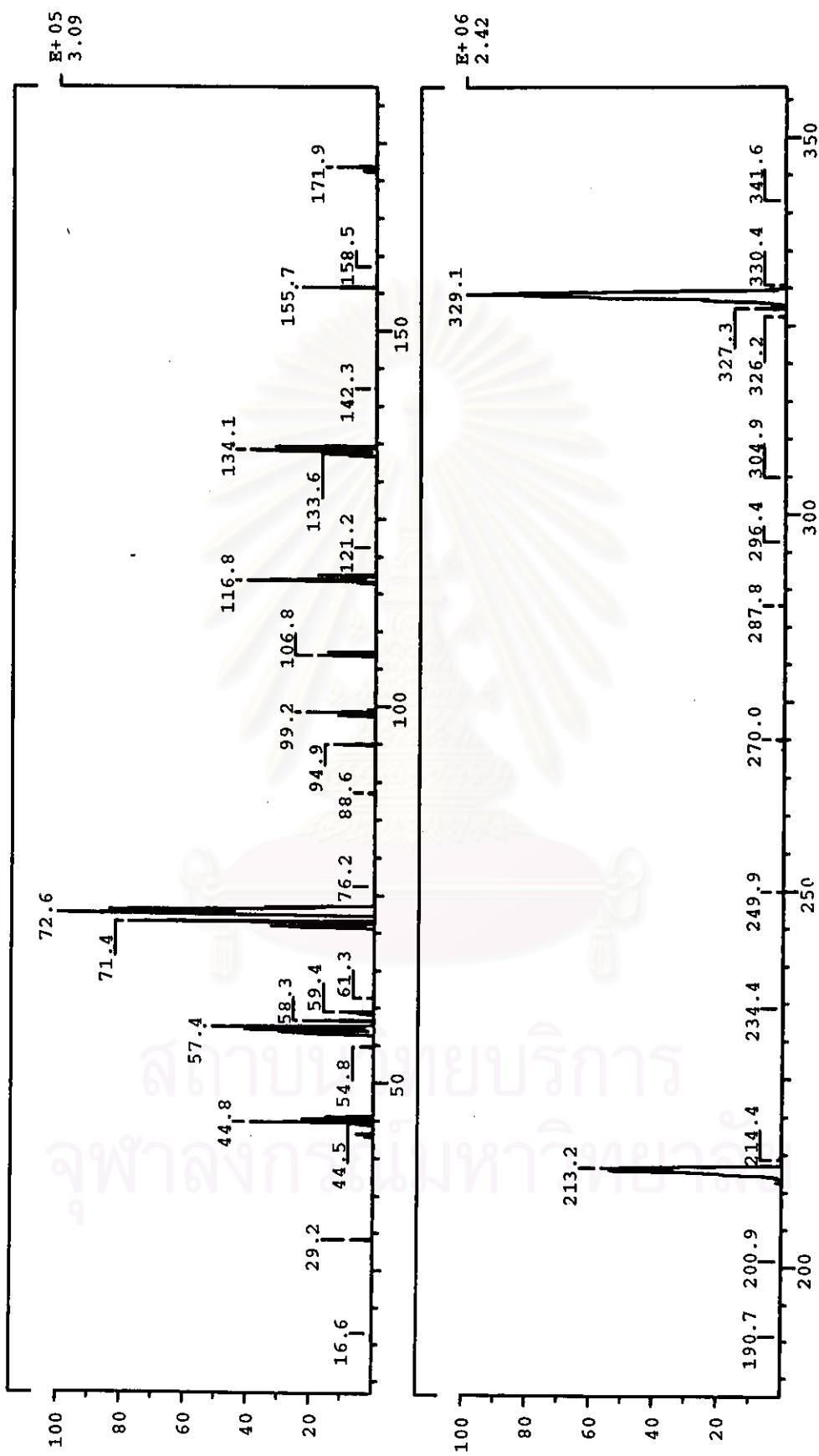


Figure 26. The MS/MS spectrum of compound KMF006-2

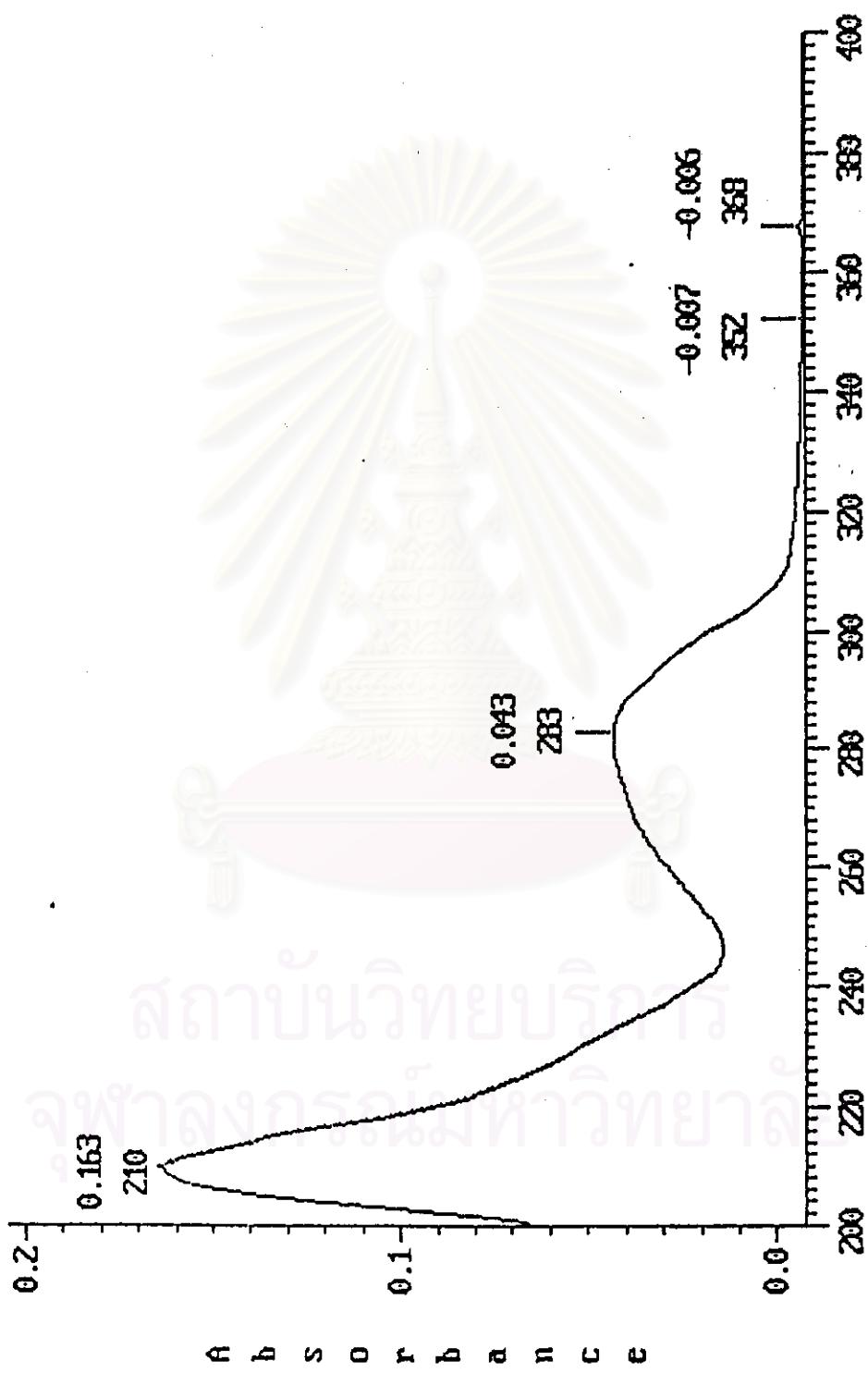


Figure 27. The UV spectrum of compounds KMF006-1 and KMF006-2

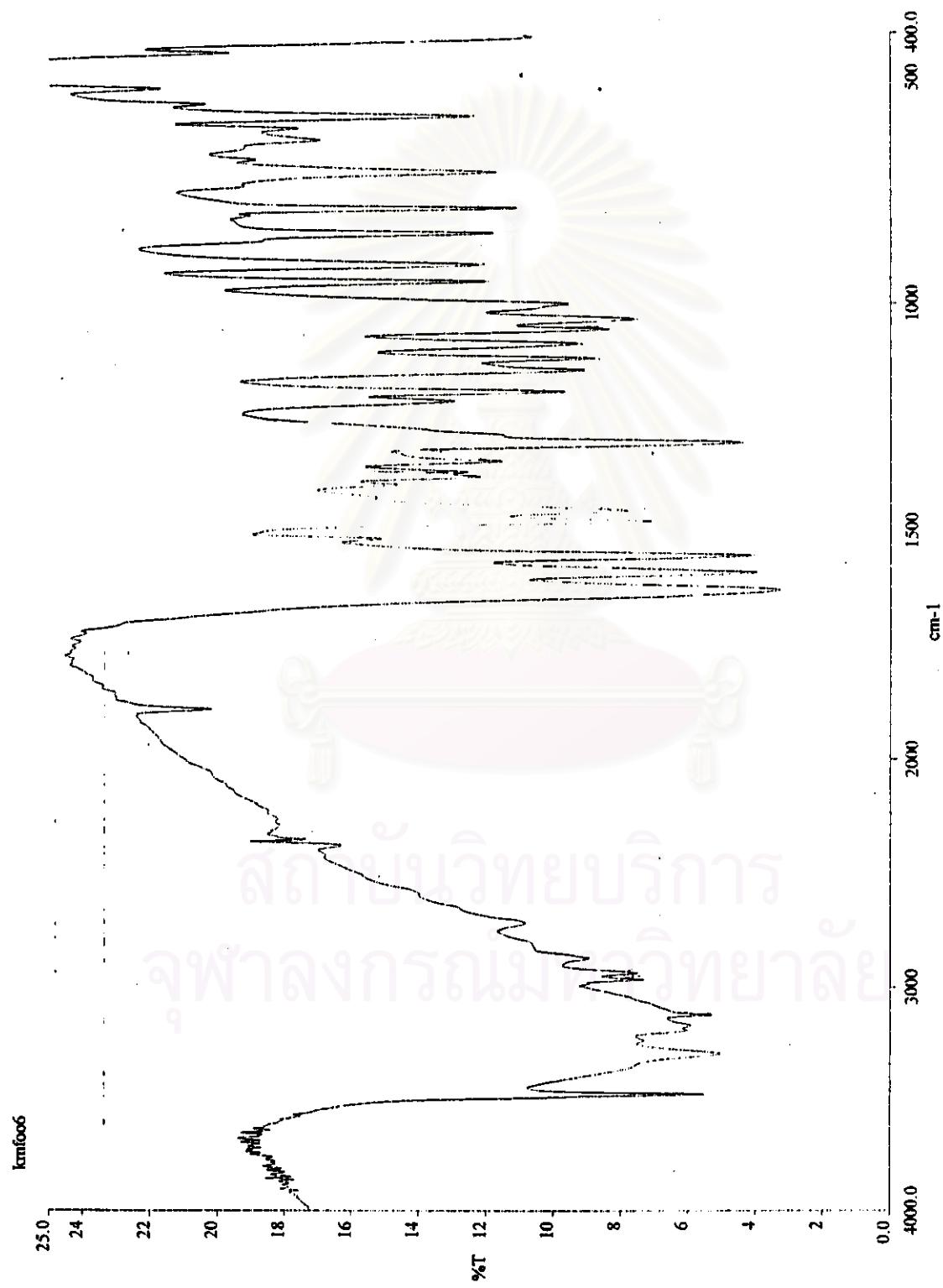


Figure 28. The IR spectrum of compounds KMF006-1 and KMF006-2 (KBr disc)

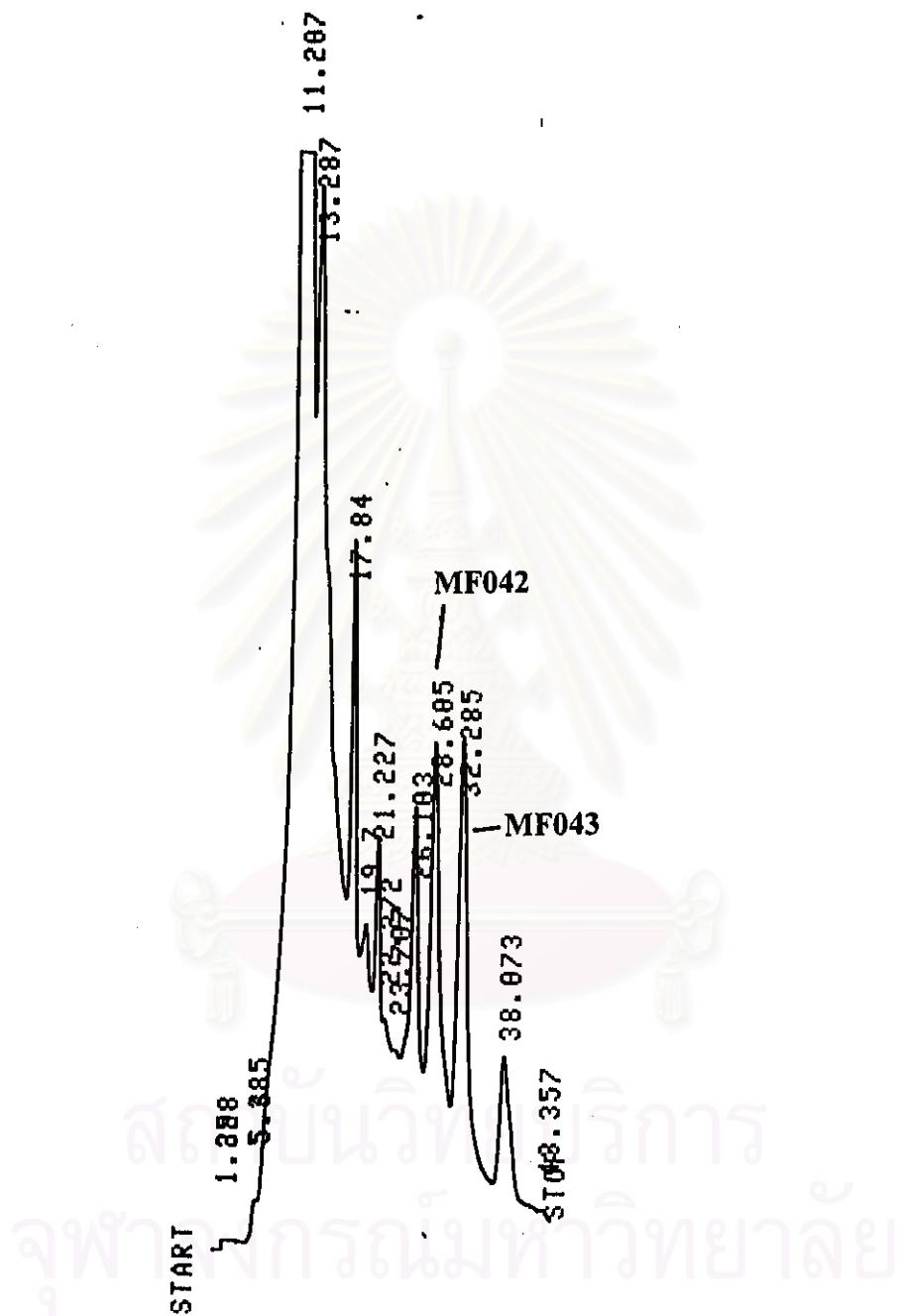


Figure 29. The HPLC chromatogram of the fraction MF029

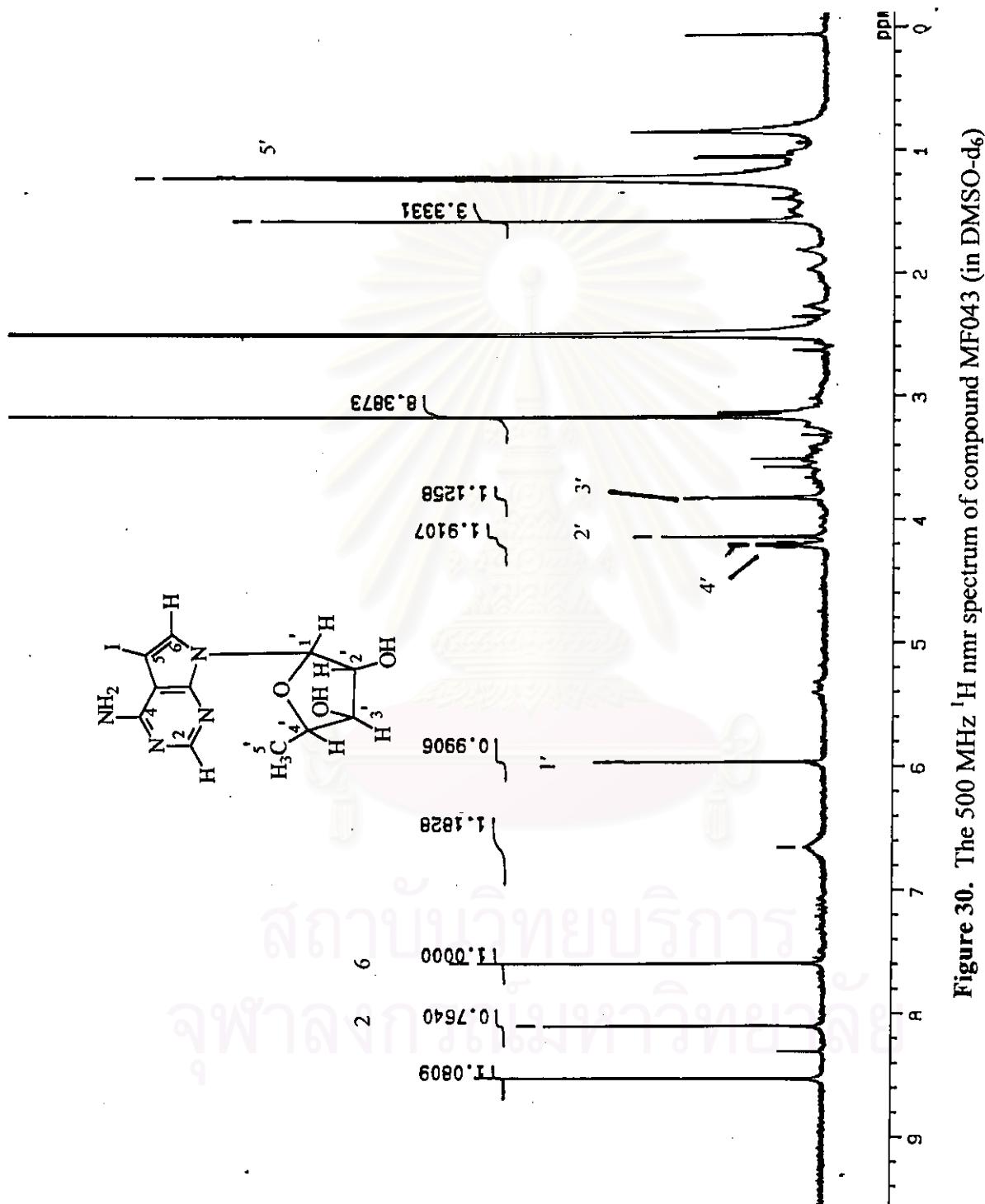


Figure 30. The 500 MHz  $^1\text{H}$  nmr spectrum of compound MF043 (in  $\text{DMSO-d}_6$ )

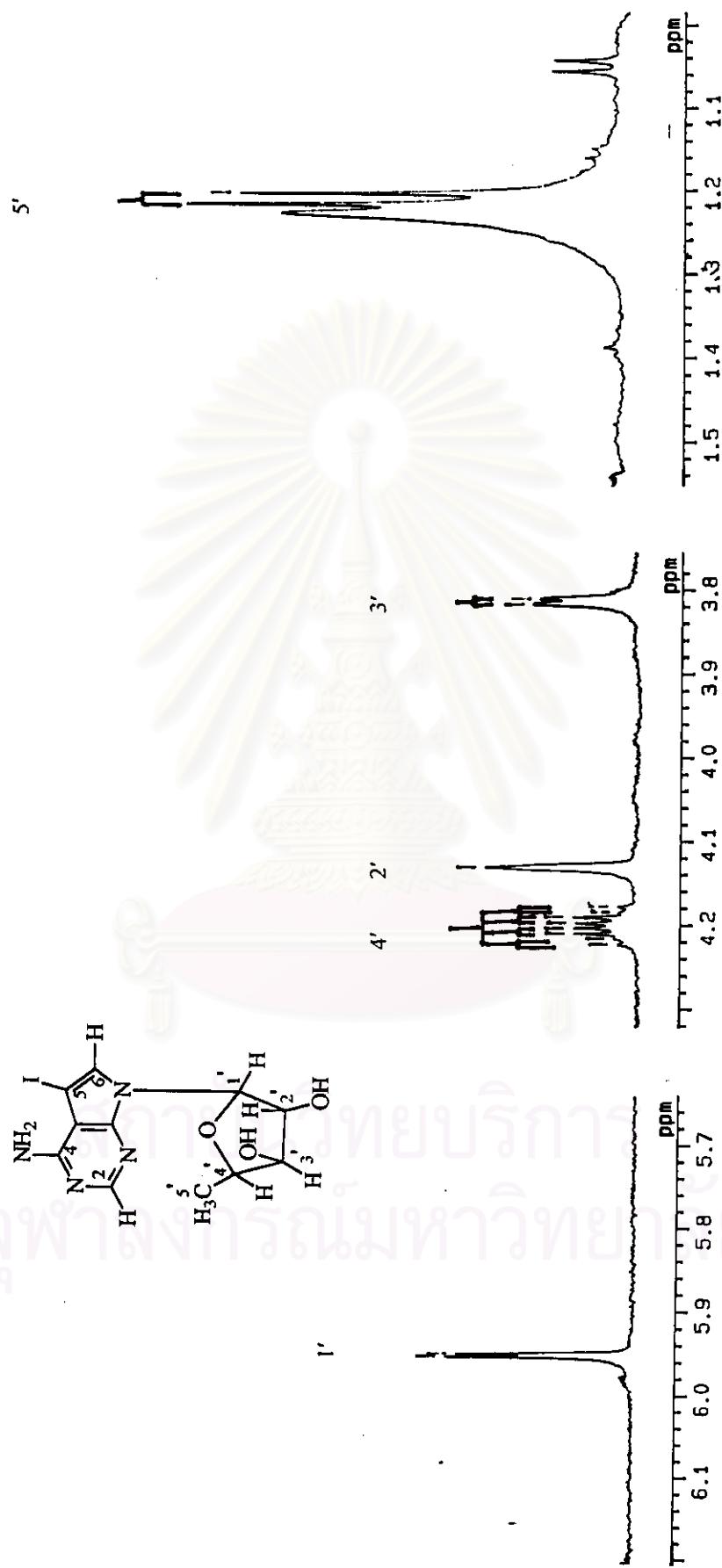


Figure 31. The 500 MHz  $^1\text{H}$  nmr spectrum of compound MF043 (in  $\text{DMSO-d}_6$ ) (expanded from 1.00-6.20 ppm)

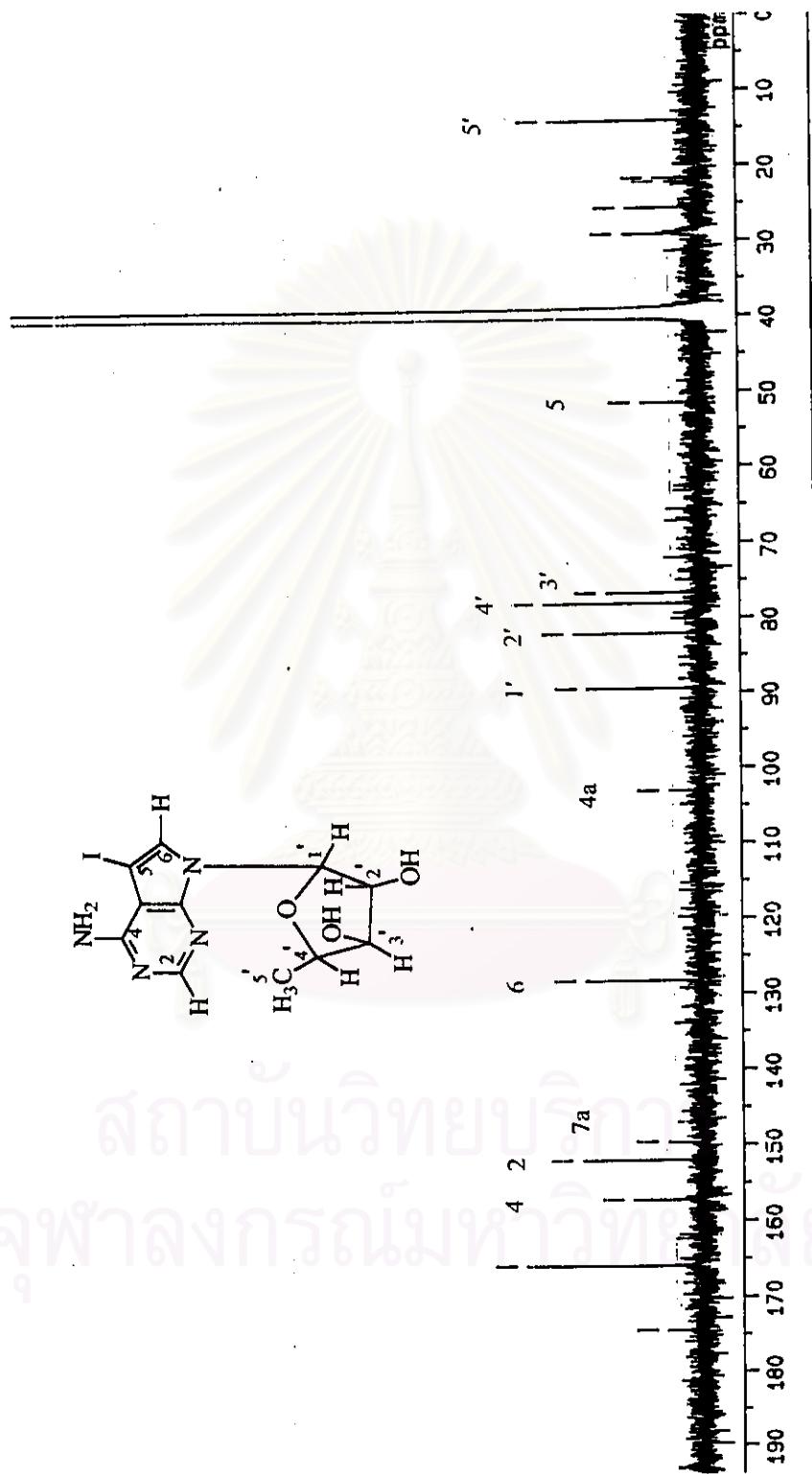


Figure 32. The 125 MHz  $^{13}\text{C}$  nmr spectrum of compound MF043 (in DMSO- $d_6$ )

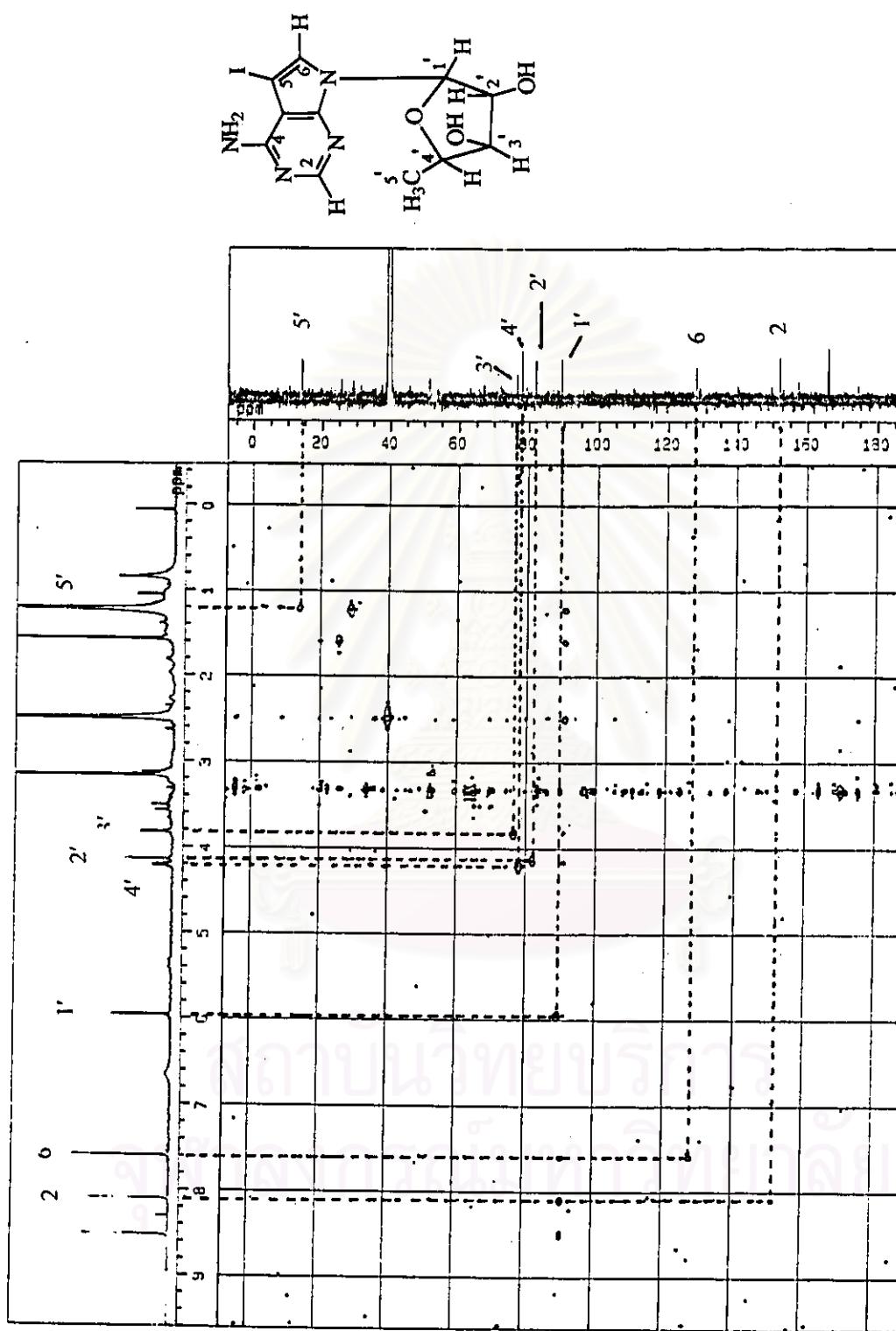


Figure 33. The 500 MHz HSQC spectrum of compound MF043 (in  $\text{DMSO-d}_6$ )

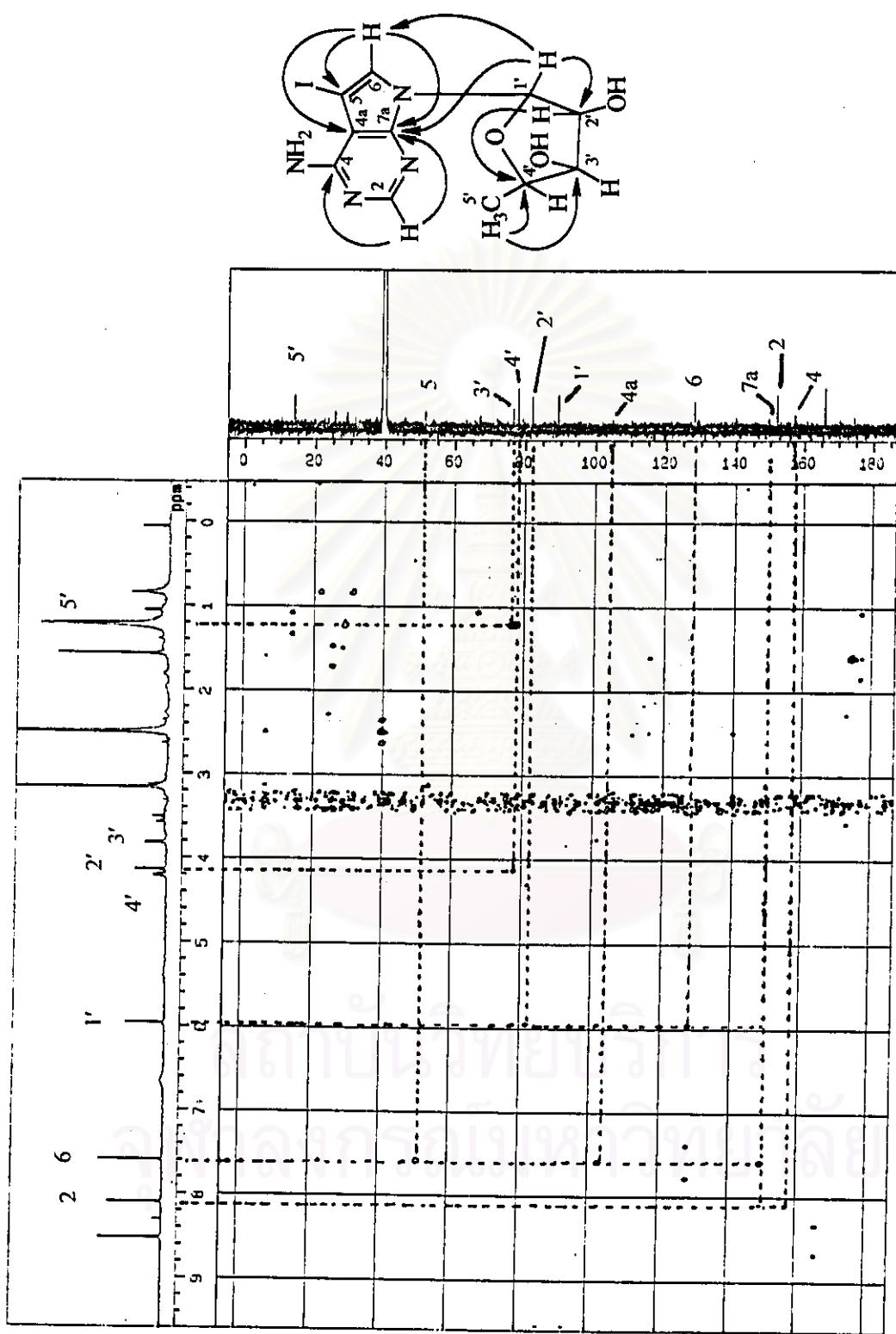


Figure 34. The 500 MHz HMBC ( $J = 8$  Hz) spectrum of compound MF043 (in DMSO- $d_6$ )

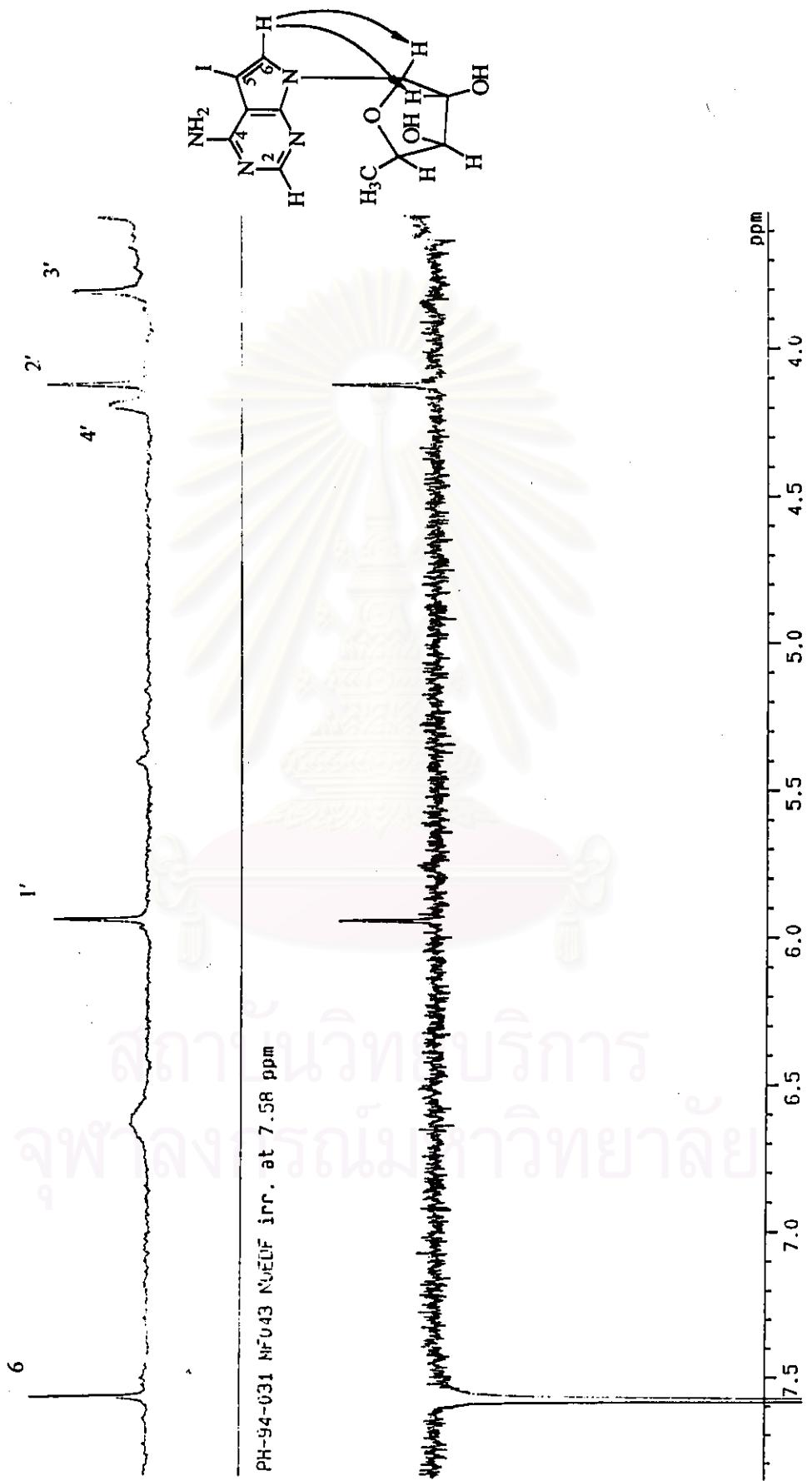


Figure 35. The 500 MHz NOE difference spectrum of compound MF043 (in  $\text{DMSO-d}_6$ ), irradiation at 7.58 (H-6)

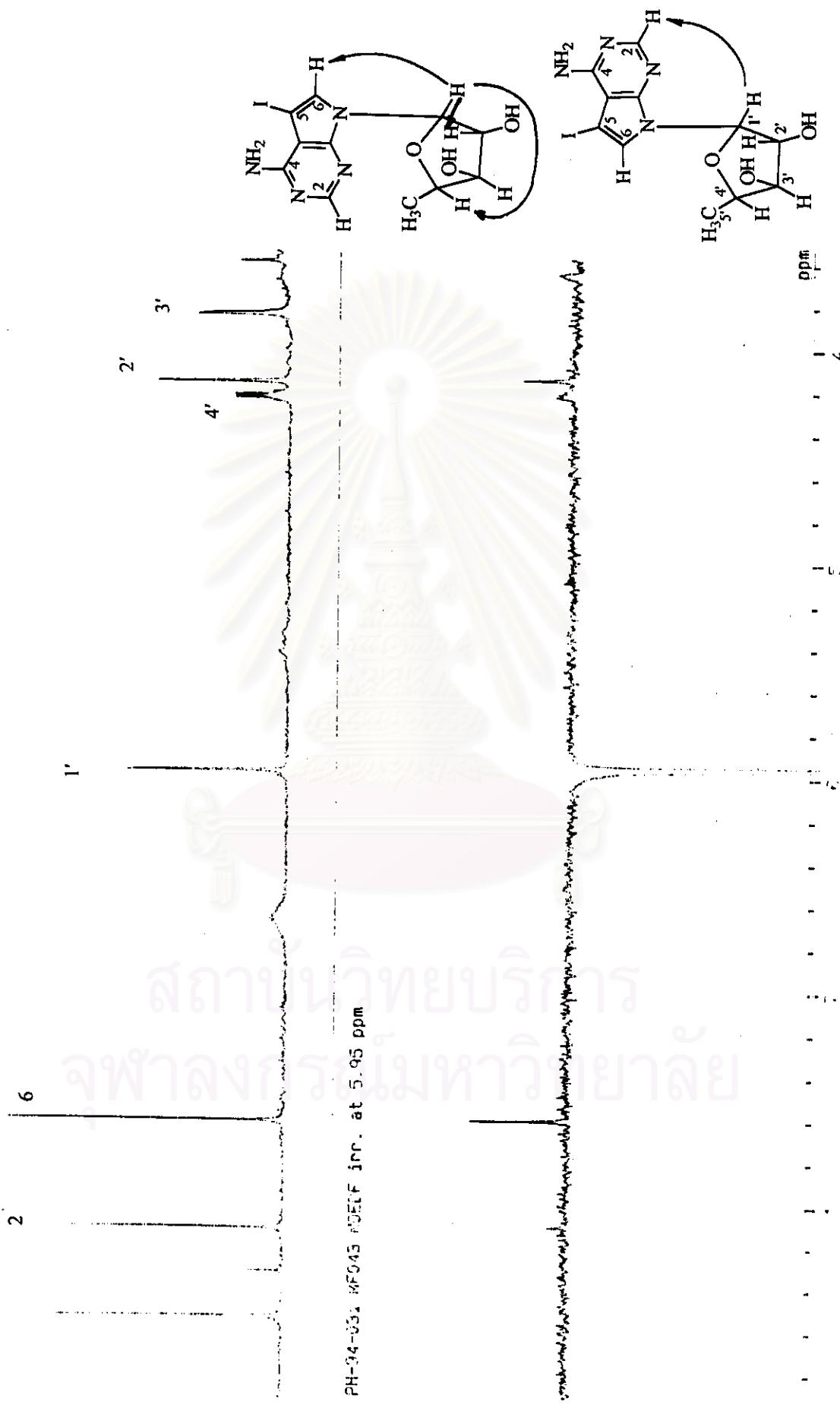
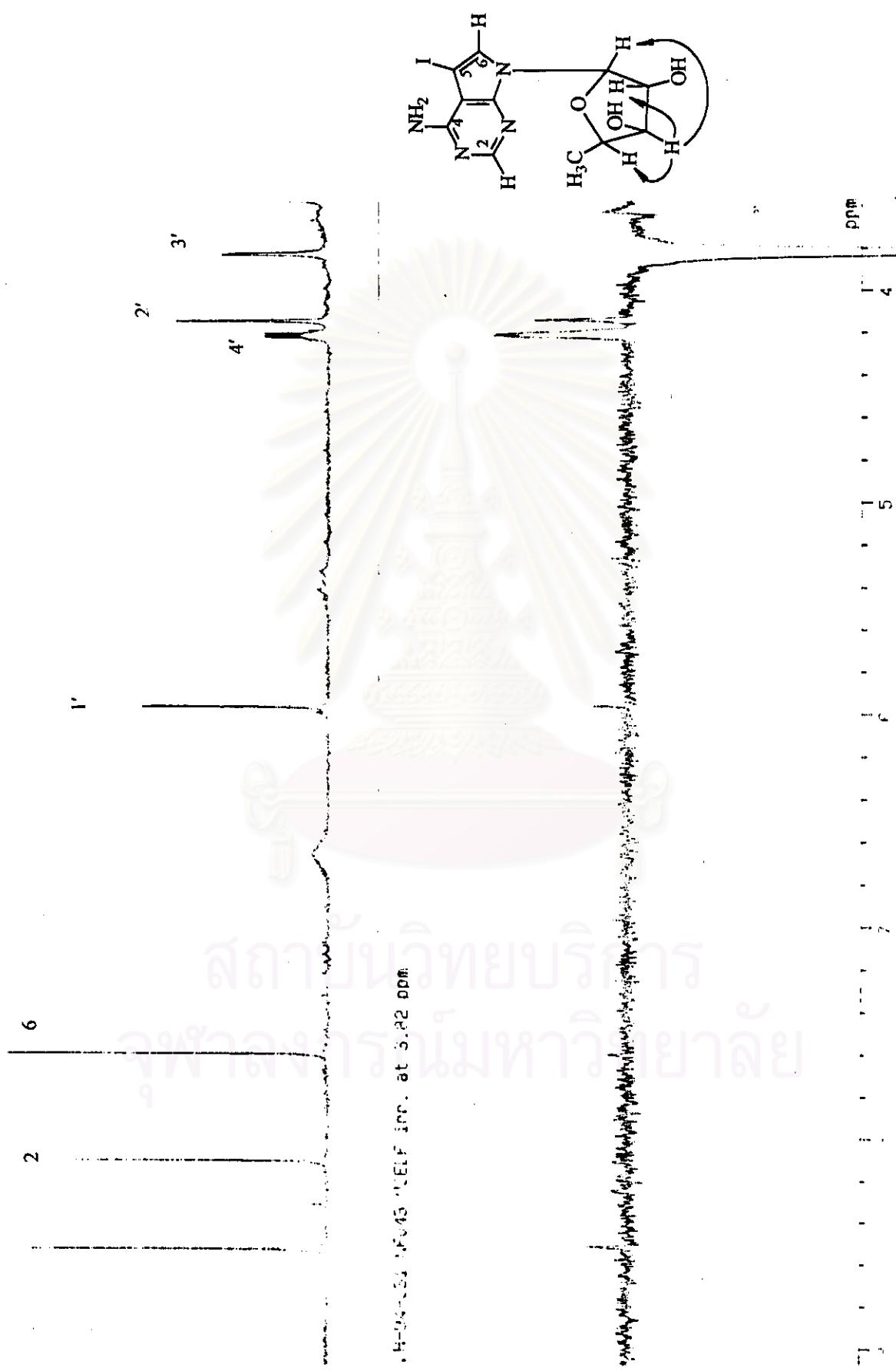


Figure 36. The 500 MHz NOE difference spectrum of compound MF043 (in DMSO-d<sub>6</sub>), irradiation at 5.95 (H-1')



**Figure 37.** The 500 MHz NOE difference spectrum of compound MF043 (in DMSO-d<sub>6</sub>), irradiation at 3.82 (H-3')

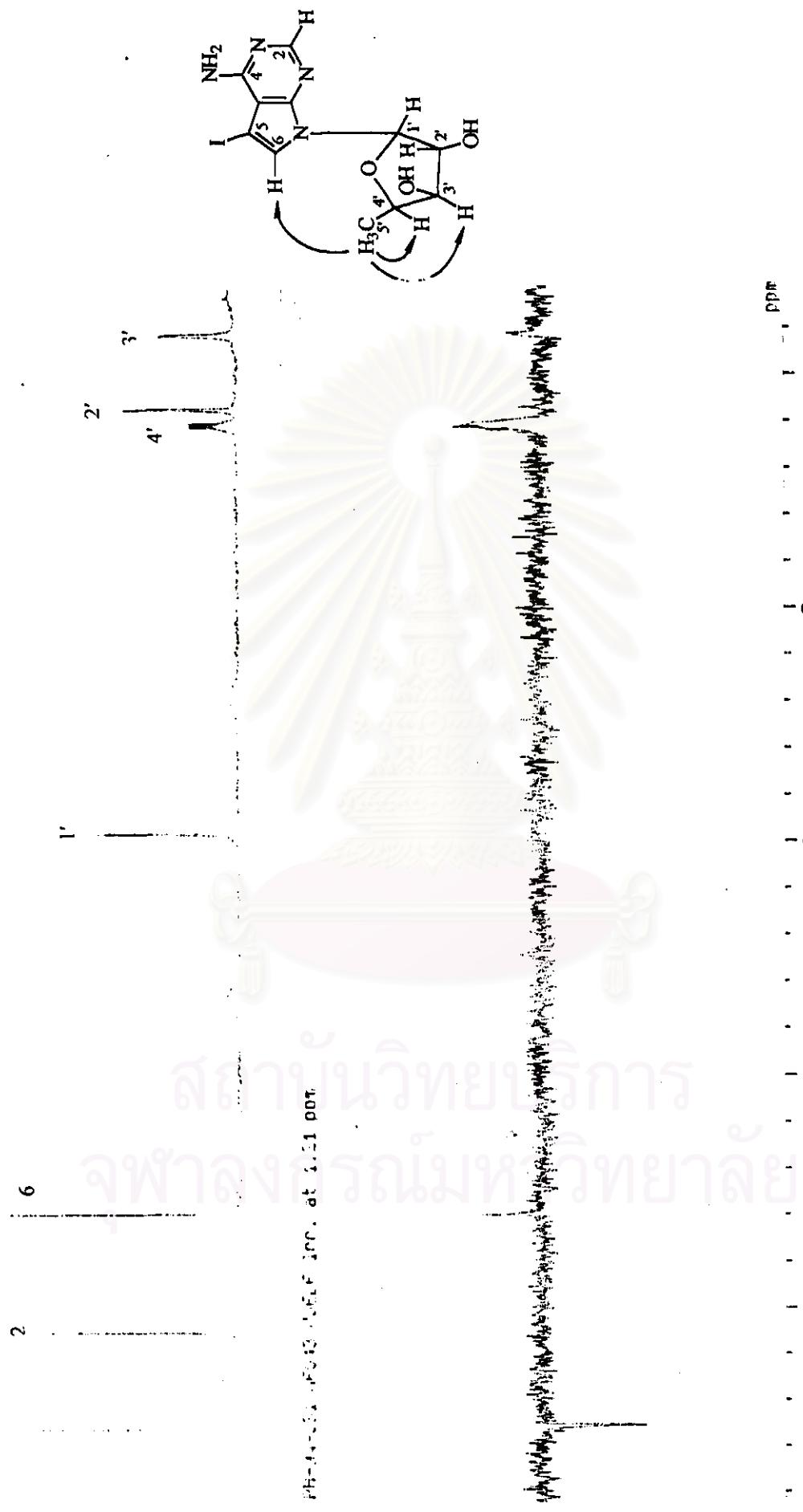


Figure 38. The 500 MHz NOE difference spectrum of compound MF043 (in DMSO-d<sub>6</sub>), irradiation at 1.21 (5'-CH<sub>3</sub>)

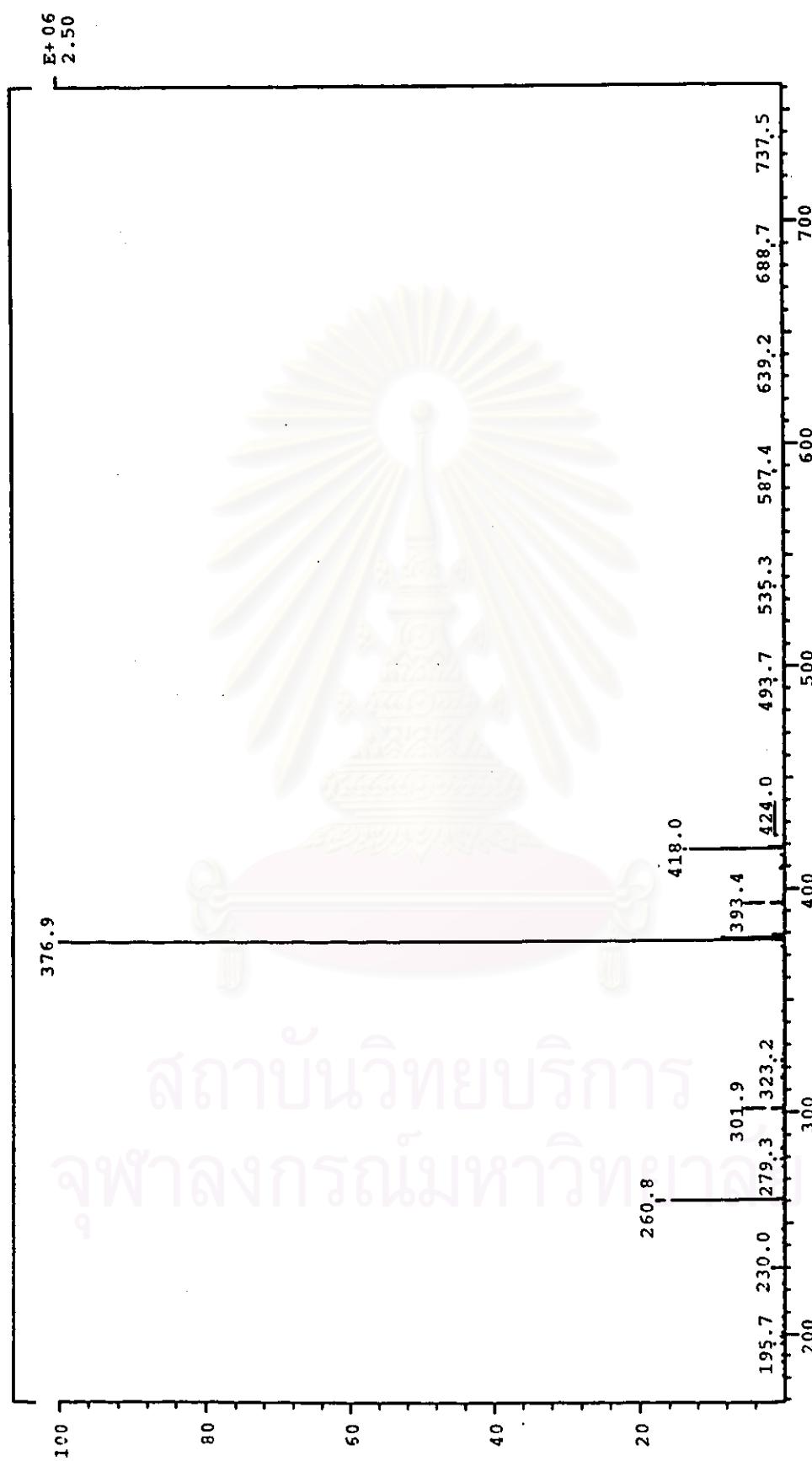


Figure 39. The MS spectrum of compound MF043



Figure 40. The MS/MS spectrum of compound MF043

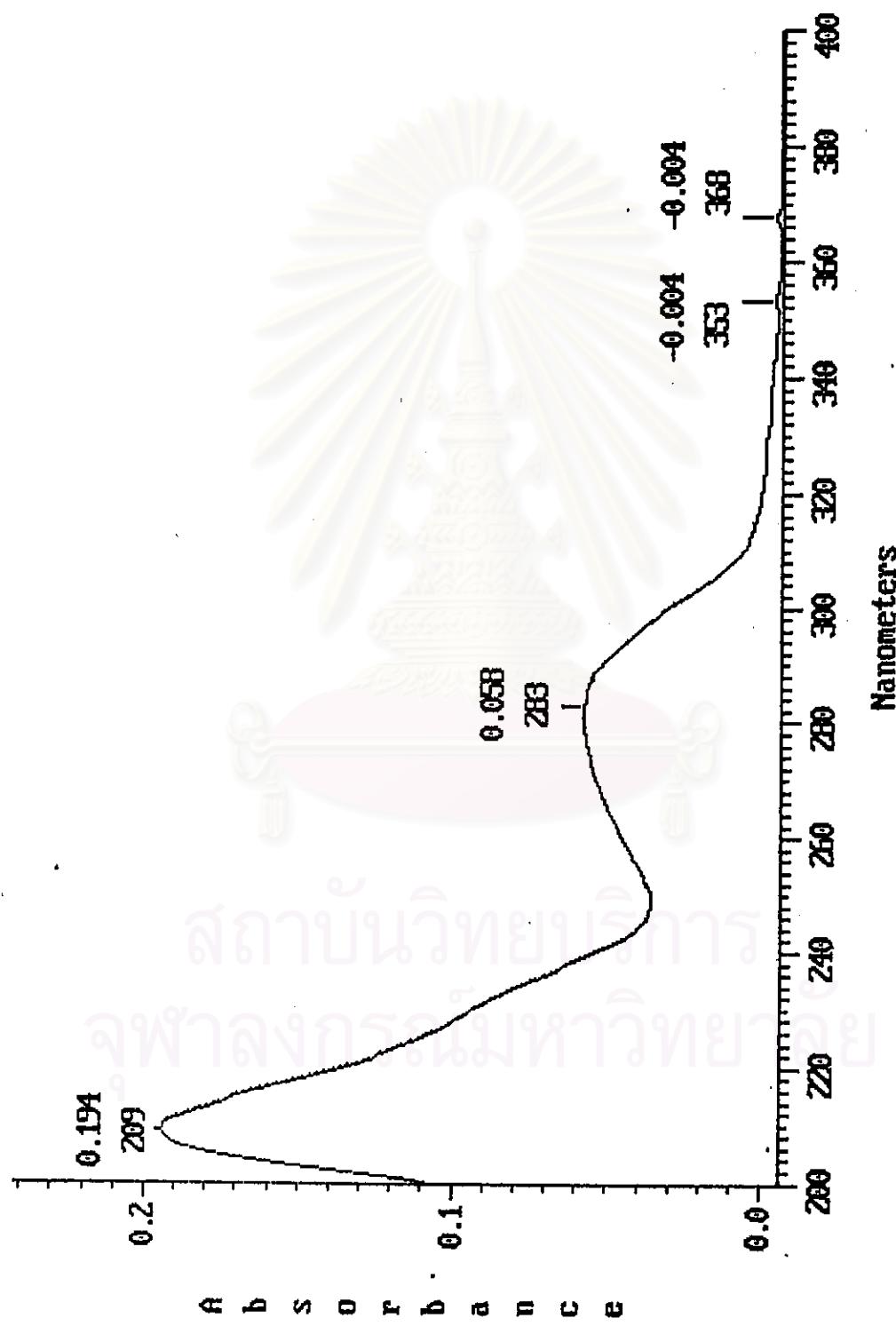


Figure 41. The UV spectrum of compound MF043

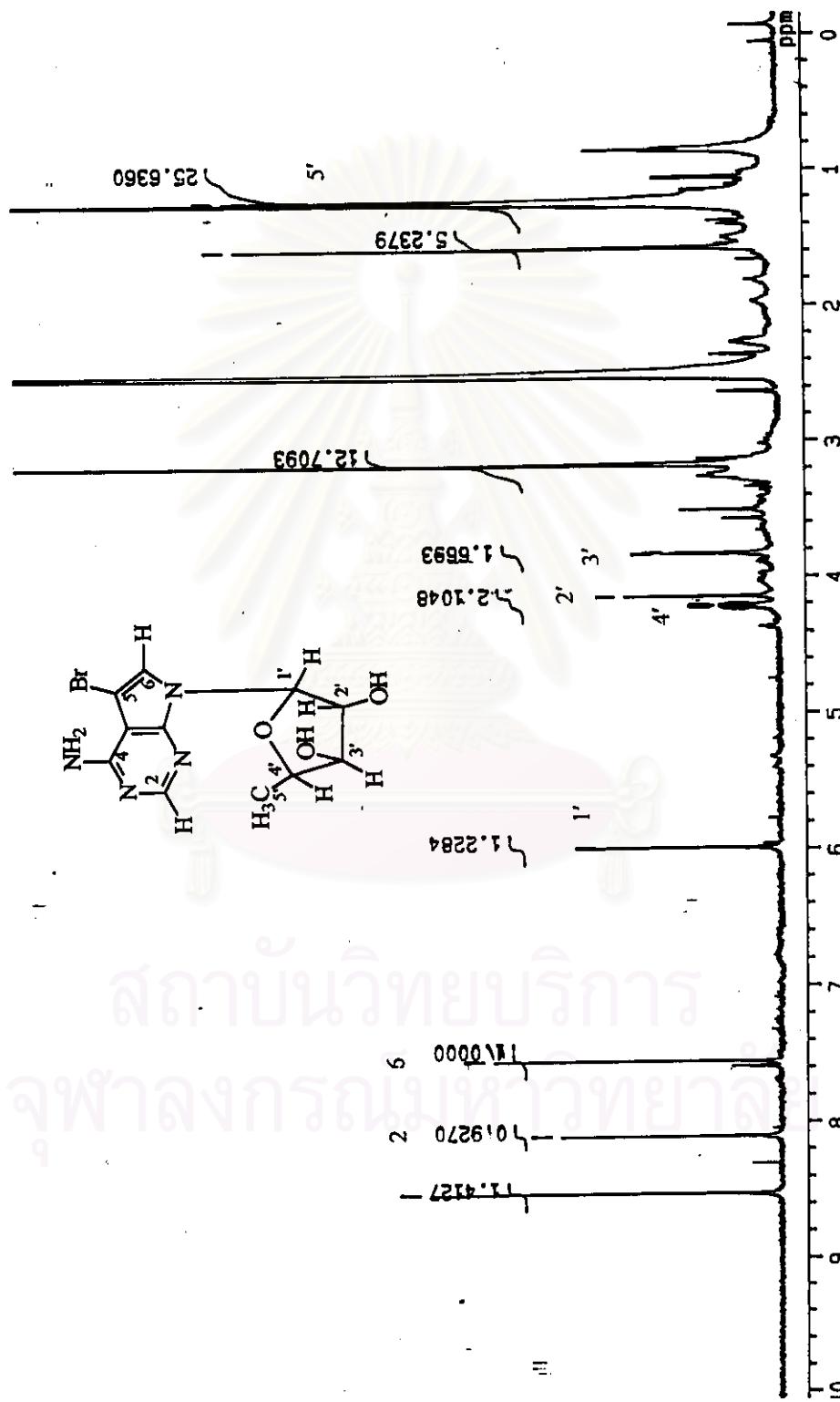


Figure 42. The 500 MHz  $^1\text{H}$  nmr spectrum of compound MF042 (in  $\text{DMSO-d}_6$ )

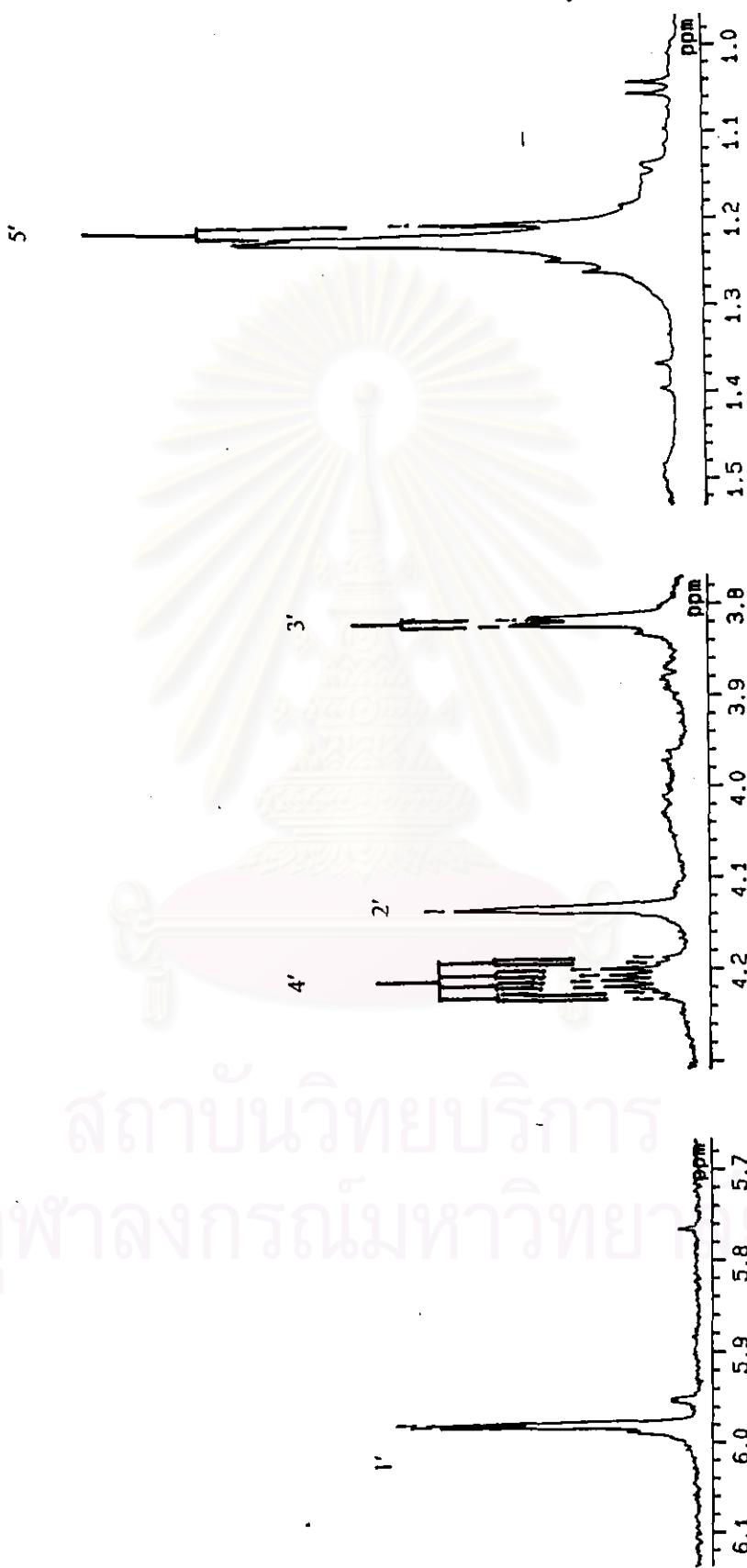


Figure 43. The 500 MHz  $^1\text{H}$  nmr spectrum of compound MF042 (in  $\text{DMSO-d}_6$ ) (expanded from 1.00-6.10 ppm)

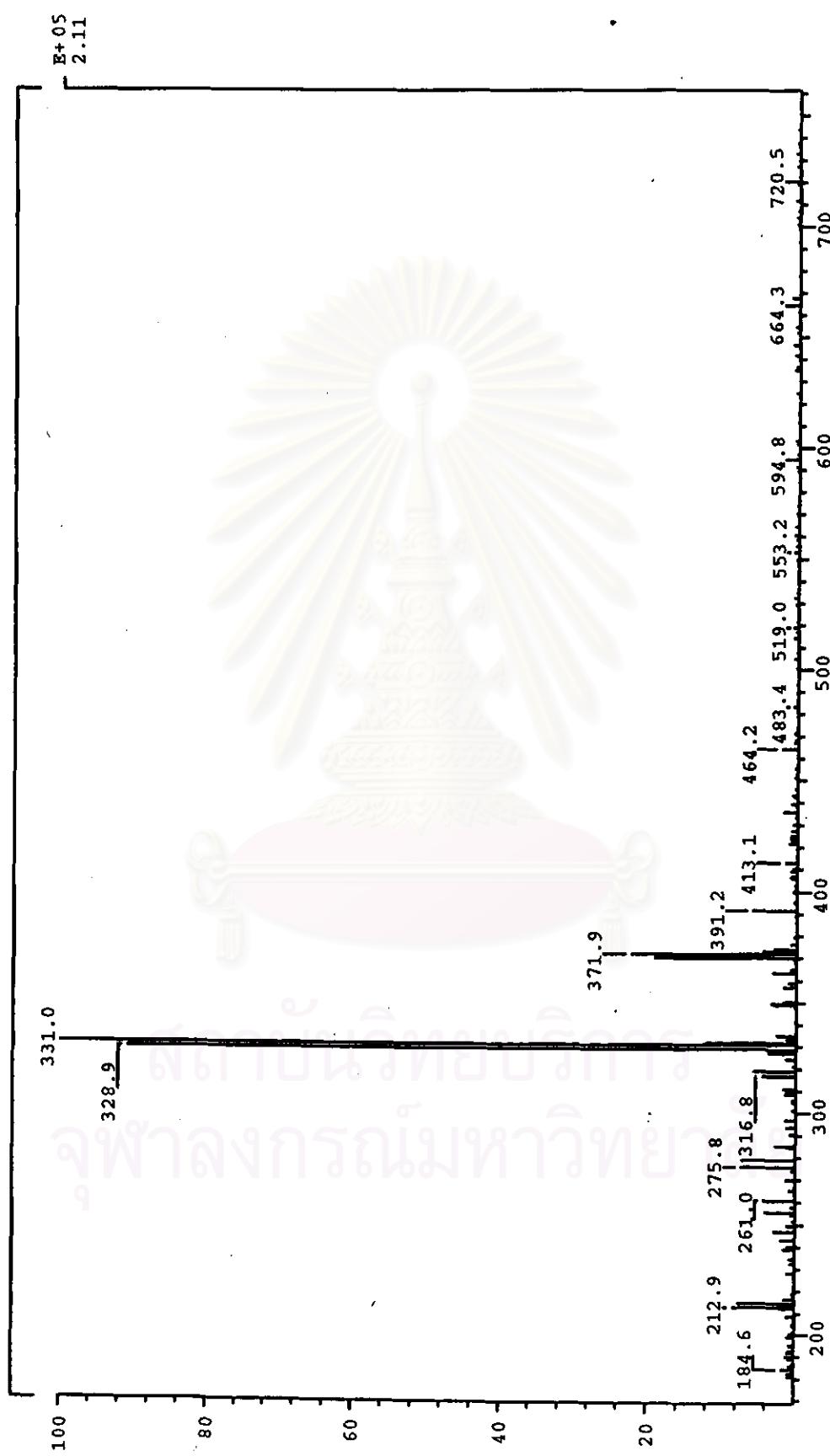


Figure 44. The MS spectrum of compound MF042

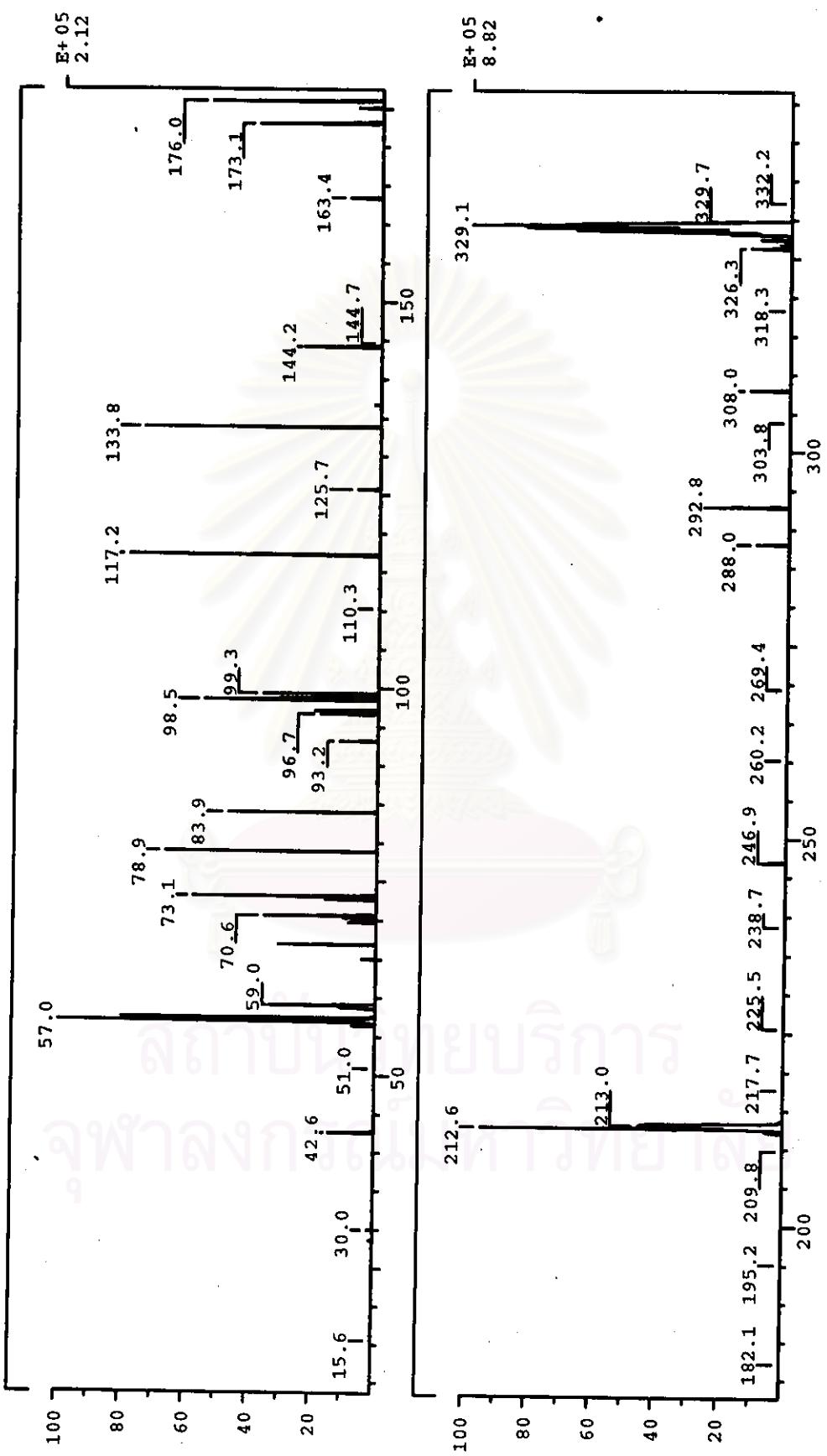


Figure 45. The MS/MS spectrum of compound MF042

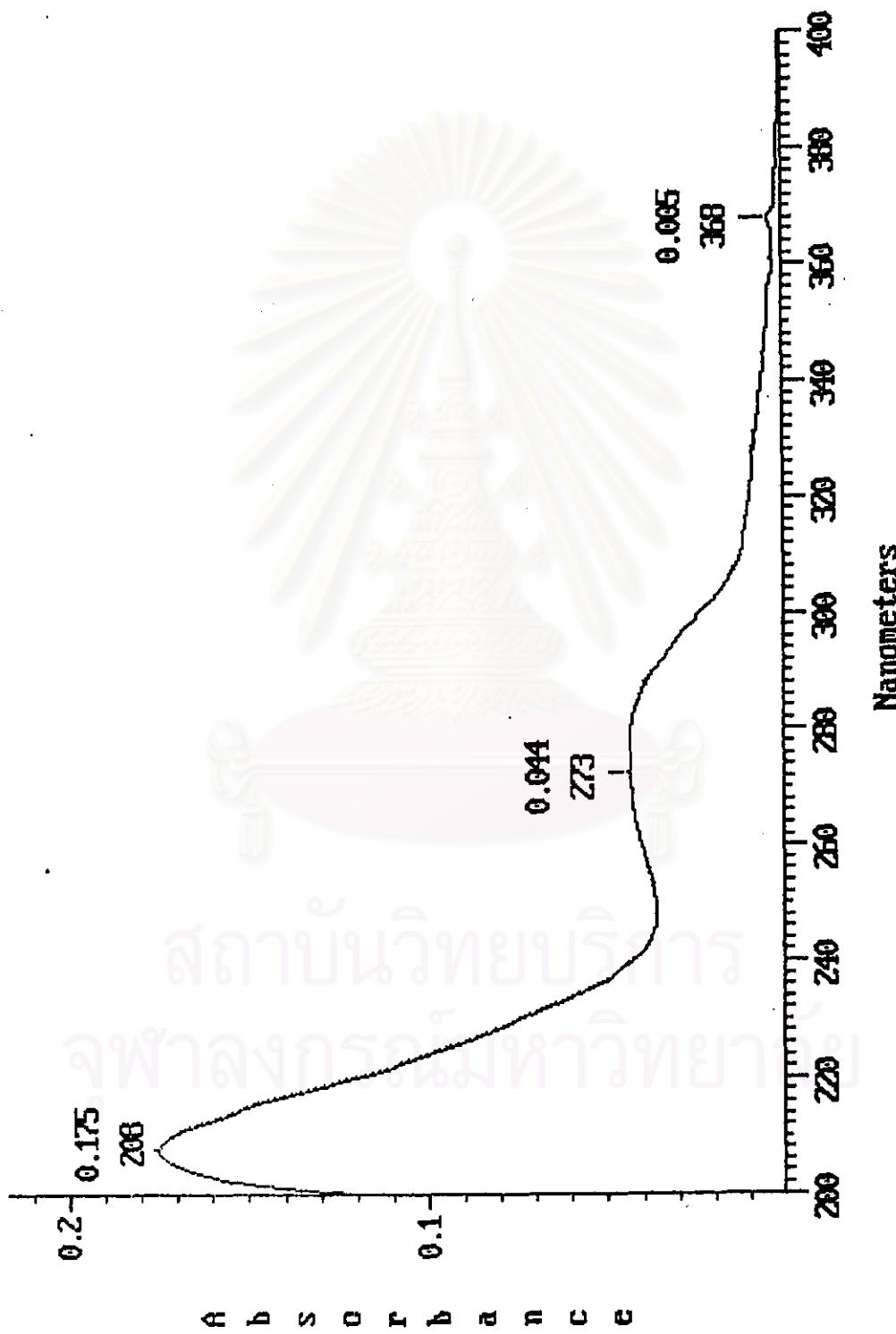


Figure 46. The UV spectrum of compound MF042

## VITA

Mr. Pongsatorn Limsiriwong was born on April 17, 1968 in Bangkok, Thailand. He received his Bachelor of Science in Pharmacy in 1991 from the Faculty of Pharmacy, Chiangmai University, Thailand. Between 1991 and 1994, He was a pharmacist in Khao Sukim Hospital, Chantaburi, Thailand.



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