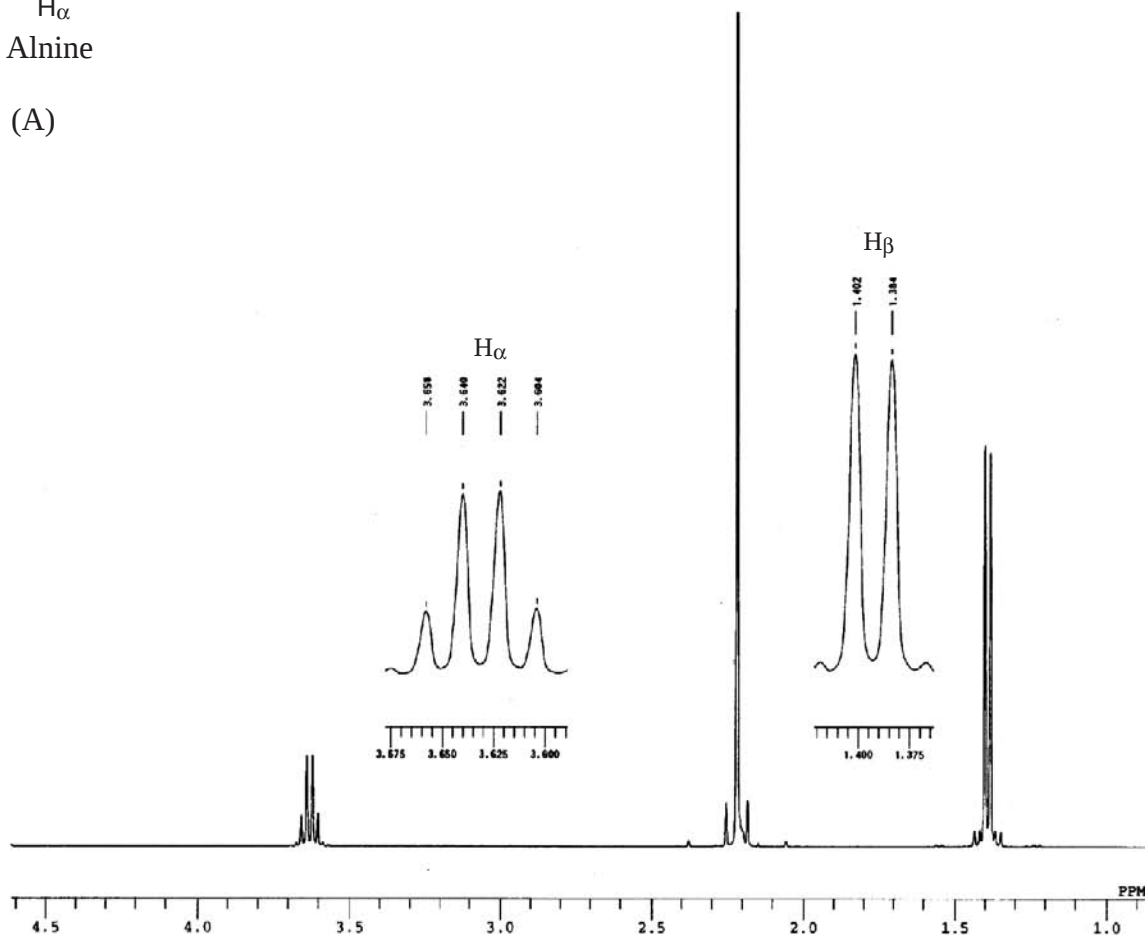


Alnine

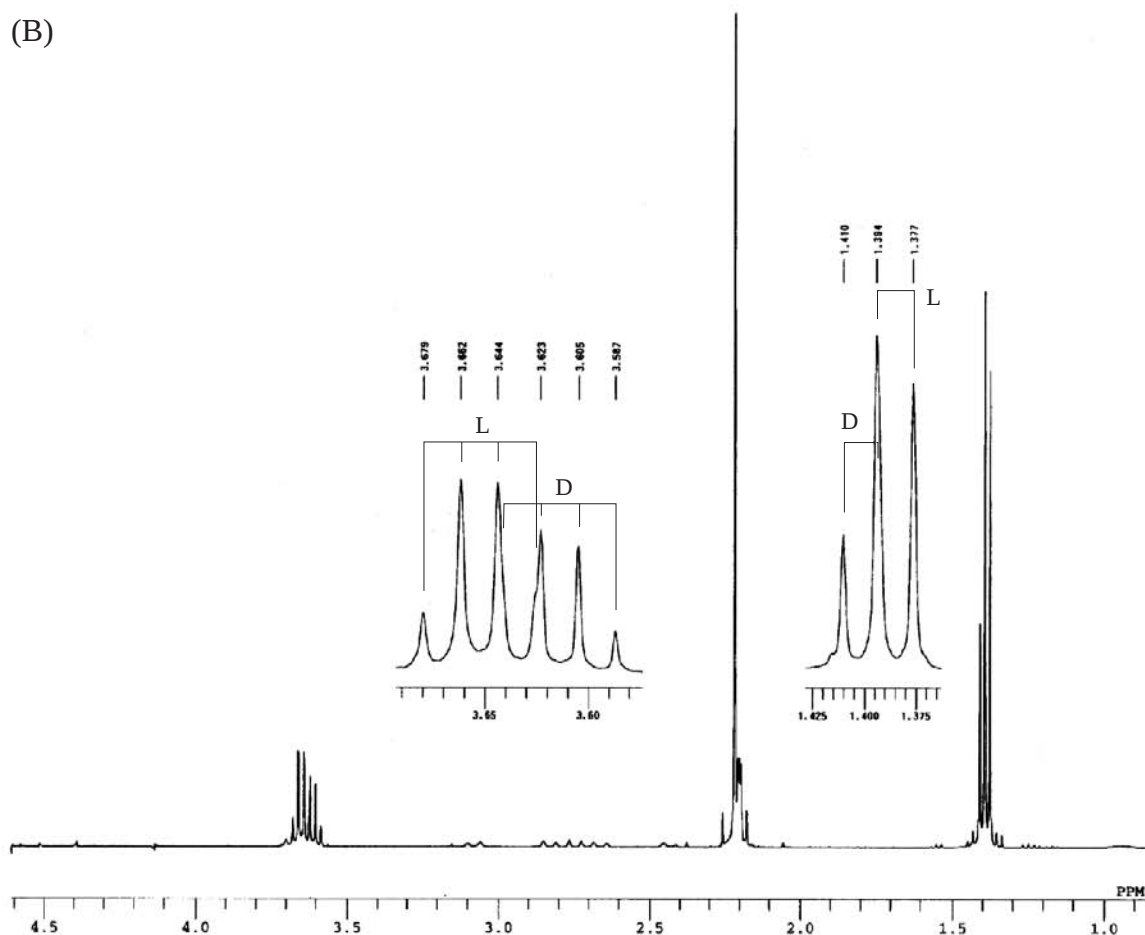
(A)



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DFILE  E:\inamoto\Sm-Ala\AI092.al
COMNT  ALANINE-ONLY4/30
DATIM
OBNUC  1H
EXMOD  NON
OBFREQ 399.65 MHz
OBSET  124.00 KHz
OBFIN  10300.0 Hz
POINT  16384
FREQU  4006.4 Hz
SCANS  16
ACQTM  4.089 sec
PD      3.270 sec
FWL     5.7 us
IRNUC  1H
CTEMP  27.0 c
SLVNT  D2O
EXREF  2.22 ppm
BF      0.12 Hz
RGAIN  16
  
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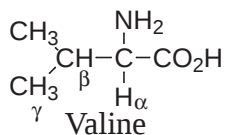
(B)



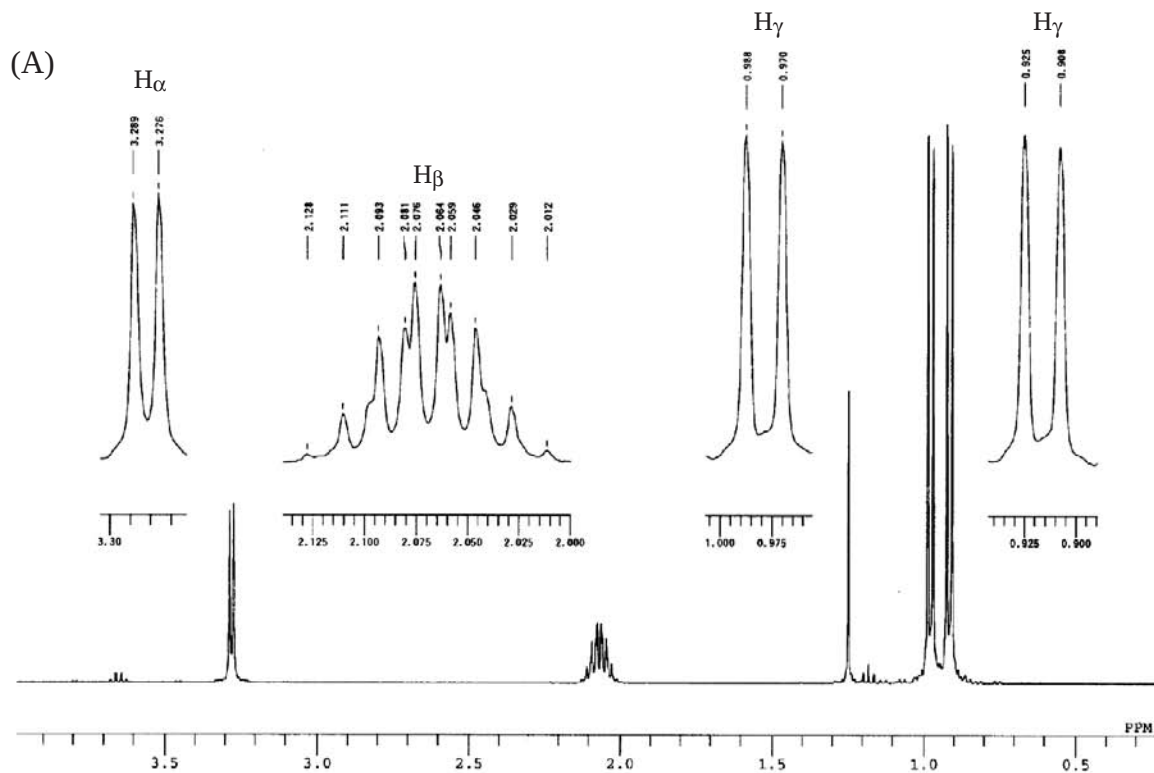
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EXMOD  NON
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OBSET  124.00 KHz
OBFIN  10300.0 Hz
POINT  16384
FREQU  4006.4 Hz
SCANS  16
ACQTM  4.089 sec
PD      3.270 sec
FWL     5.7 us
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CTEMP  27.0 c
SLVNT  D2O
EXREF  2.22 ppm
BF      0.12 Hz
RGAIN  12
  
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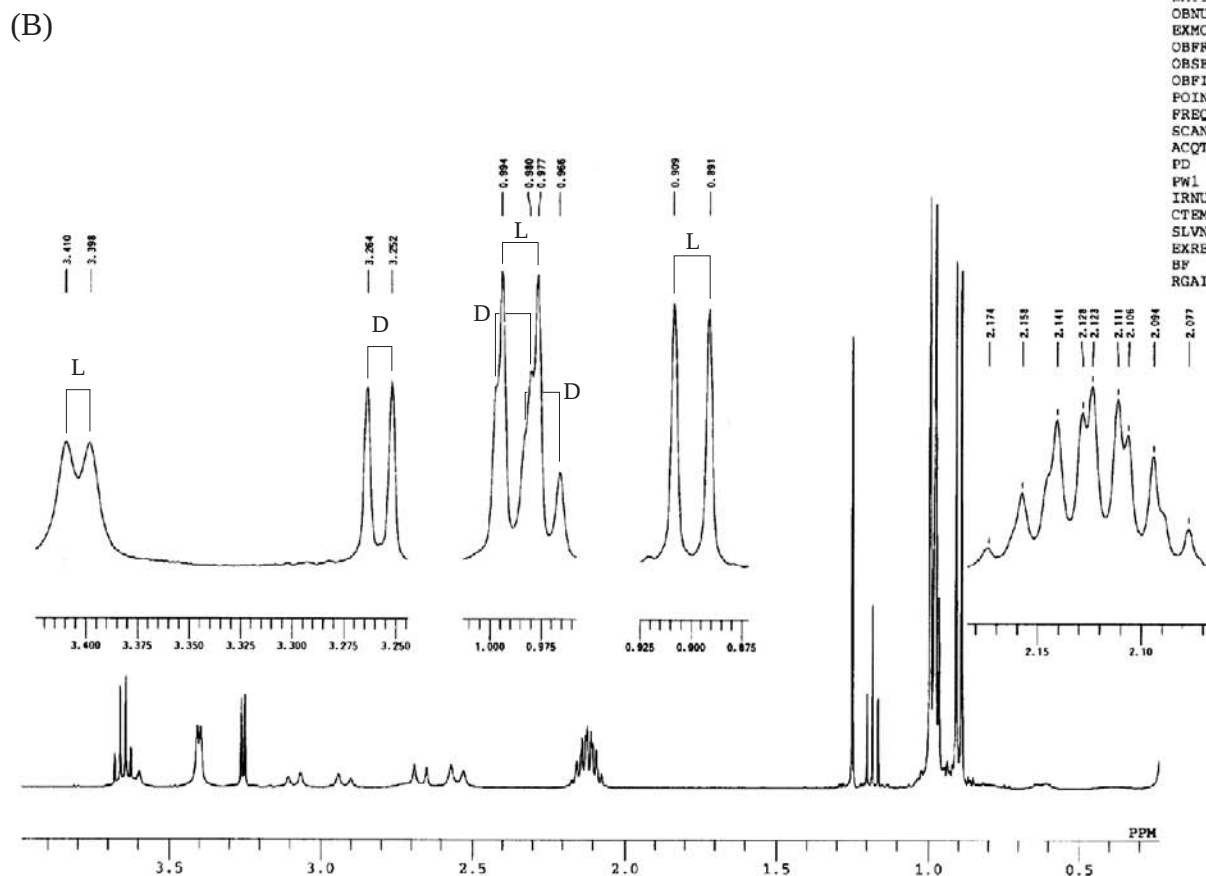
¹H NMR spectrum (400 MHz) of 0.06 M alanine (D/L = 1/2) in D₂O at 25 °C; (A) no reagent, pH 10.4, (B) [(R)-1]/[alanine] = 0.10, pH 10.3.



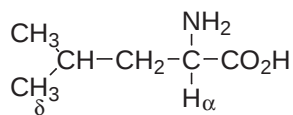
DFILE E:\inamoto\Sm-Val\AI112.al
 COMMT VALINE-ONLYIIMAY13
 DATIM
 OBNUC 1H
 EXMOD NON
 OBFREQ 399.65 MHz
 OBSET 124.00 KHz
 OBFIN 10300.0 Hz
 POINT 16384
 FREQU 4006.4 Hz
 SCANS 16
 ACQTM 4.089 sec
 PD 3.270 sec
 PW1 5.7 us
 IRNUC 1H
 CTEMP 27.0 c
 SLVNT D2O
 EXREF 1.25 ppm
 BF 0.12 Hz
 RGAIN 14



DFILE E:\inamoto\Sm-Val\AI116.al
 COMMT VALINE-SM(R)PDTA0.20MAY13
 DATIM
 OBNUC 1H
 EXMOD NON
 OBFREQ 399.65 MHz
 OBSET 124.00 KHz
 OBFIN 10300.0 Hz
 POINT 16384
 FREQU 4006.4 Hz
 SCANS 16
 ACQTM 4.089 sec
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 EXREF 1.25 ppm
 BF 0.12 Hz
 RGAIN 13

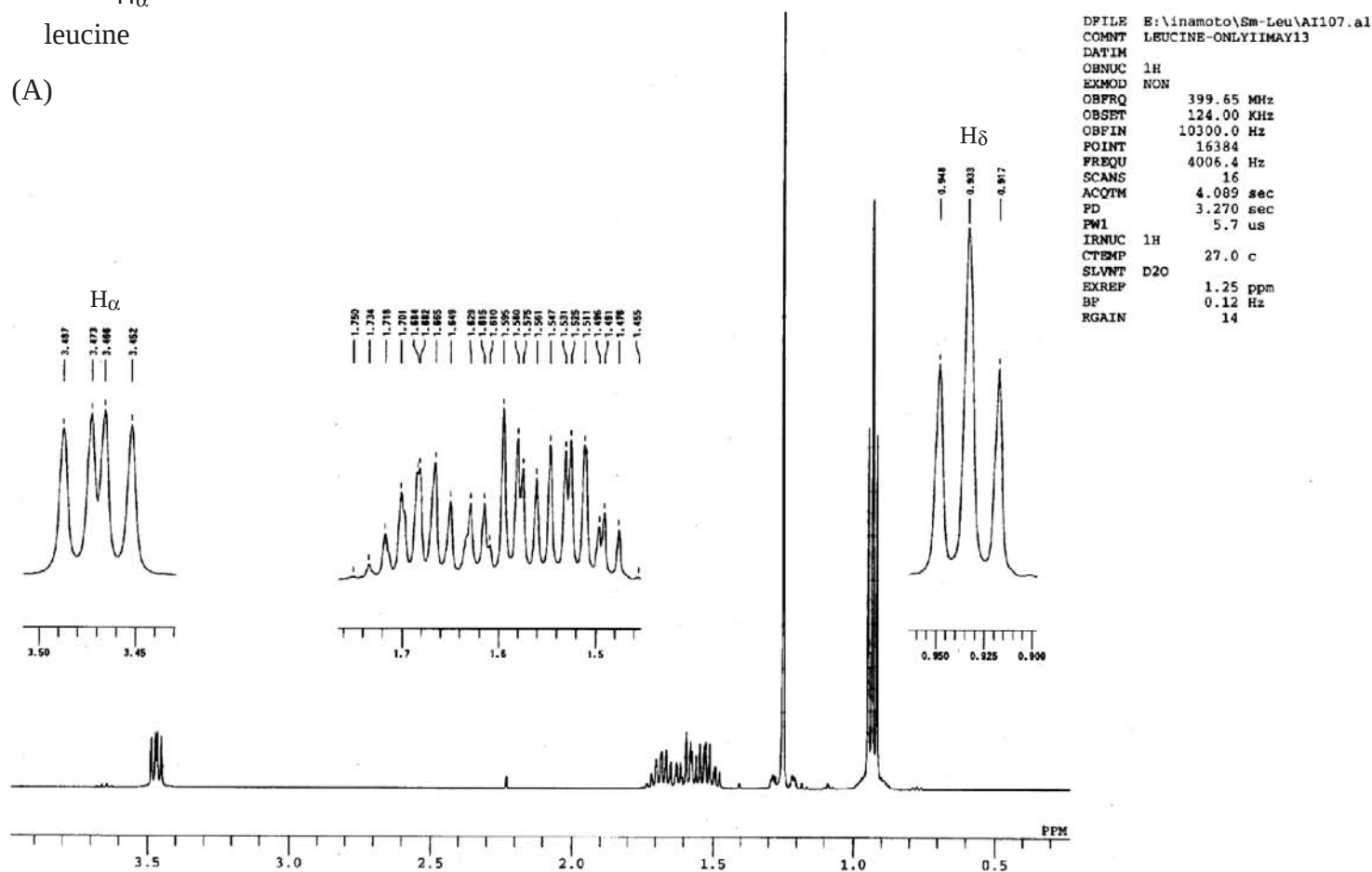


¹H NMR spectrum (400 MHz) of 0.06 M valine (D/L = 1/2) in D₂O at 25 °C; (A) no reagent, pH 10.2, (B) [(R)-1]/[valine] = 0.20, pH 10.2.

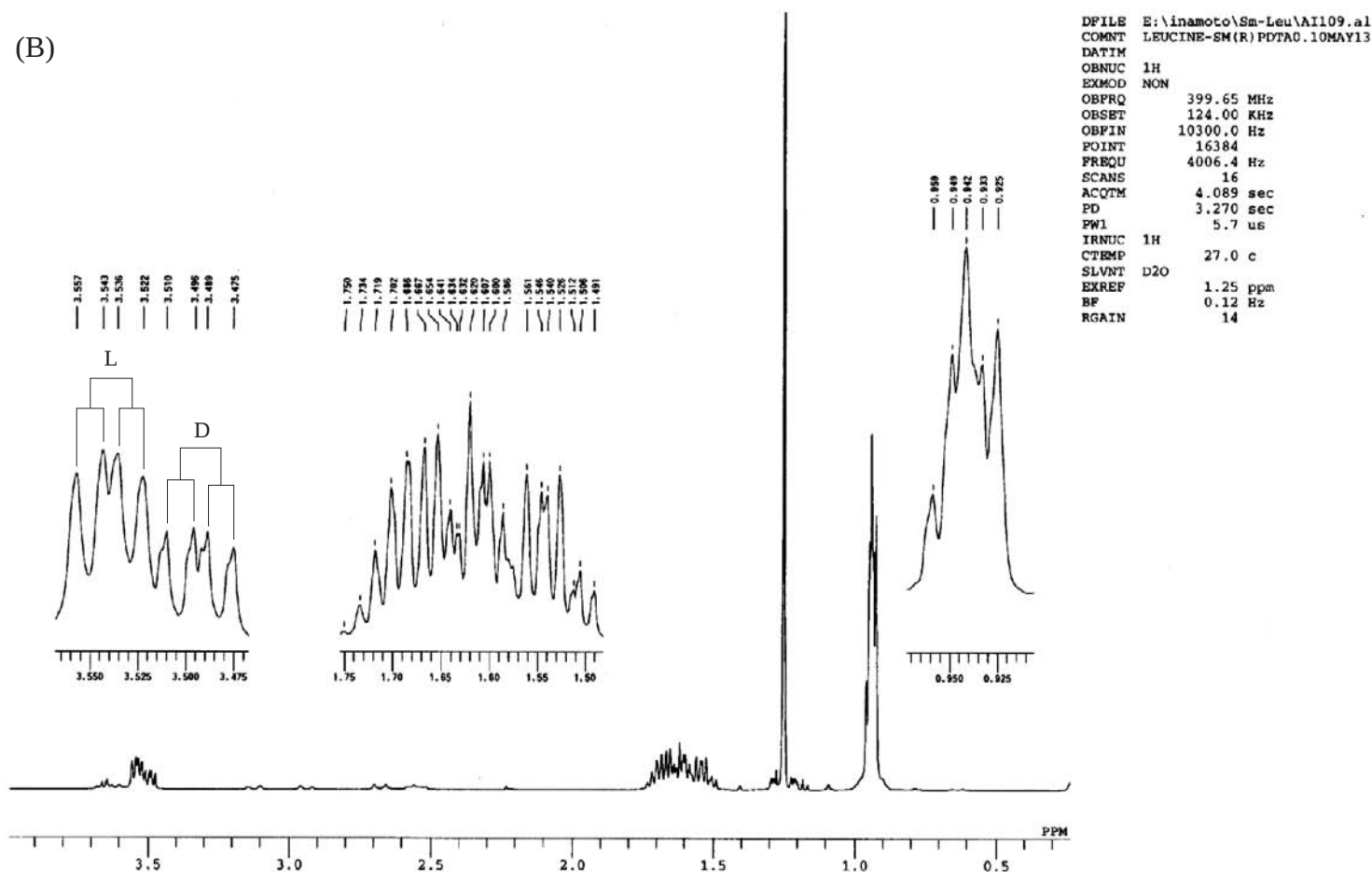


leucine

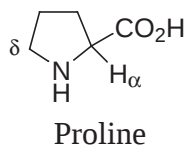
(A)



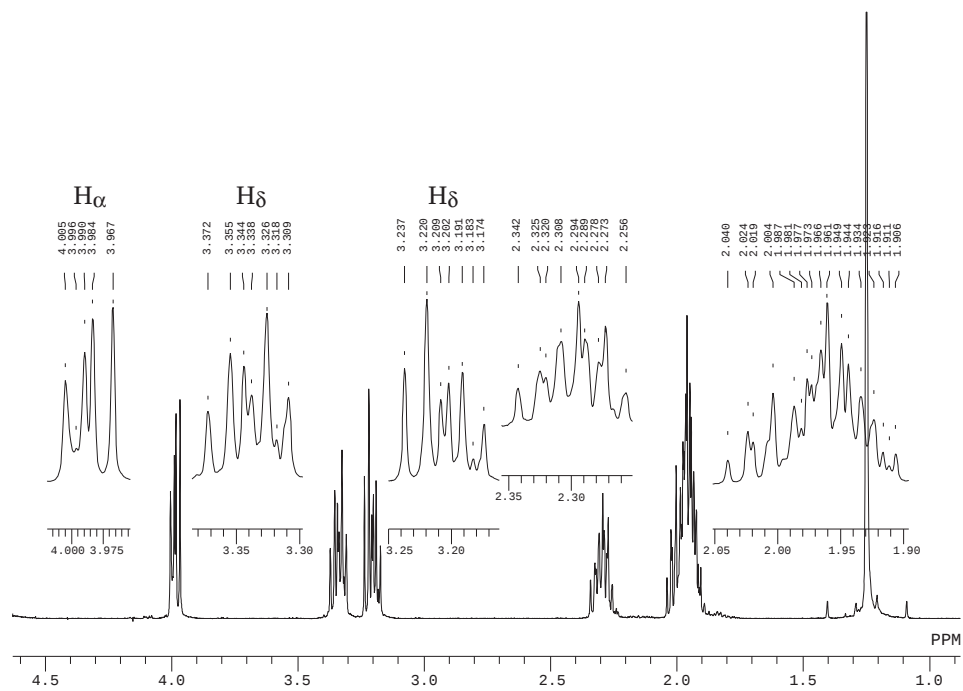
(B)



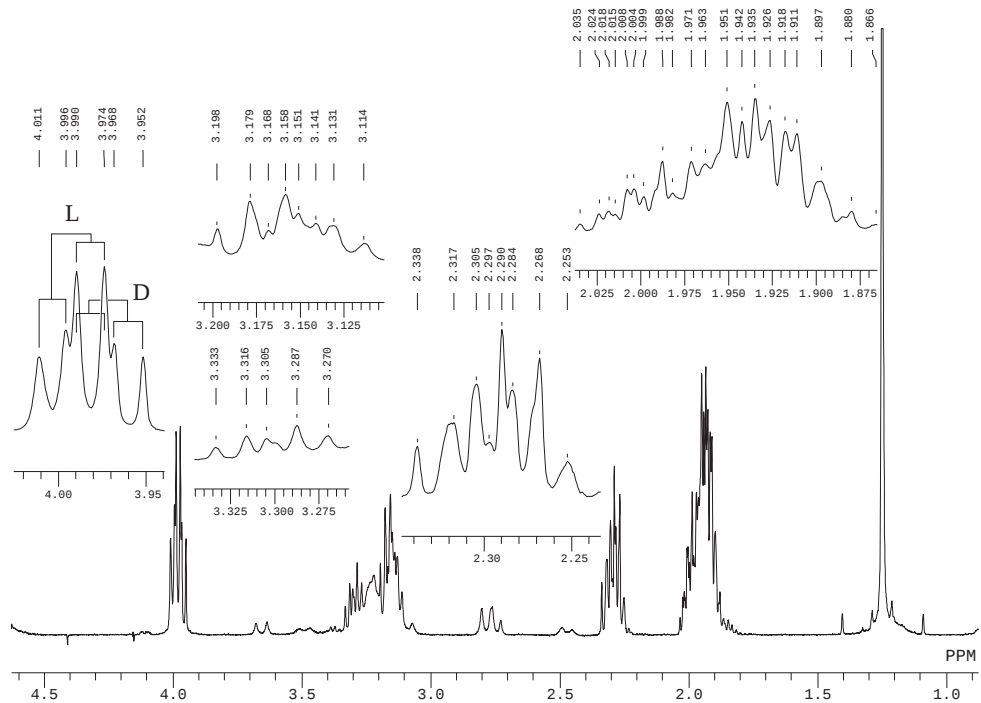
^1H NMR spectrum (400 MHz) of 0.06 M leucine (D/L = 1/2) in D_2O at 25 °C; (A) no reagent, pH 10.3, (B) $[(R)\text{-}1]/[\text{leucine}] = 0.10$, pH 10.3.



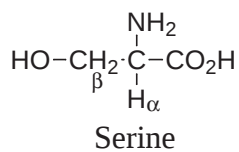
(A)



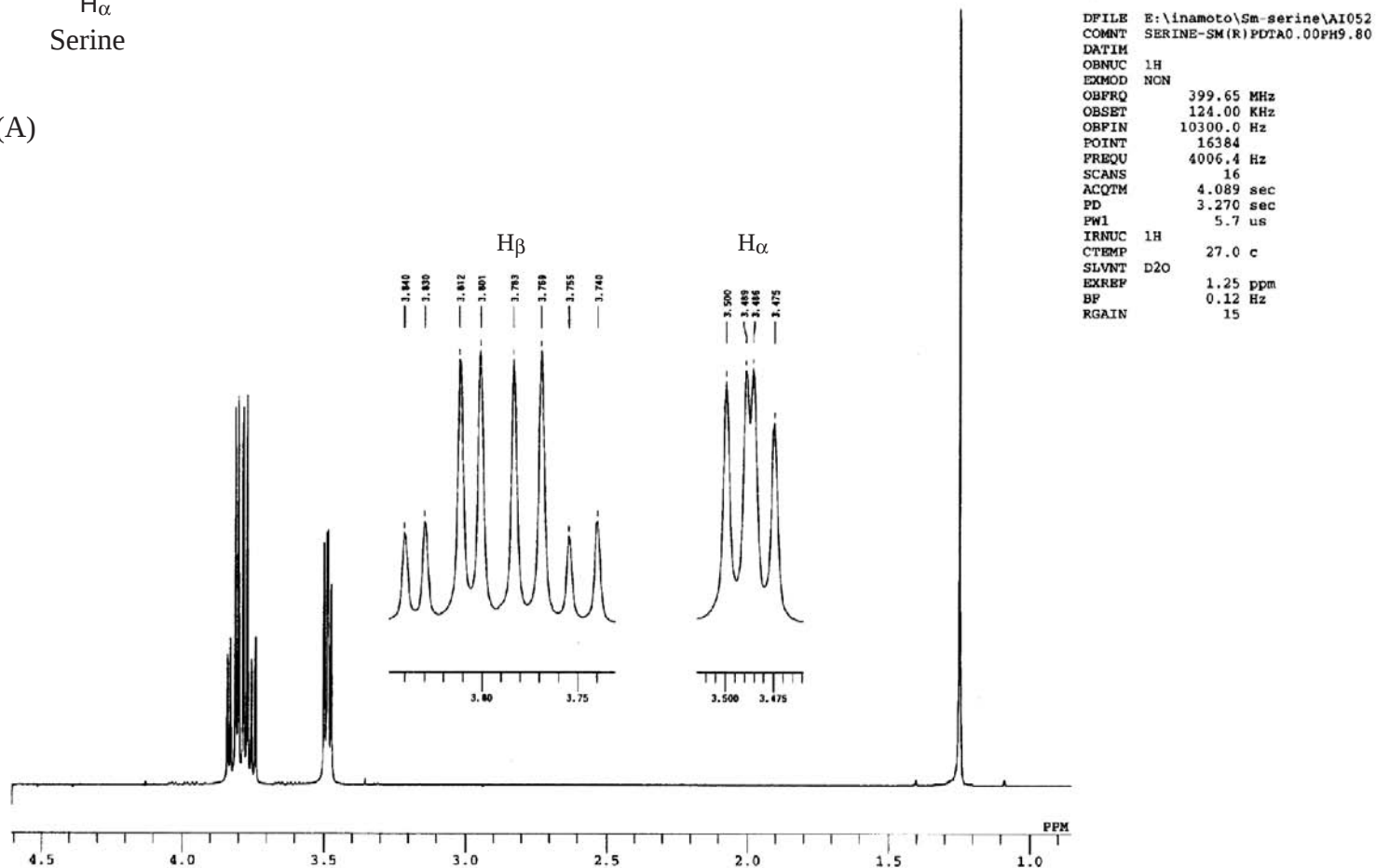
(B)



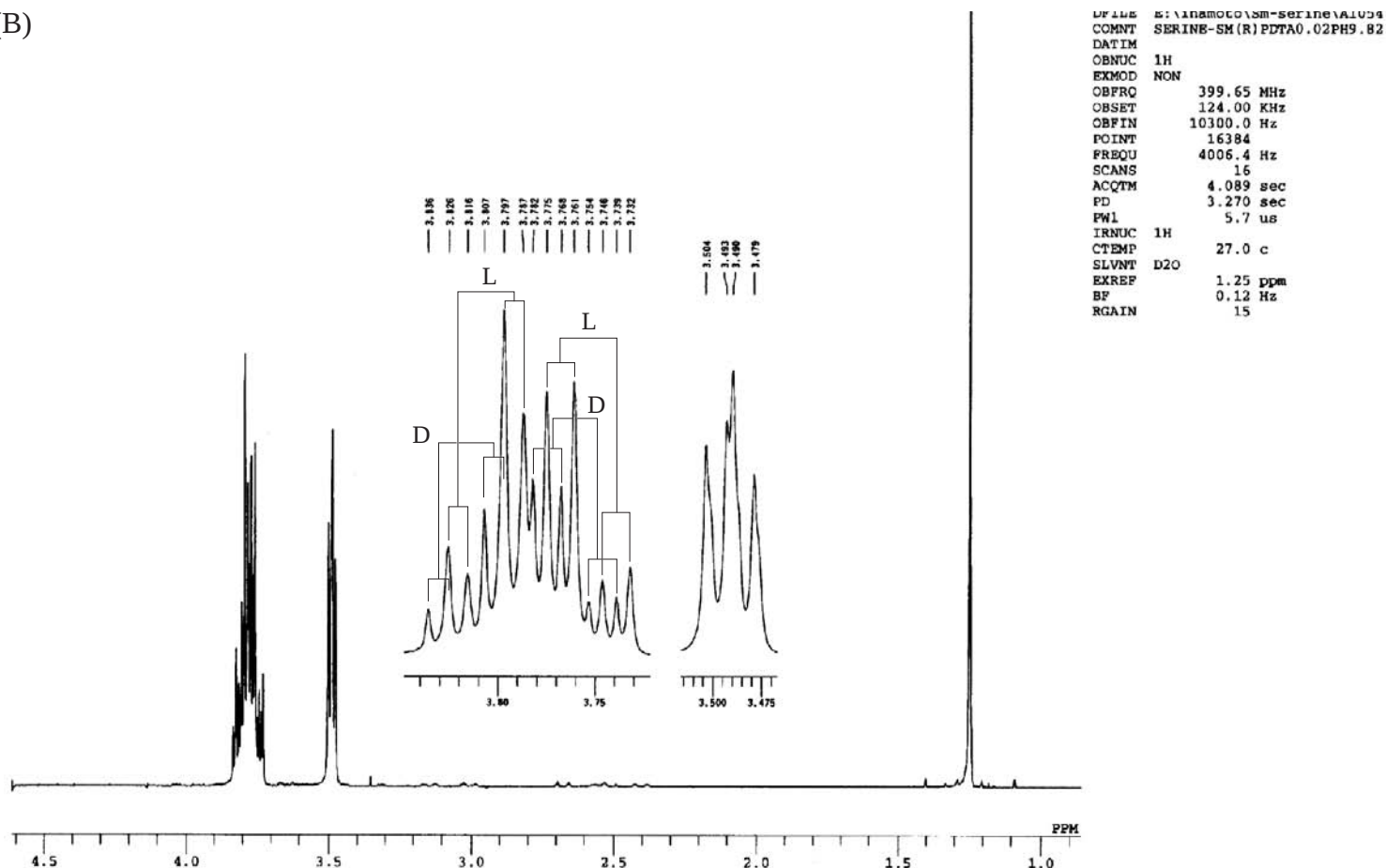
^1H NMR spectrum (400 MHz) of 0.06 M proline (D/L = 1/2) in D_2O at 25 °C; (A) no reagent, pH 11.5, (B) $[(R)\text{-}1]/[\text{proline}] = 0.10$, pH 11.5.



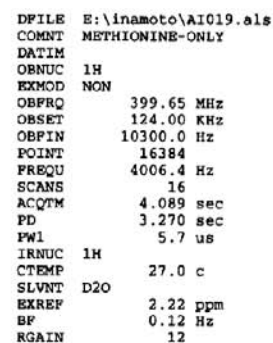
(A)



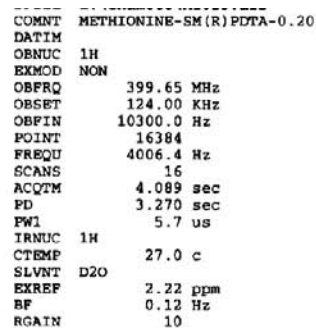
(B)



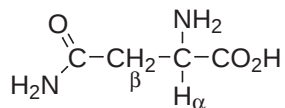
^1H NMR spectrum (400 MHz) of 0.06 M serine (D/L = 1/2) in D_2O at 25 °C; (A) no reagent, pH 9.8, (B) $[(R)-1]/[\text{serine}] = 0.02$, pH 9.8.



(B)

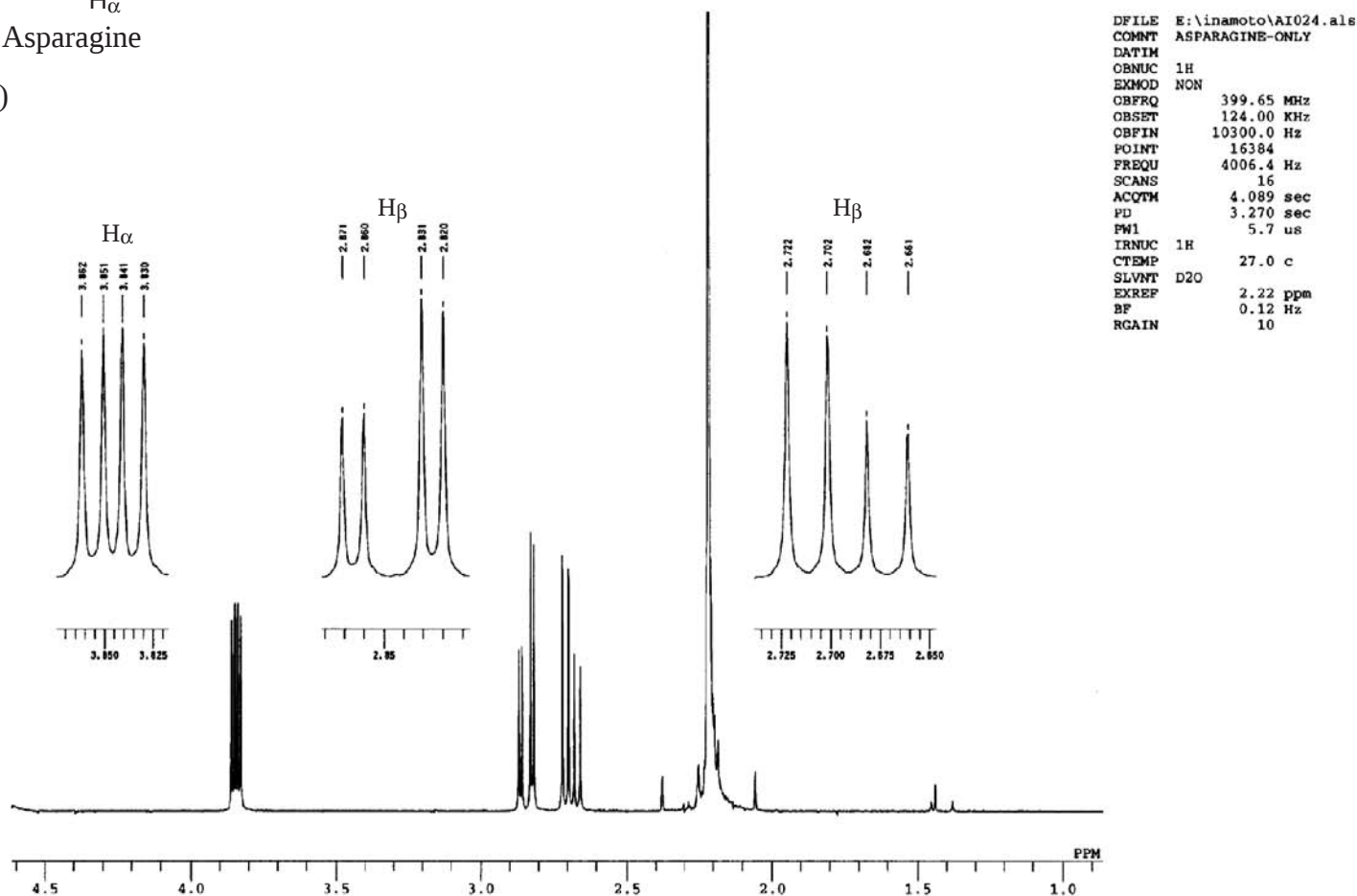


¹H NMR spectrum (400 MHz) of 0.06 M methionine (D/L = 1/2) in D₂O at 25 °C; (A) no reagent, pH 9.8, (B) [(*R*)-**1**]/[methionine] = 0.20, pH 9.8.

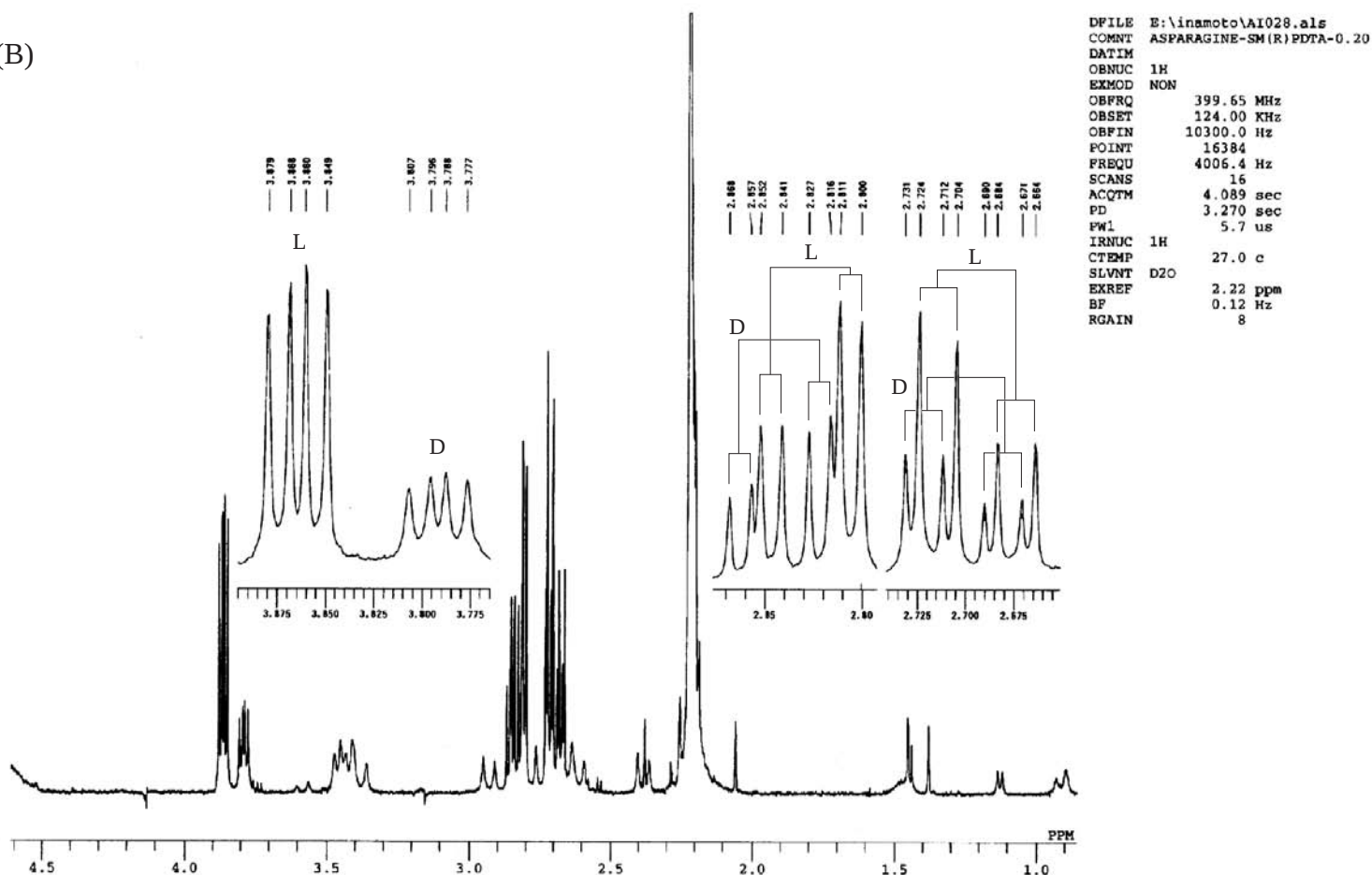


Asparagine

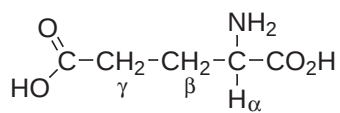
(A)



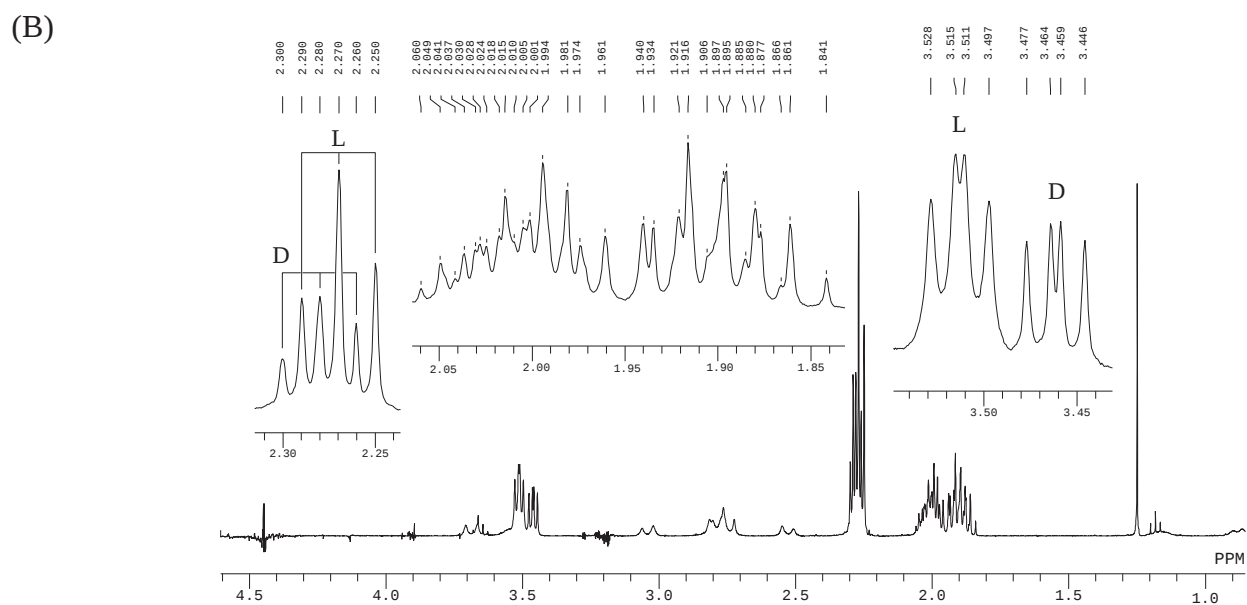
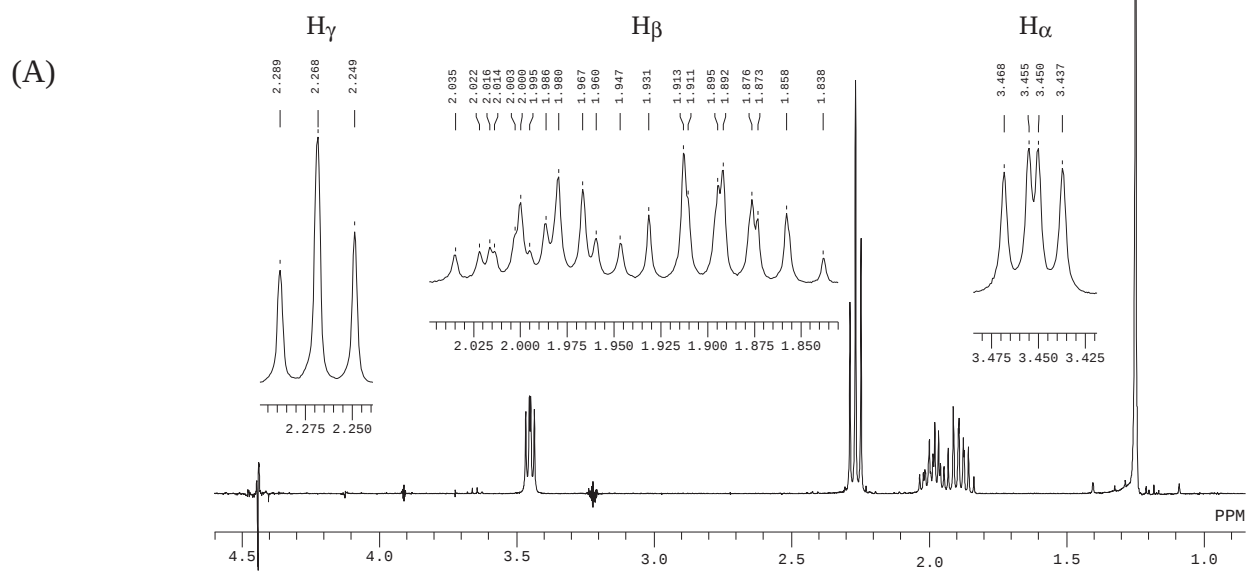
(B)



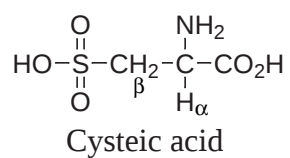
¹H NMR spectrum (400 MHz) of 0.06 M asparagine (D/L = 1/2) in D₂O at 25 °C; (A) no reagent, pH 9.3, (B) [(R)-1]/[asparagine] = 0.20, pH 9.3.



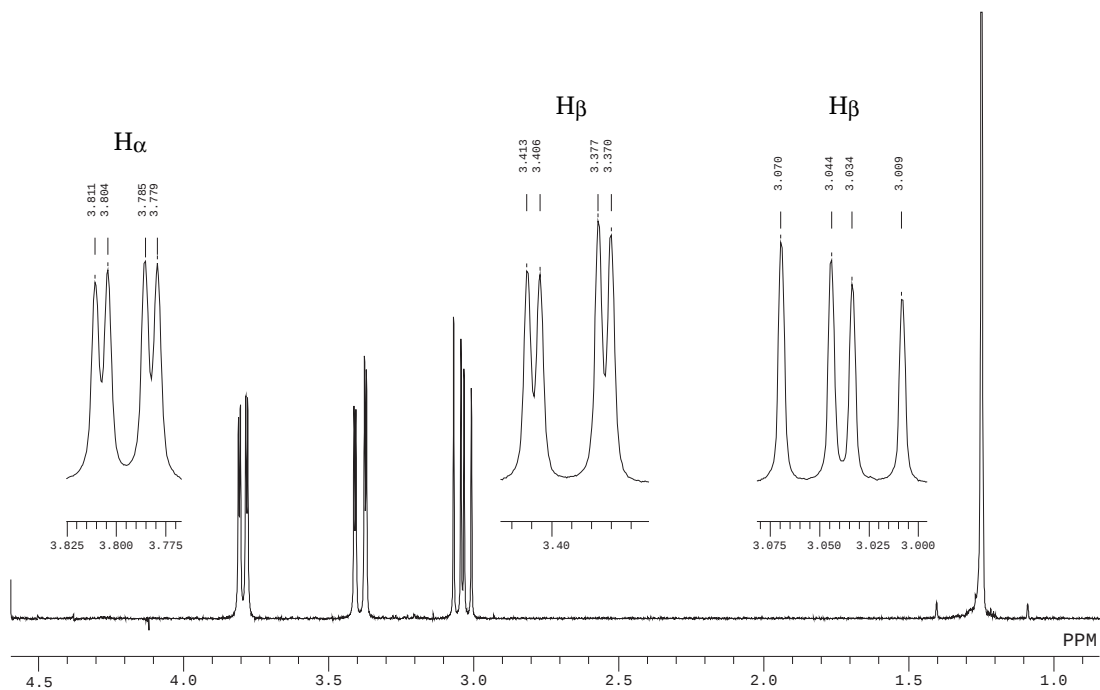
Glutamic acid



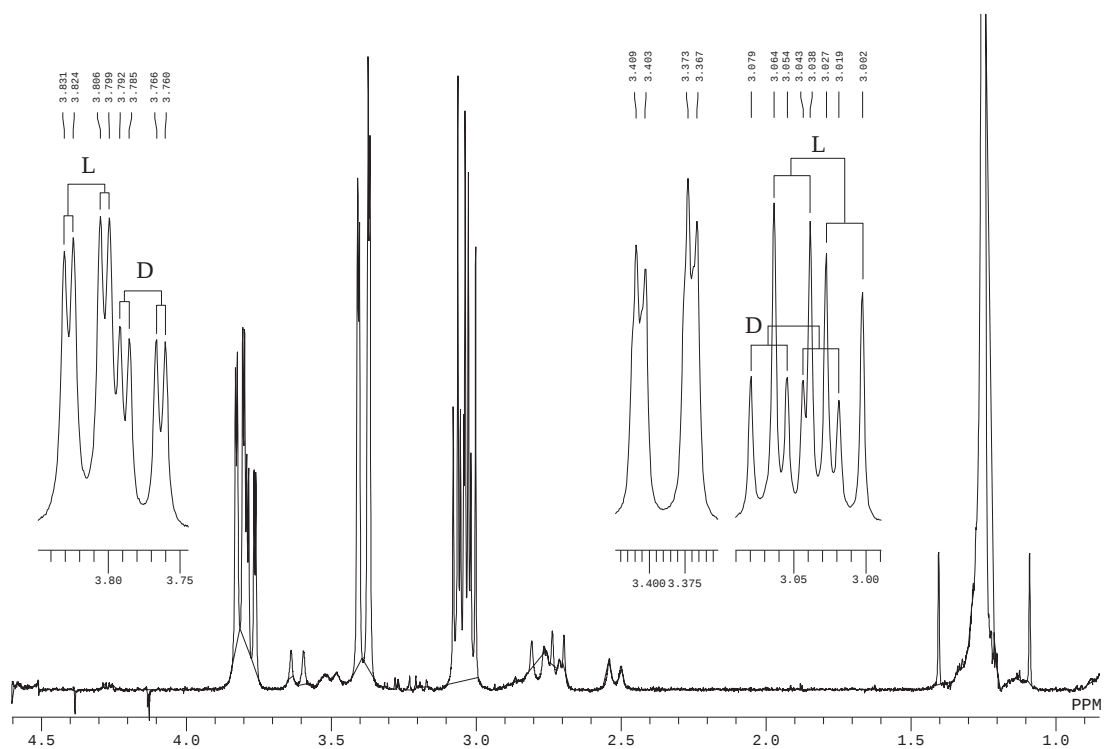
^1H NMR spectrum (400 MHz) of 0.06 M glutamic acid ($\text{D/L} = 1/2$) in D_2O at 25 $^\circ\text{C}$; (A) no reagent, pH 10.0, (B) $[(R)\text{-}1]/[\text{glutamic acid}] = 0.15$, pH 10.0.



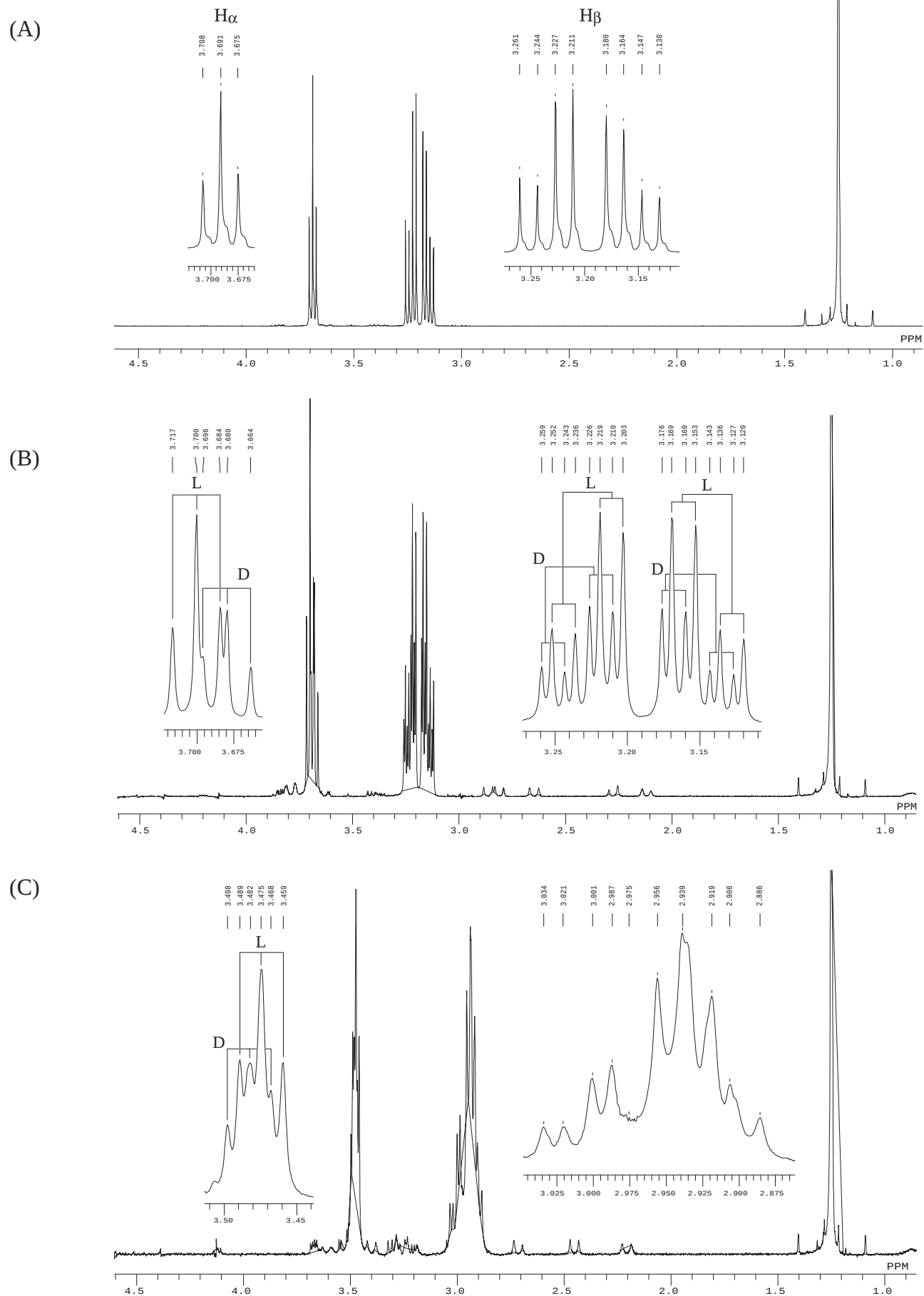
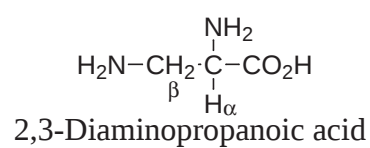
(A)



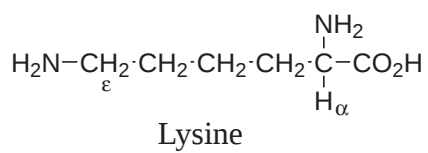
(B)



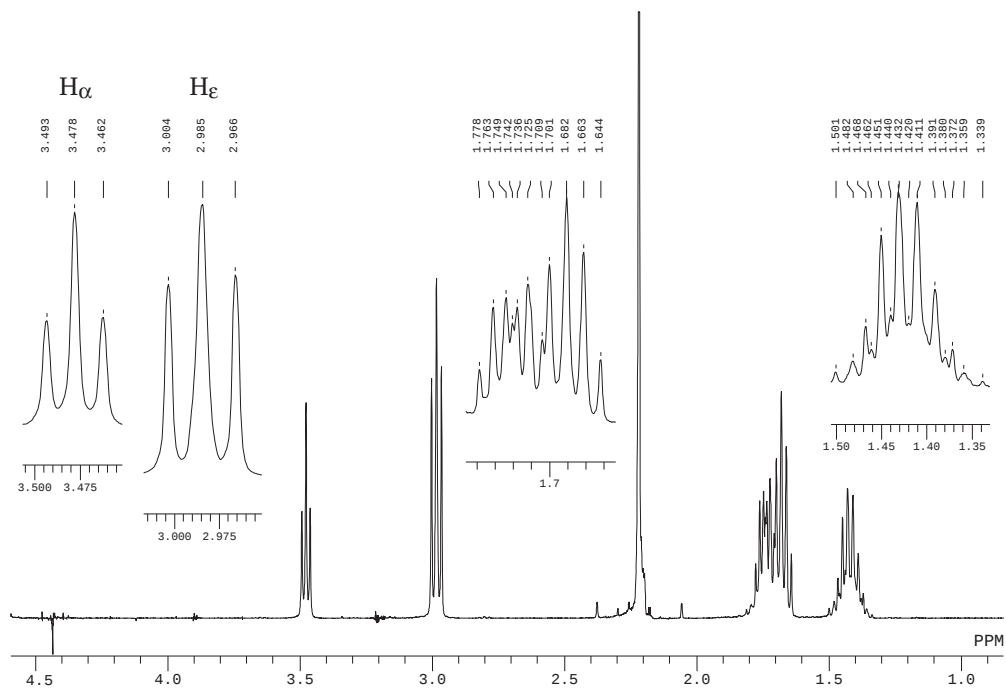
^1H NMR spectrum (400 MHz) of 0.06 M cysteic acid (D/L = 1/2) in D_2O at 25 $^\circ\text{C}$; (A) no reagent, pH 9.3, (B) $[(R)\text{-1}]/[\text{cysteic acid}] = 0.10$, pH 9.4.



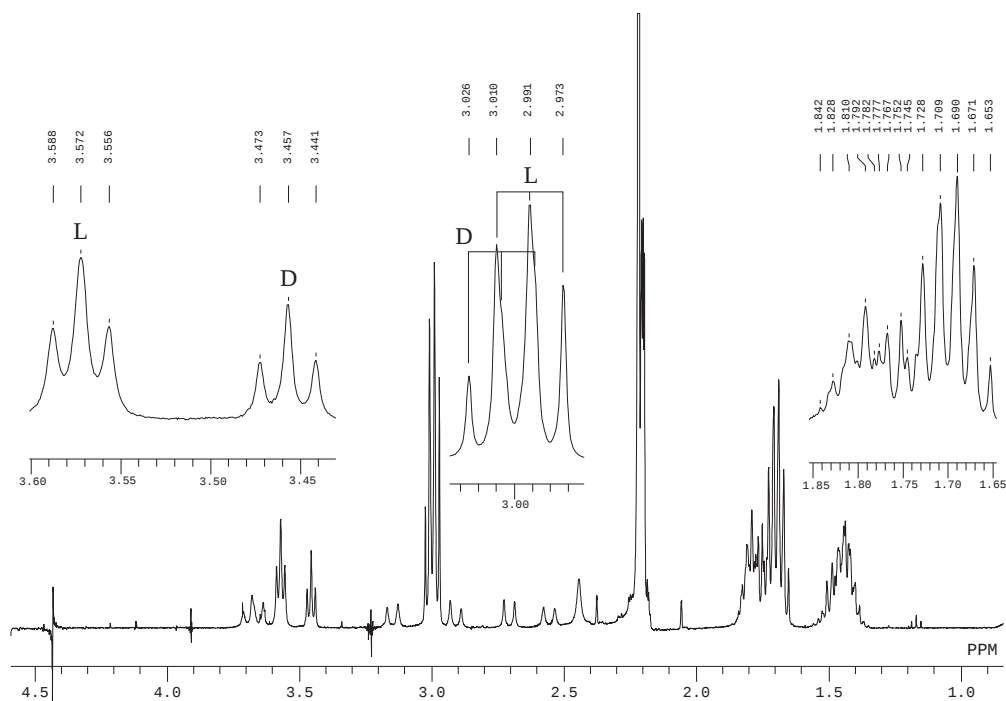
¹H NMR spectrum (400 MHz) of 0.06 M 2,3-diaminopropanoic acid (D/L = 1/2) in D₂O at 25 °C; (A) no reagent, pH 7.4, (B) [(*R*)-1]/[2,3-diaminopropanoic acid] = 0.05, pH 7.4, (C) [(*R*)-1]/[2,3-diaminopropanoic acid] = 0.05 pH 9.4.



(A)



(B)



^1H NMR spectrum (400 MHz) of 0.06 M lysine ($\text{D/L} = 1/2$) in D_2O at 25 °C; (A) no reagent, pH 9.4, (B) $[(R)\text{-1}]/[\text{lysine}] = 0.20$, pH 9.5.