

Supporting information

HYDROGEN-DEUTERIUM EXCHANGE OF HISTIDINE AND HISTAMINE WITH DEUTERATED TRIFLUOROMETHANESULFONIC ACID

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SI-1) Time course of reaction for L-histidine in TfOD at 130 °C

SI-2) Time course of reaction for D-histidine in TfOD at 130 °C

SI-3) Time course of reaction for histamine in TfOD at 130 °C

SI-4) Treatment of L-histidine + L-phenylalanine in TfOD(H) at rt for 1 h

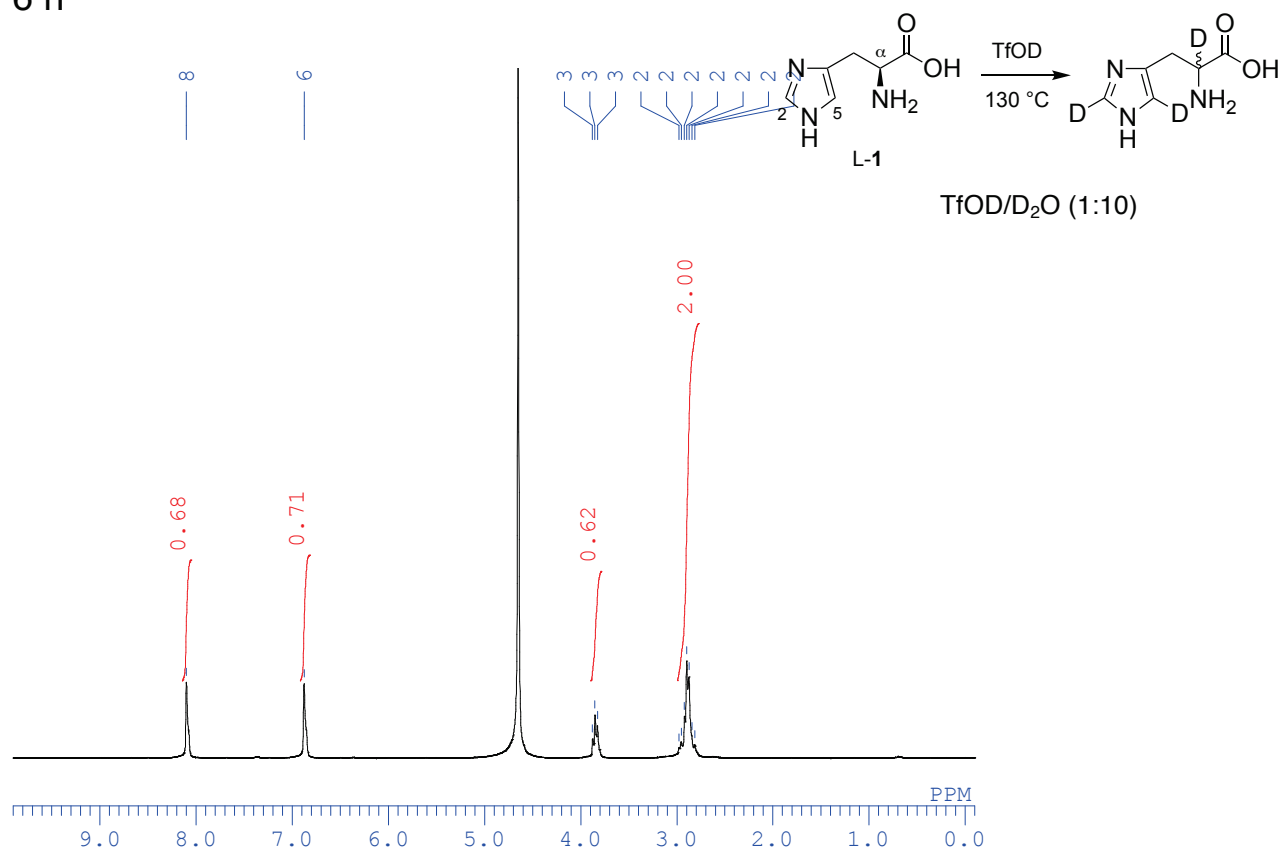
SI-5) Treatment of L-histidine + L-tyrosine in TfOD(H) at rt for 1 h

The reaction mixture in TfOD(H) (40 μ L) was diluted with D₂O (400 μ L) to subject NMR analysis.

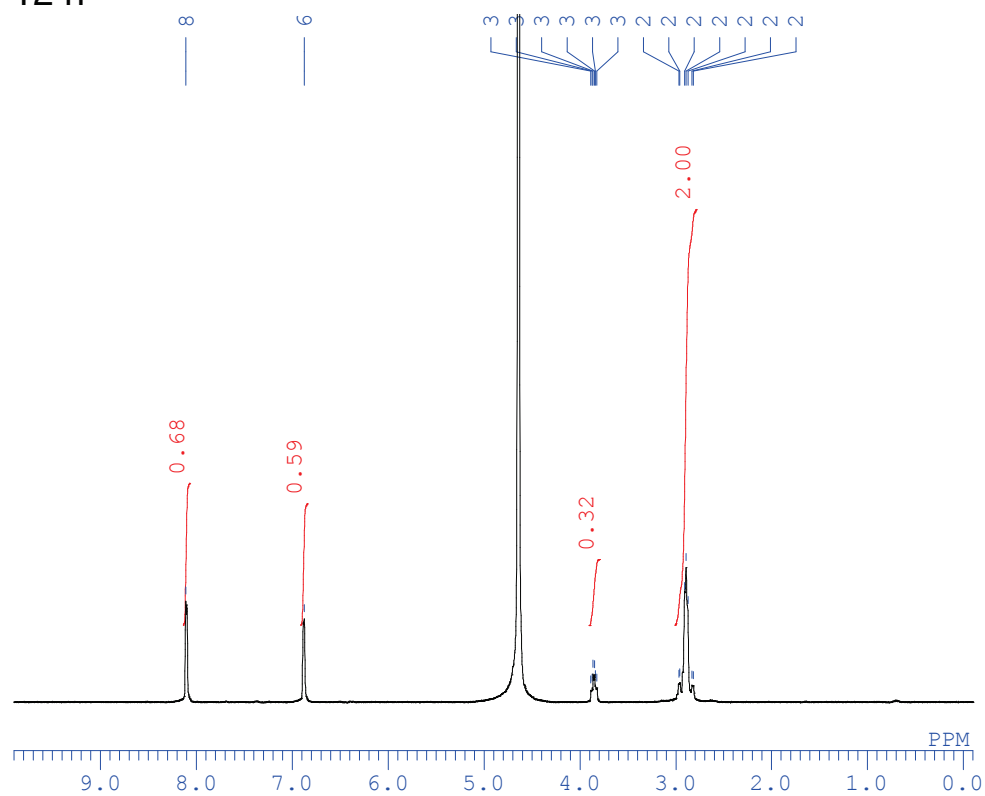
SI-6) NOESY spectrum of L-tyrosine in TfOH-D₂O

SI-1) Time course of reaction for L-histidine in TfOD at 130 °C

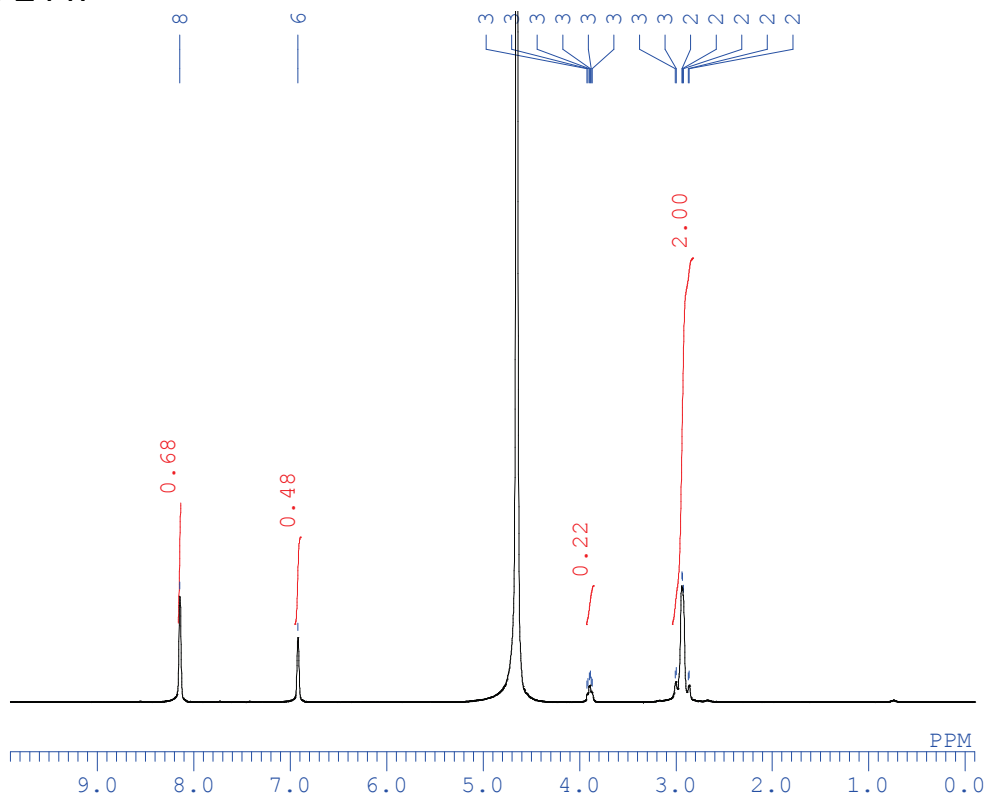
1-1) 6 h



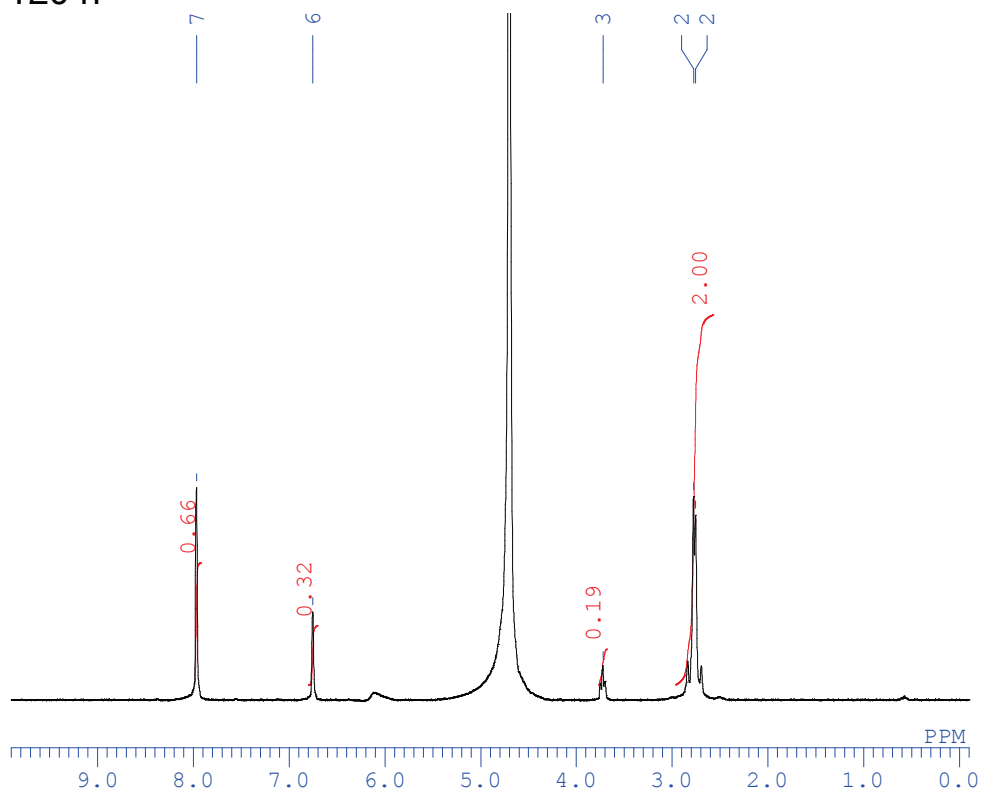
1-2) 12 h



1-3) 24 h

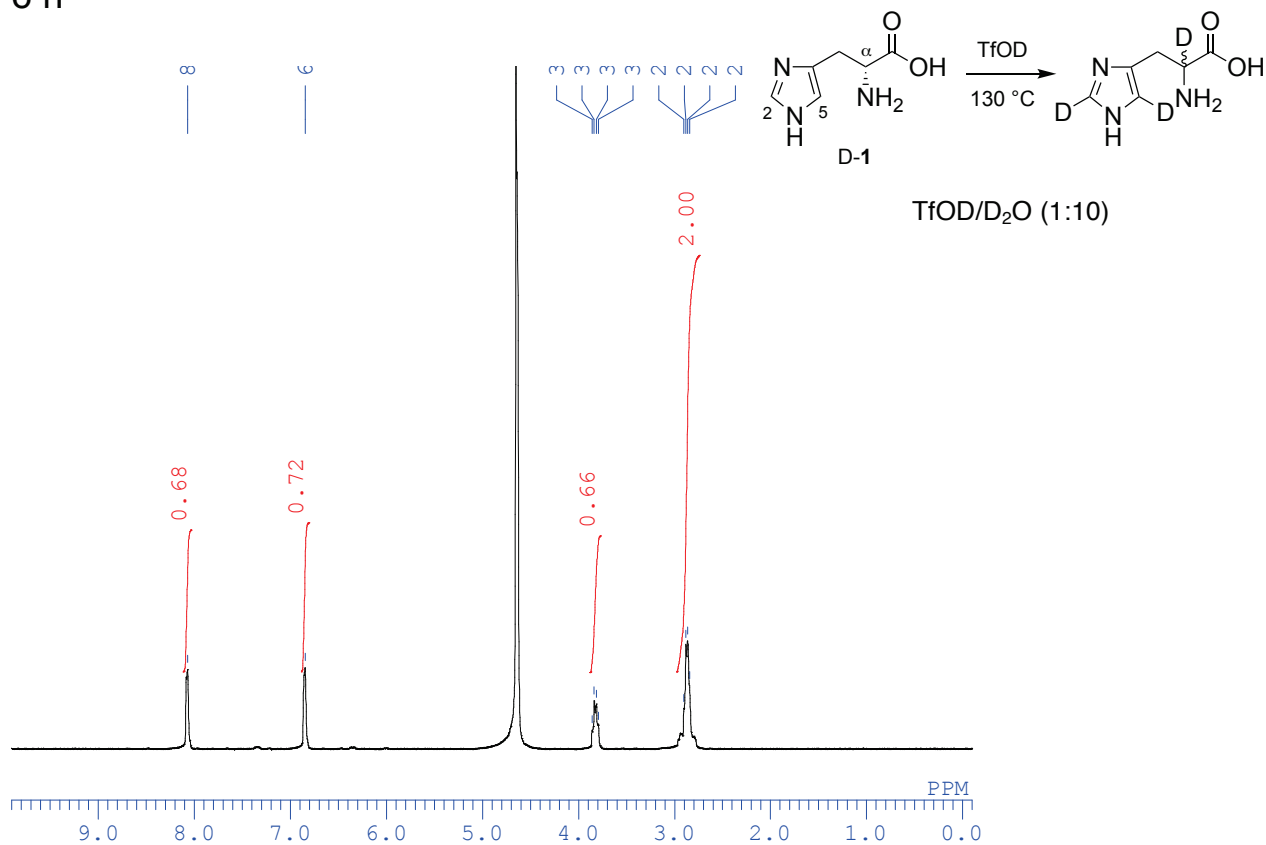


1-4) 120 h

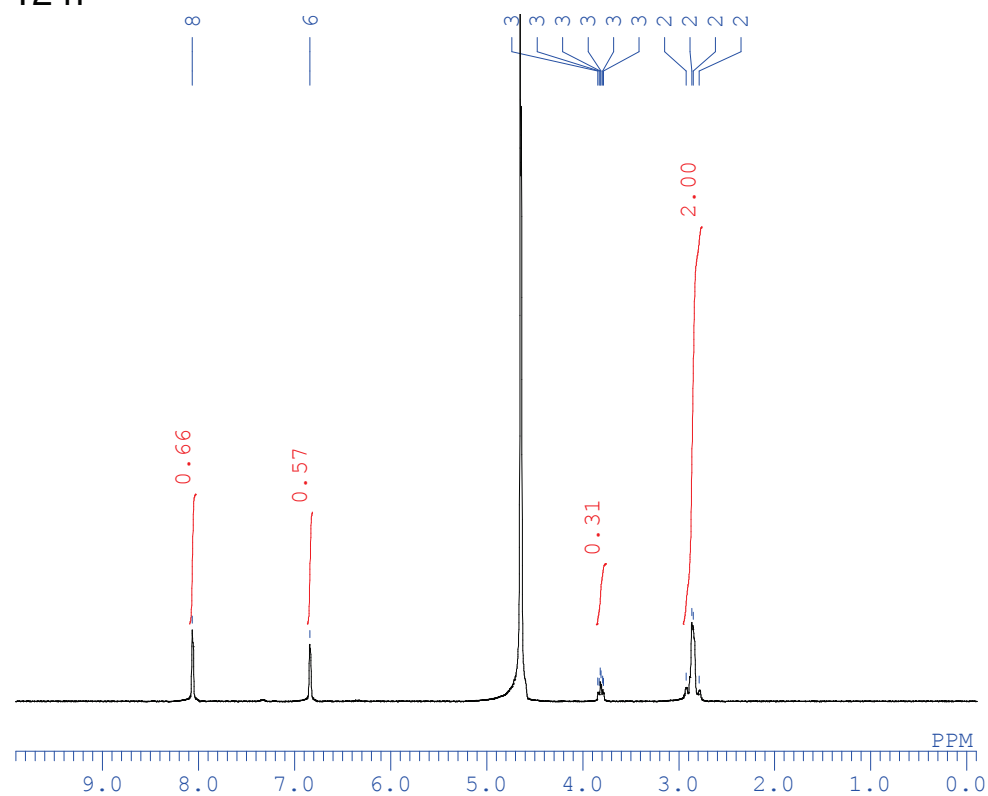


SI-2) Time course of reaction for D-histidine in TfOD at 130 °C

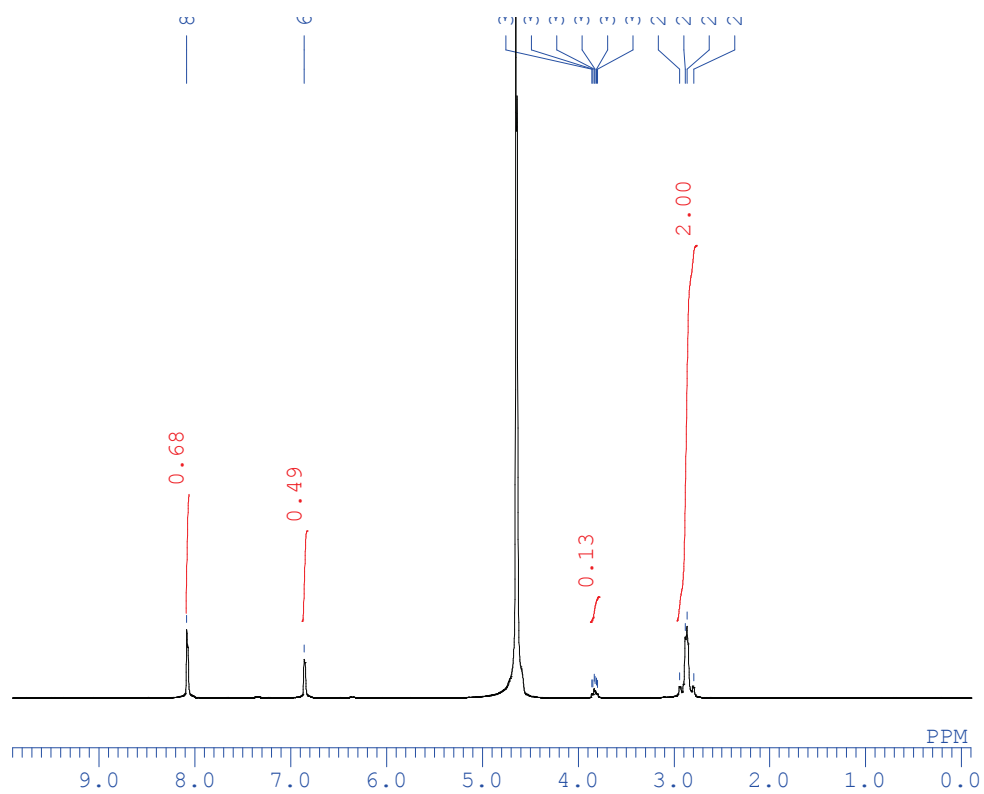
2-1) 6 h



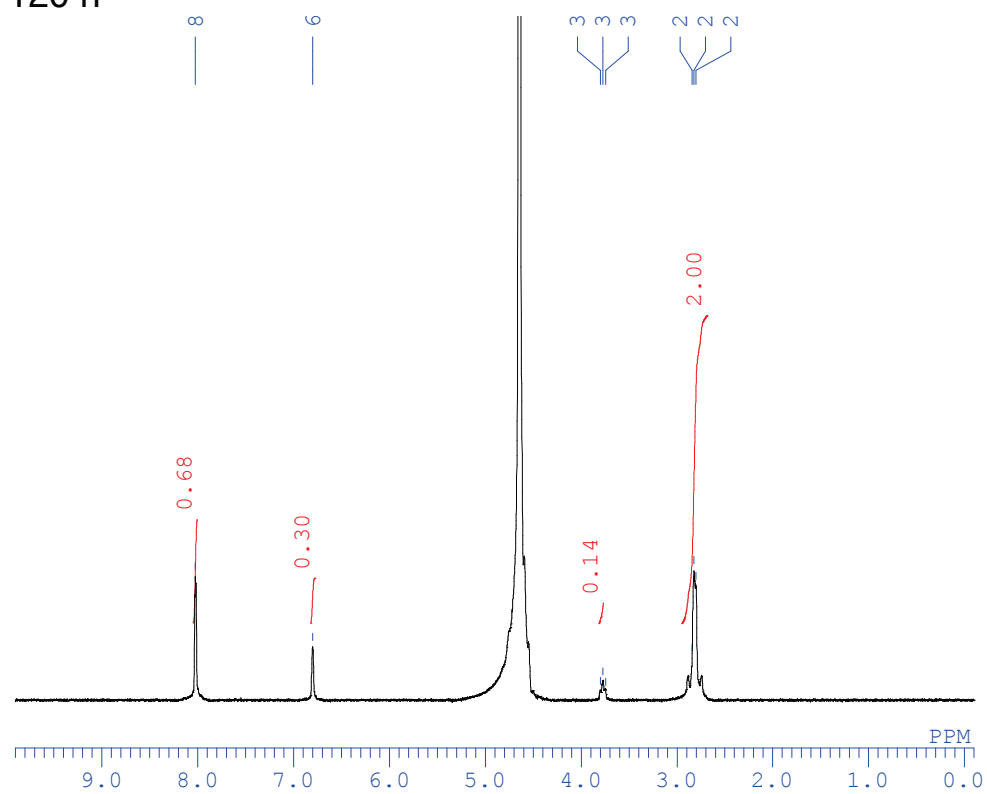
2-2) 12 h



2-3) 24 h

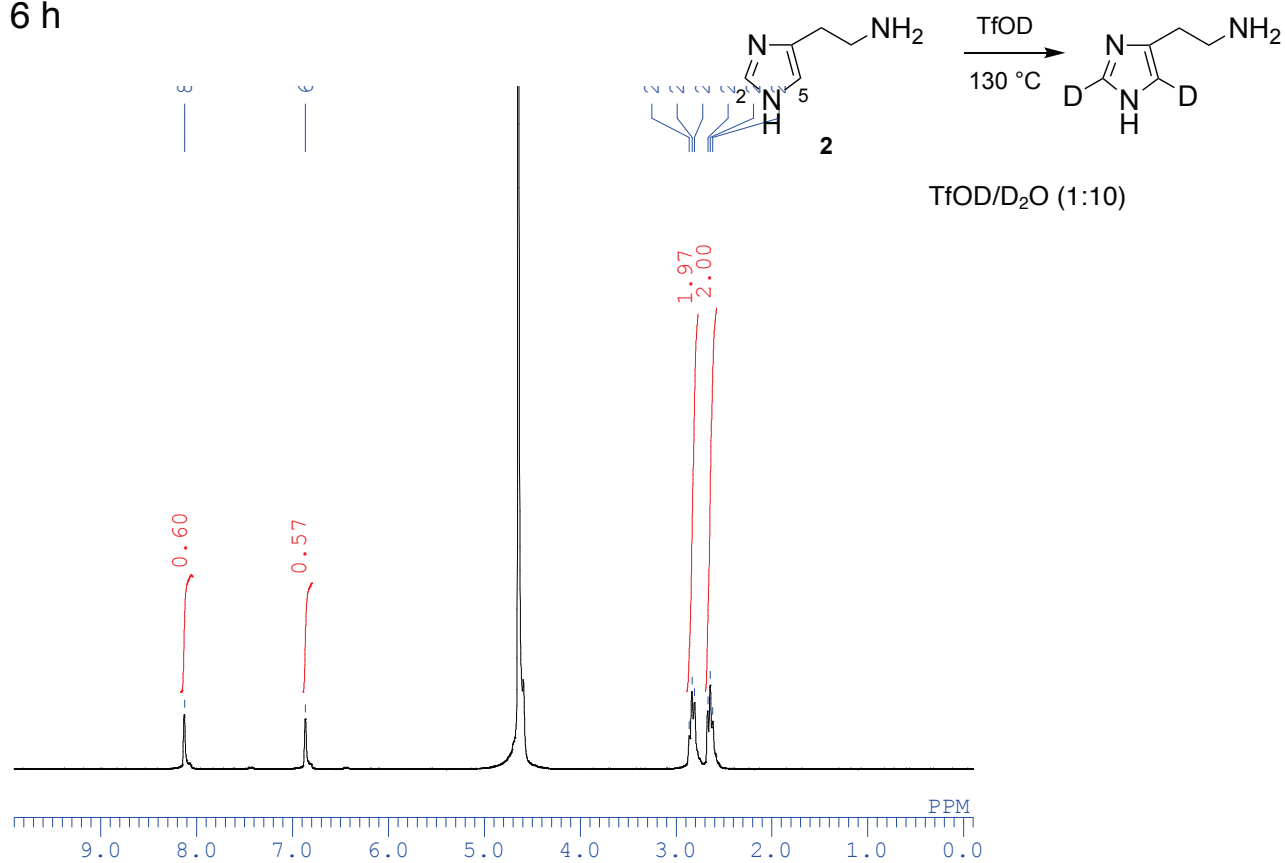


2-4) 120 h

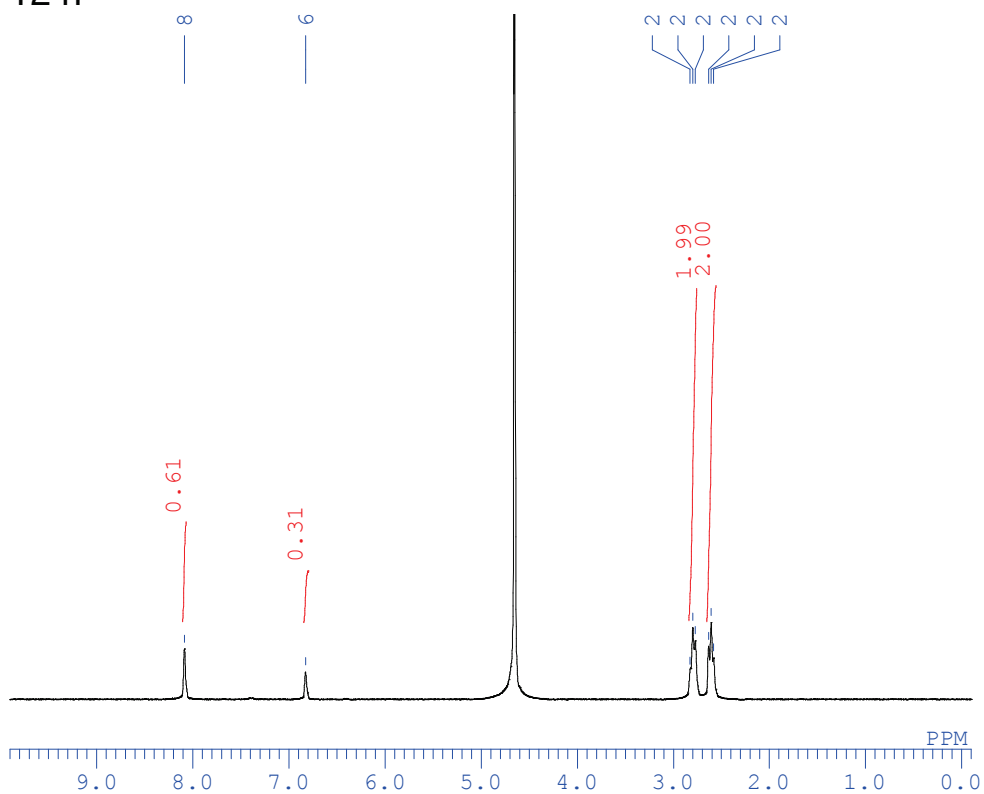


SI-3) Time course of reaction for histamine in TfOD at 130 °C

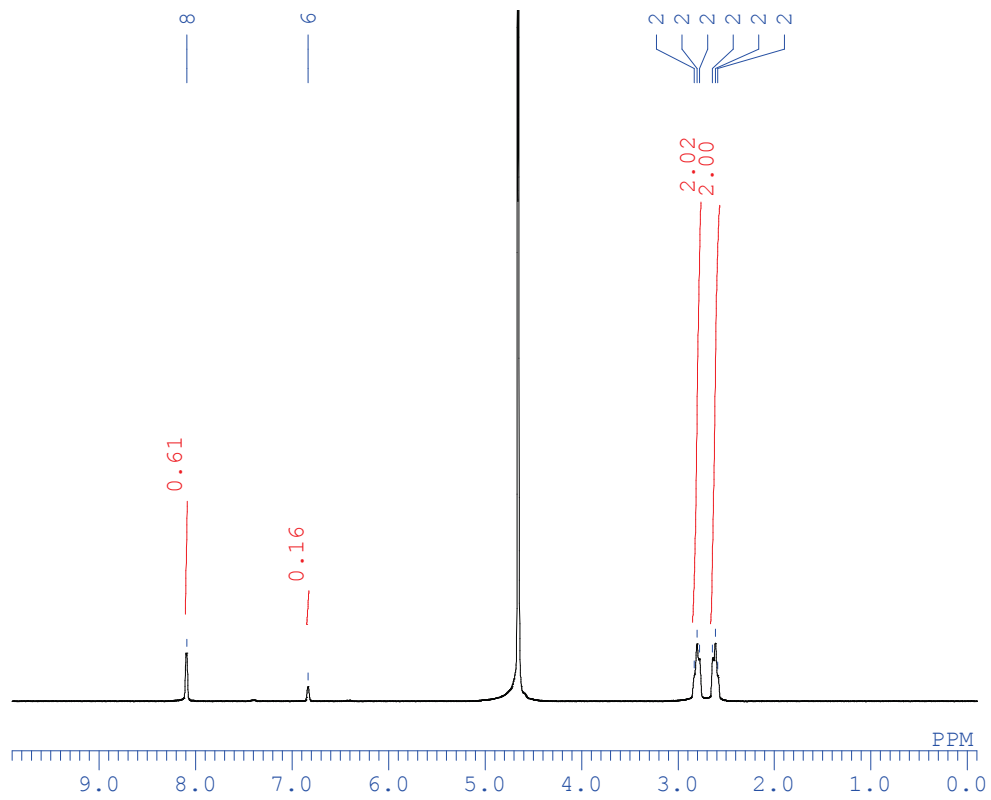
3-1) 6 h



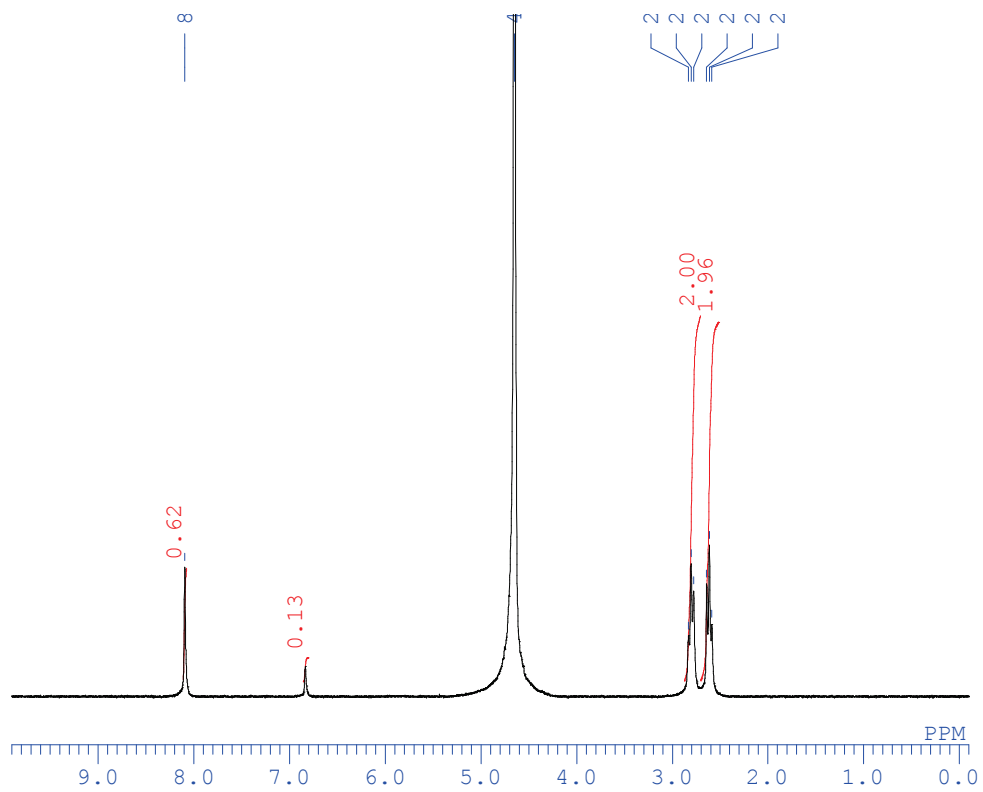
3-2) 12 h



3-3) 24 h

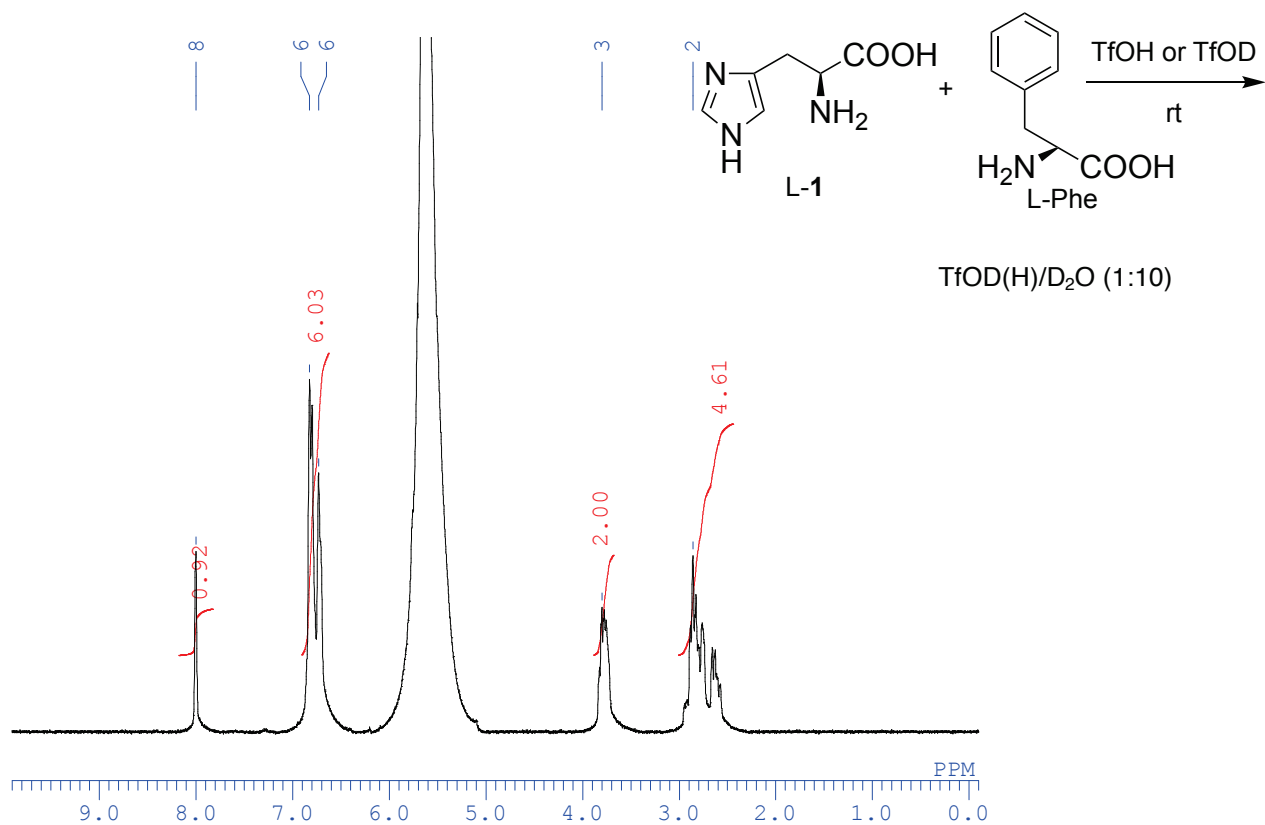


3-4) 120 h

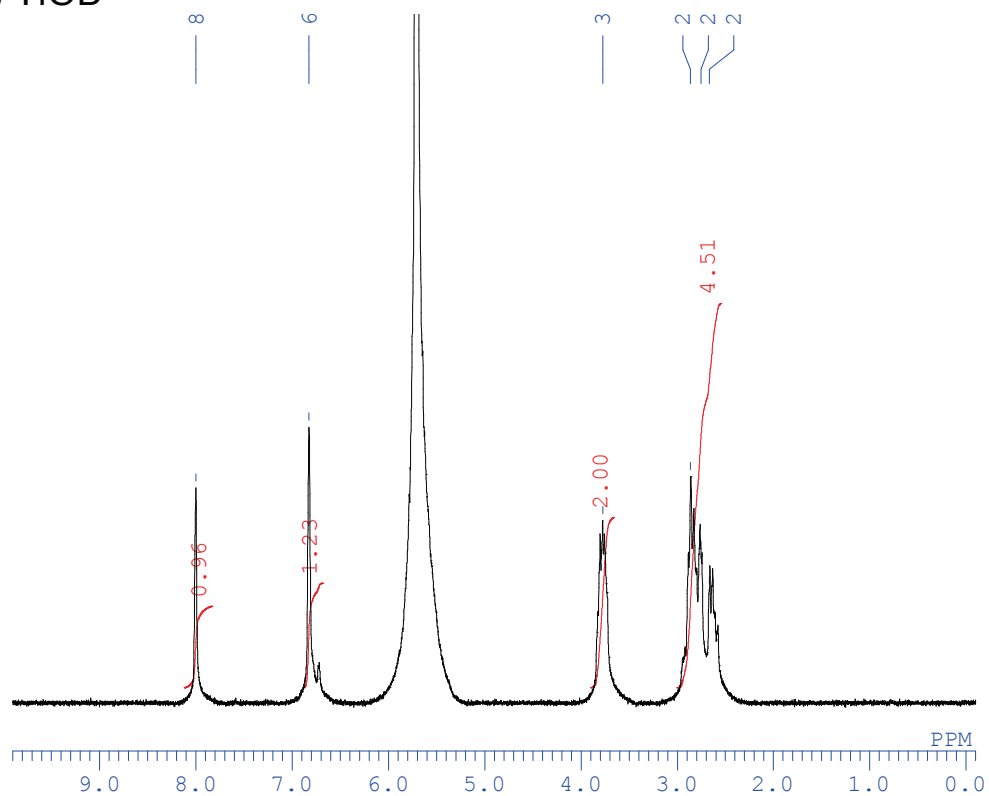


SI-4) Treatment of L-histidine + L-phenylalanine in TfOD(H) at rt for 1 h

4-1) TfOH

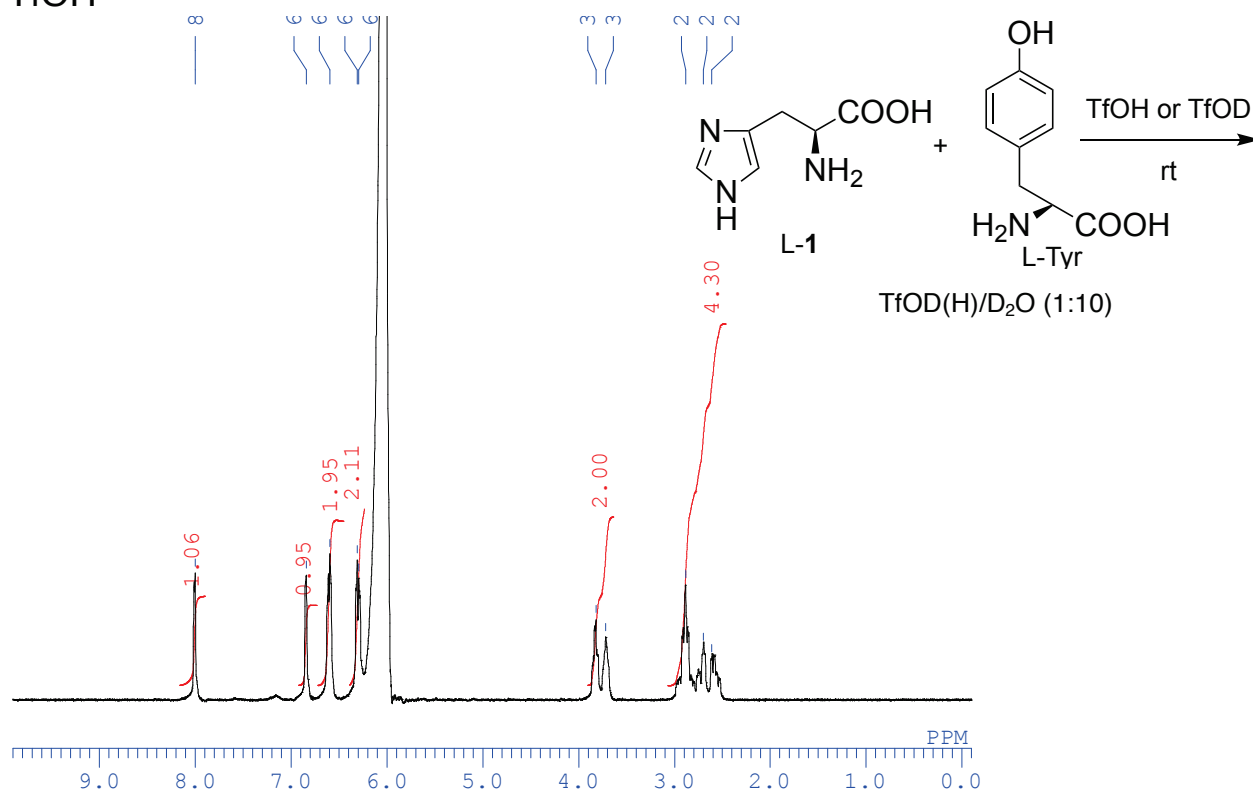


4-2) TfOD

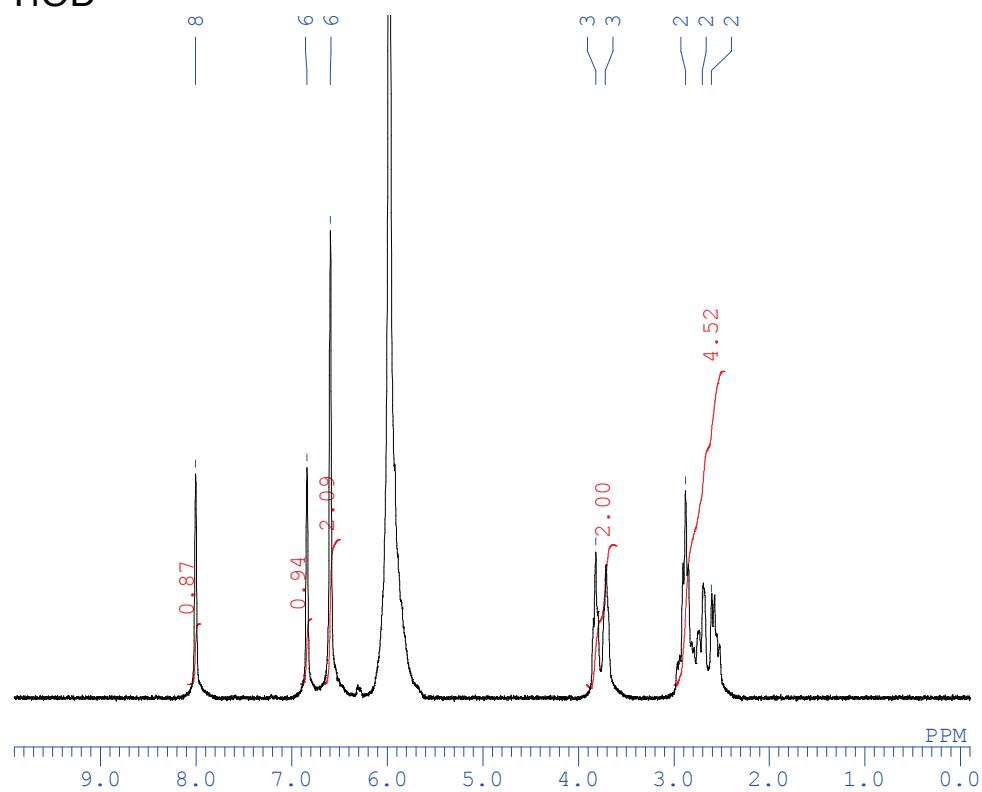


SI-5) Treatment of L-histidine + L-tyrosine in TfOD(H) at rt for 1 h

5-1) TfOH



5-2) TfOD



SI-6) NOESY spectrum of L-tyrosine in TfOH-D₂O

L-Tyrosine (40 mg, 0.22 mmol) was dissolved in TfOH (0.3 mL, 2.66 mmol). The solution was diluted with D₂O (0.3 mL).

(Final concentrations of L-tyrosine and TfOH are 0.37 and 4.4 M, respectively.)

