

Electronic Supplementary Material

Photochemical Conversion of a Cytidine Derivative to a Thymidine Analog via [2+2]-Cycloaddition

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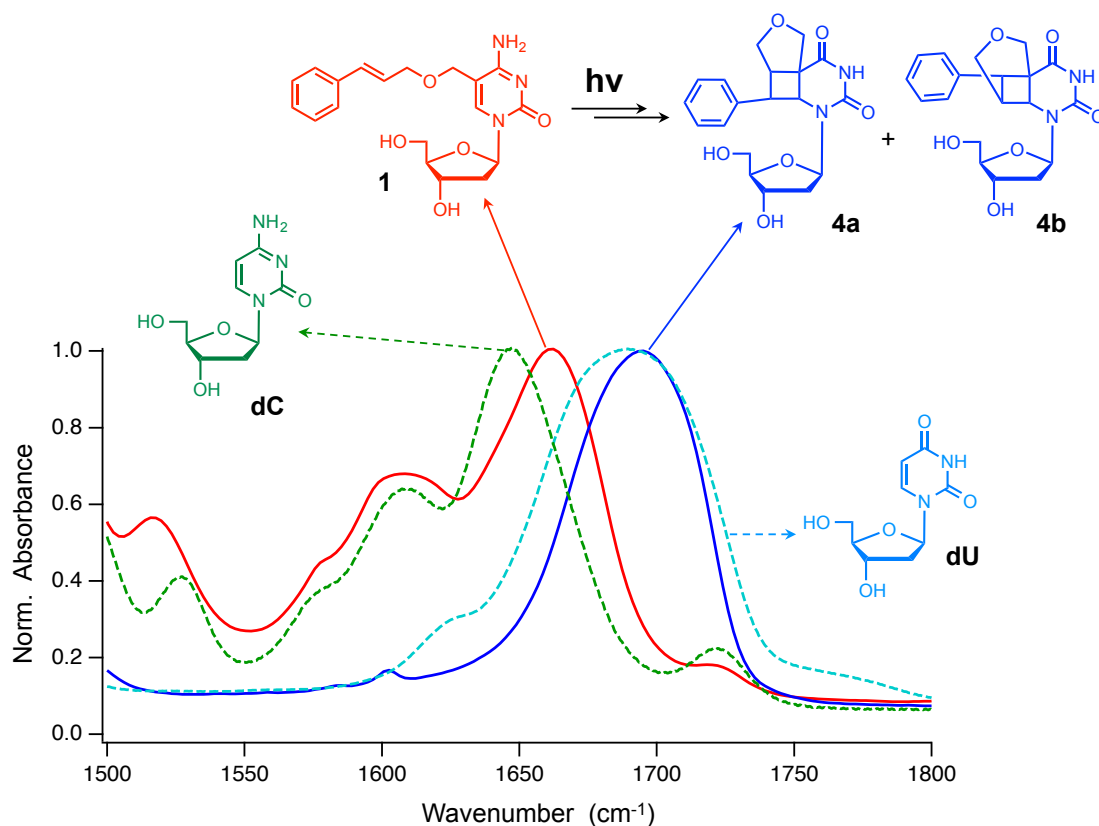


Figure S1: FT-IR spectra in the carbonyl spectral region of **1**, purified photoproduct **4a/4b**, **dC** and **dU** on CaF₂ disks.

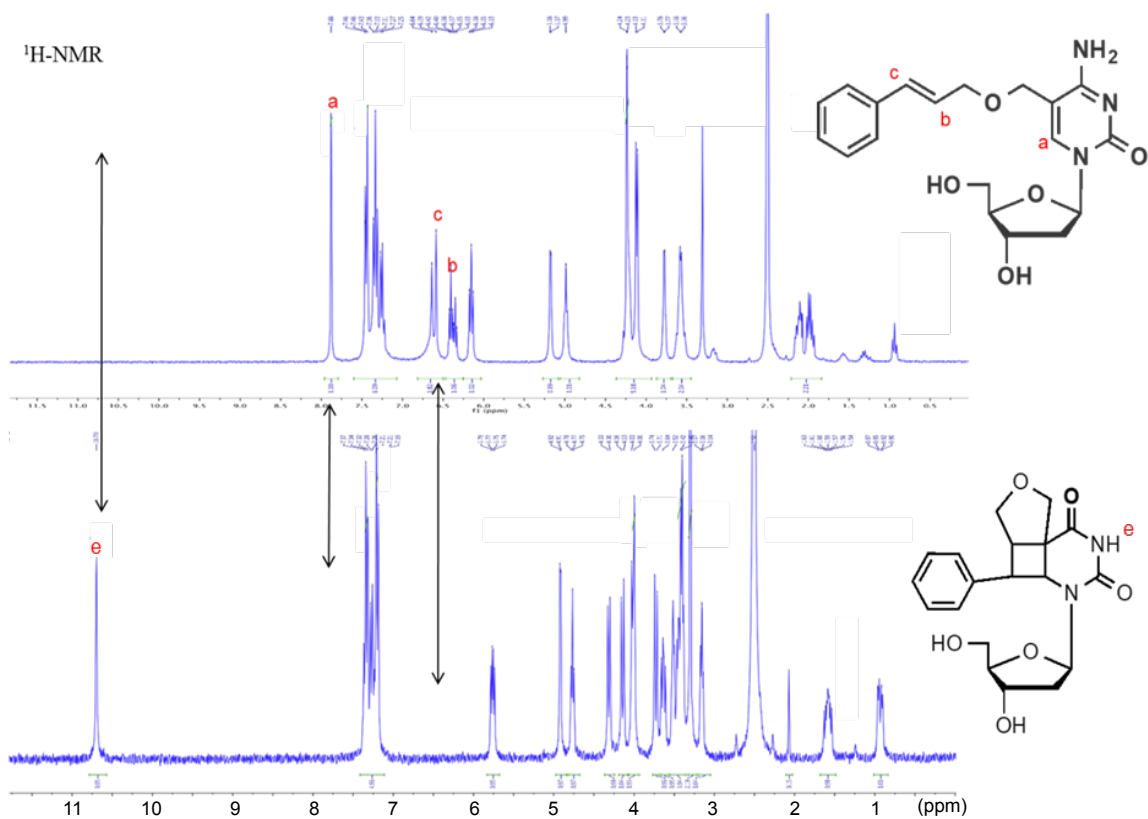


Figure S2: $^1\text{H-NMR}$ analysis of **1** (top) and isolated photoproduct **4** (bottom) in $\text{DMSO-}d_3$. In the photoproduct, protons a, b, and c (marked in red) are upfield shifted due to the loss of the double bond. In addition, the amide proton e (marked in red) is evident in the photoproduct. For simplicity, only the straight [2+2]-cycloadduct is shown.

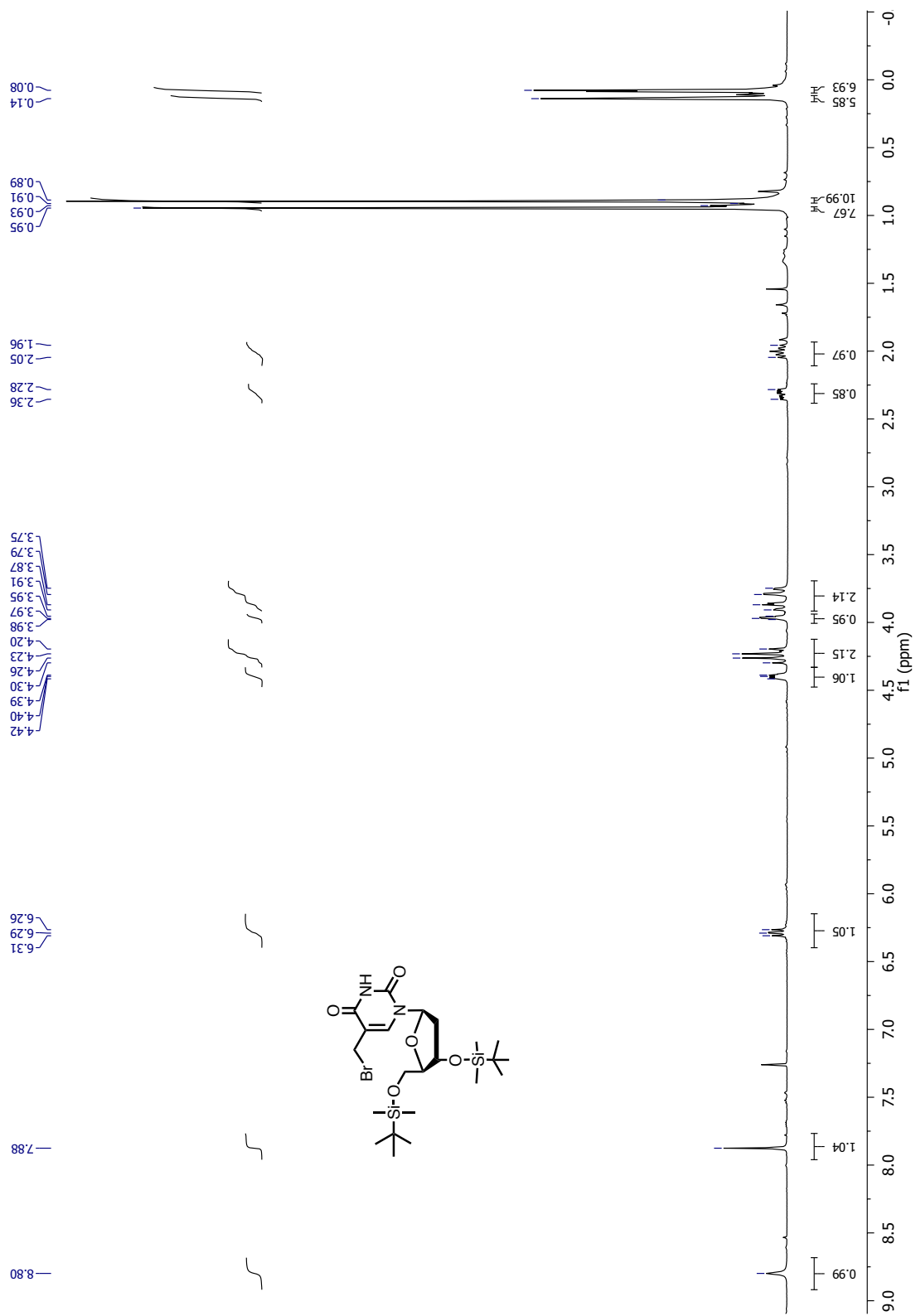


Figure S3: ¹H-NMR of 3'-5'-bis-*O*-(*tert*-butyldimethylsilyl)-thymidine (6) in CDCl₃.

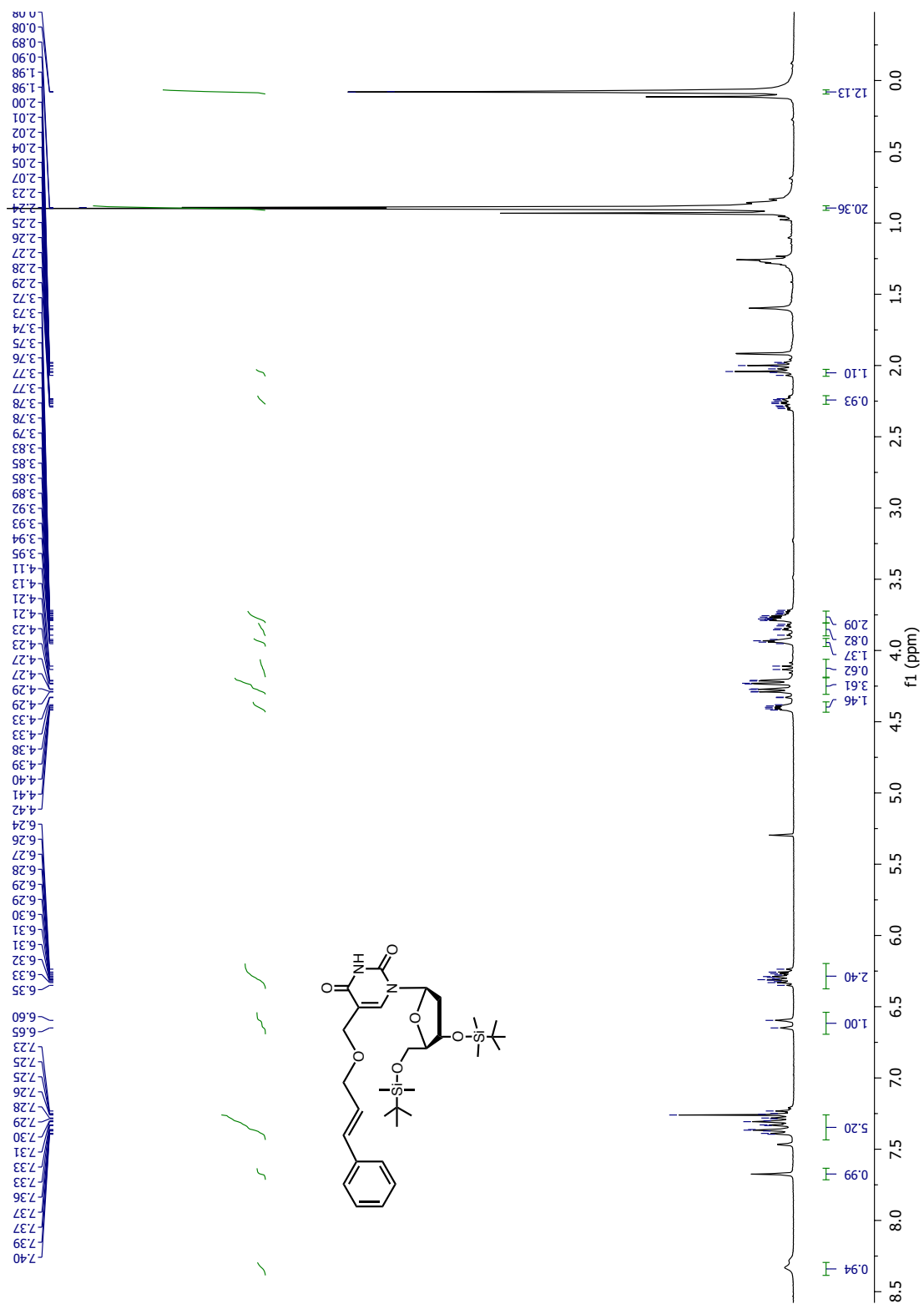


Figure S5: ¹H-NMR of 3'-5'-bis-*O*-(*tert*-butyldimethylsilyl)-5-cinnamyloxymethyl-deoxyuridine (**8**) in CDCl₃.

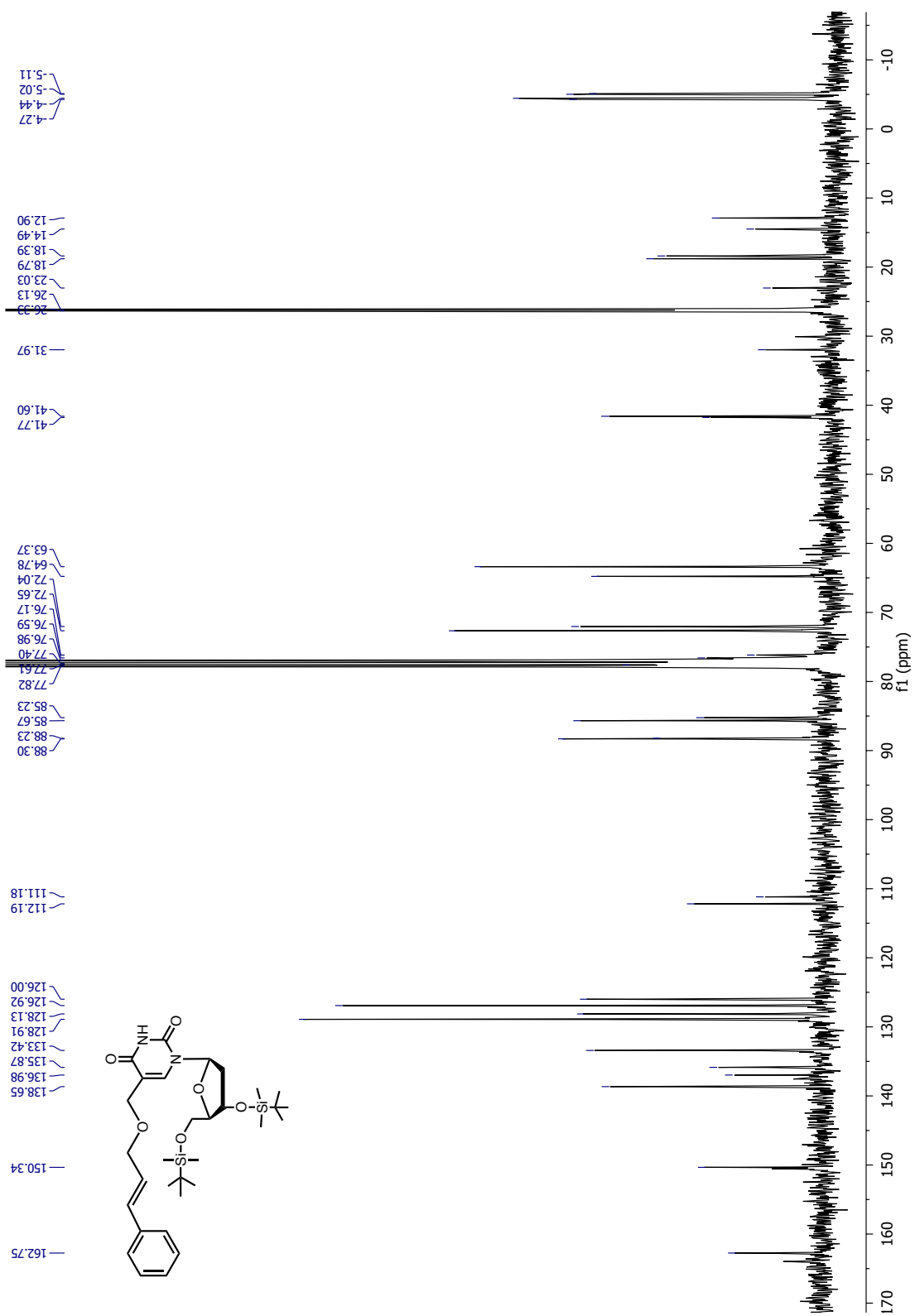


Figure S6: ^{13}C -NMR of 3'-5'-bis-*O*-(*tert*-butyldimethylsilyl)-5-cinnamyl oxymethyl-deoxyuridine (**8**) in CDCl_3 .

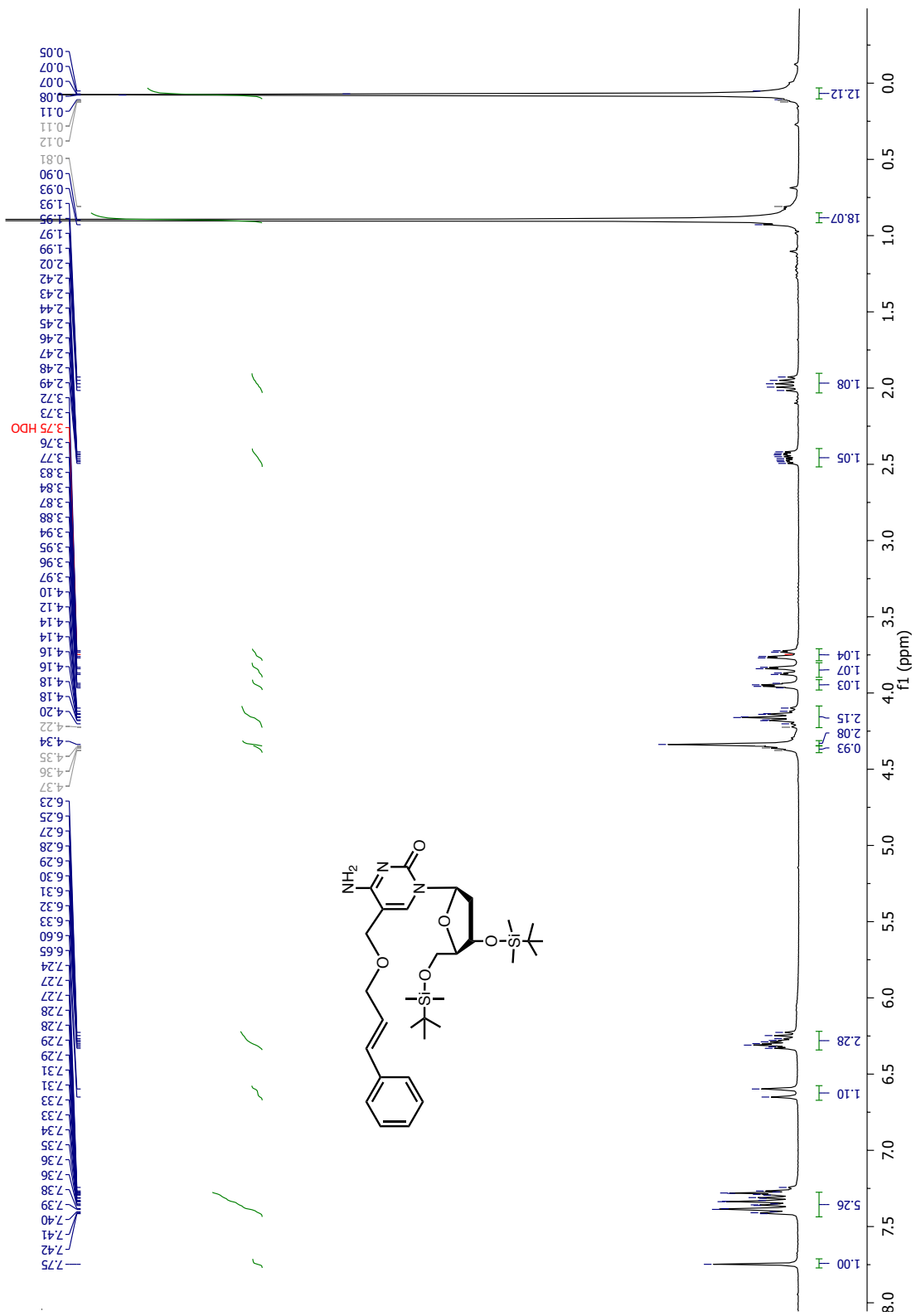


Figure S7: ¹H-NMR of 3'-5'-bis-O-(*tert*-butyldimethylsilyl)-5-cinnamyloxymethyl-deoxycytidine (**10**) in CDCl₃.

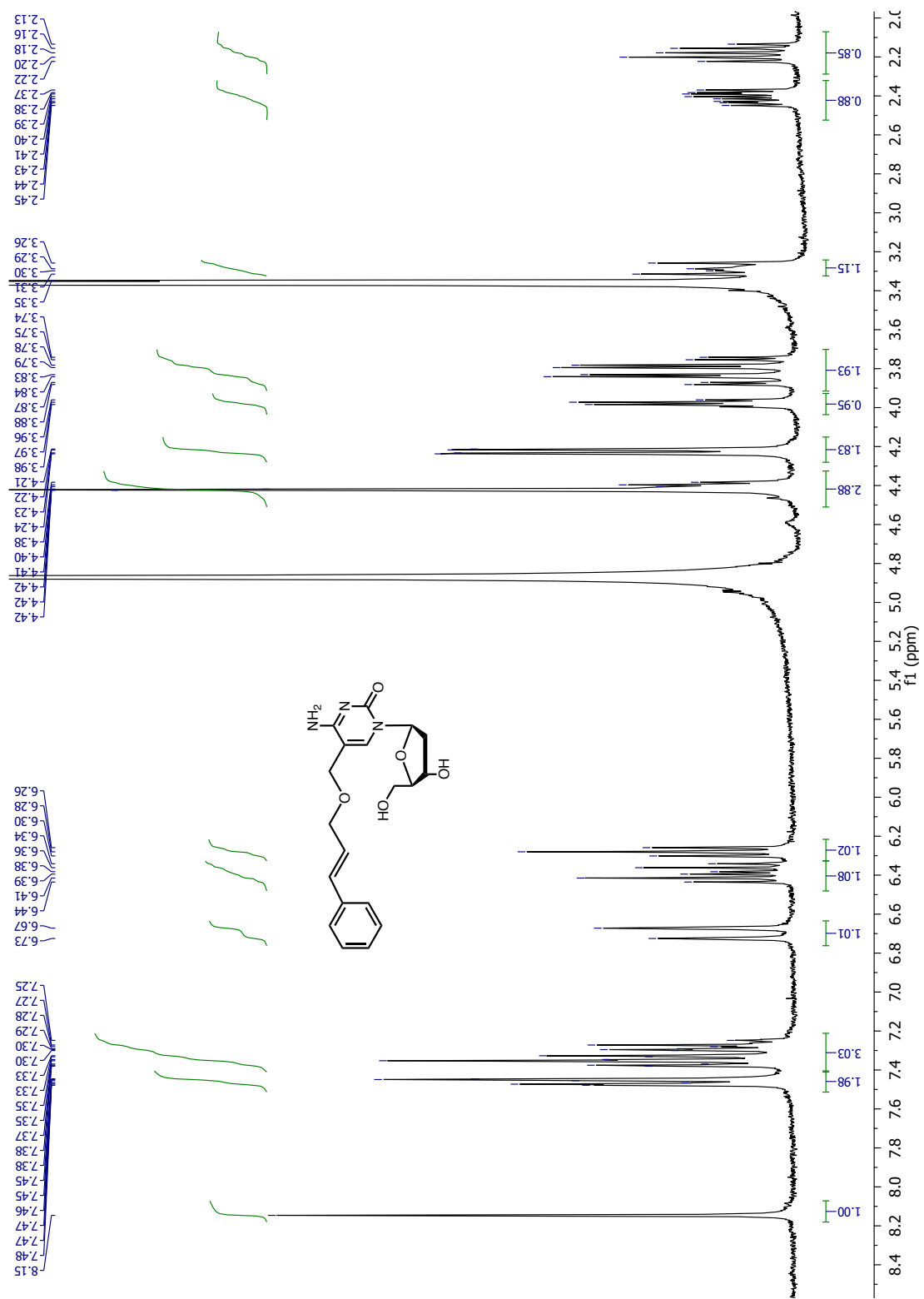


Figure S8: ¹H-NMR of 5-cinnamyloxymethyl-deoxycytidine (**1**) in CDCl₃.

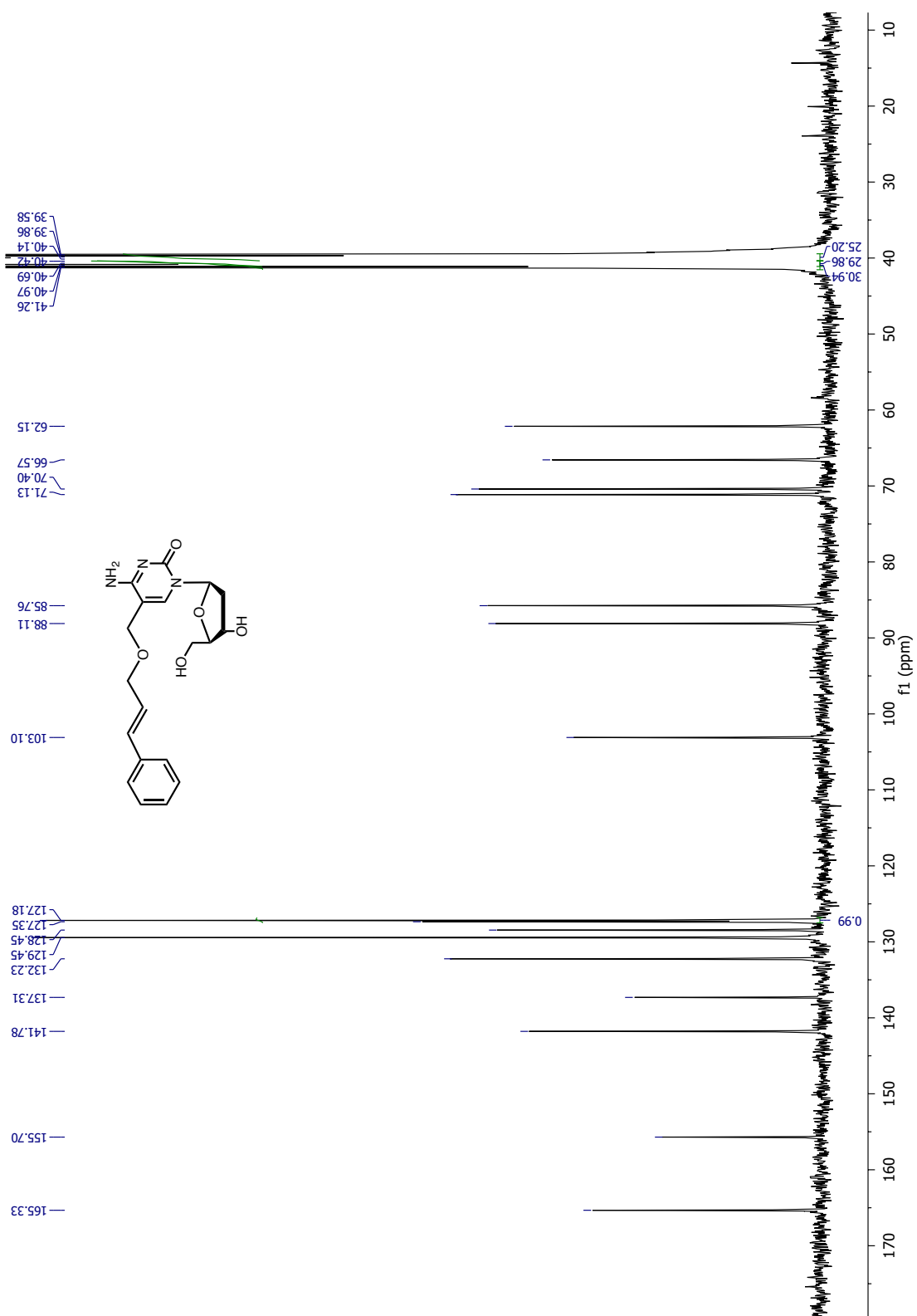


Figure S9: ^{13}C -NMR of 5-cinnamyloxymethyl-deoxycytidine (**1**) in CDCl_3 .

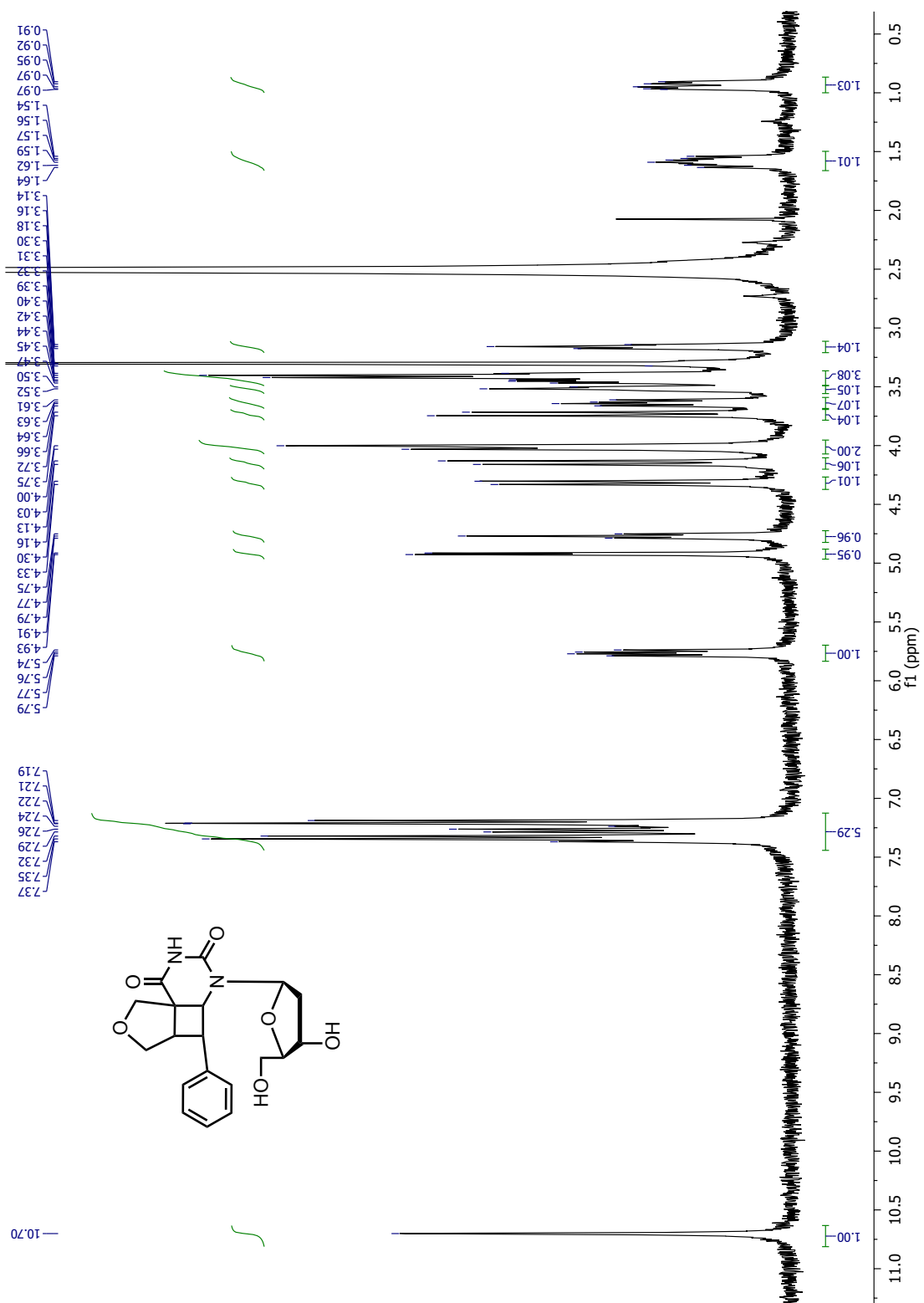


Figure S10: $^1\text{H-NMR}$ of photoproduct 4 in $\text{DMSO-}d_3$.

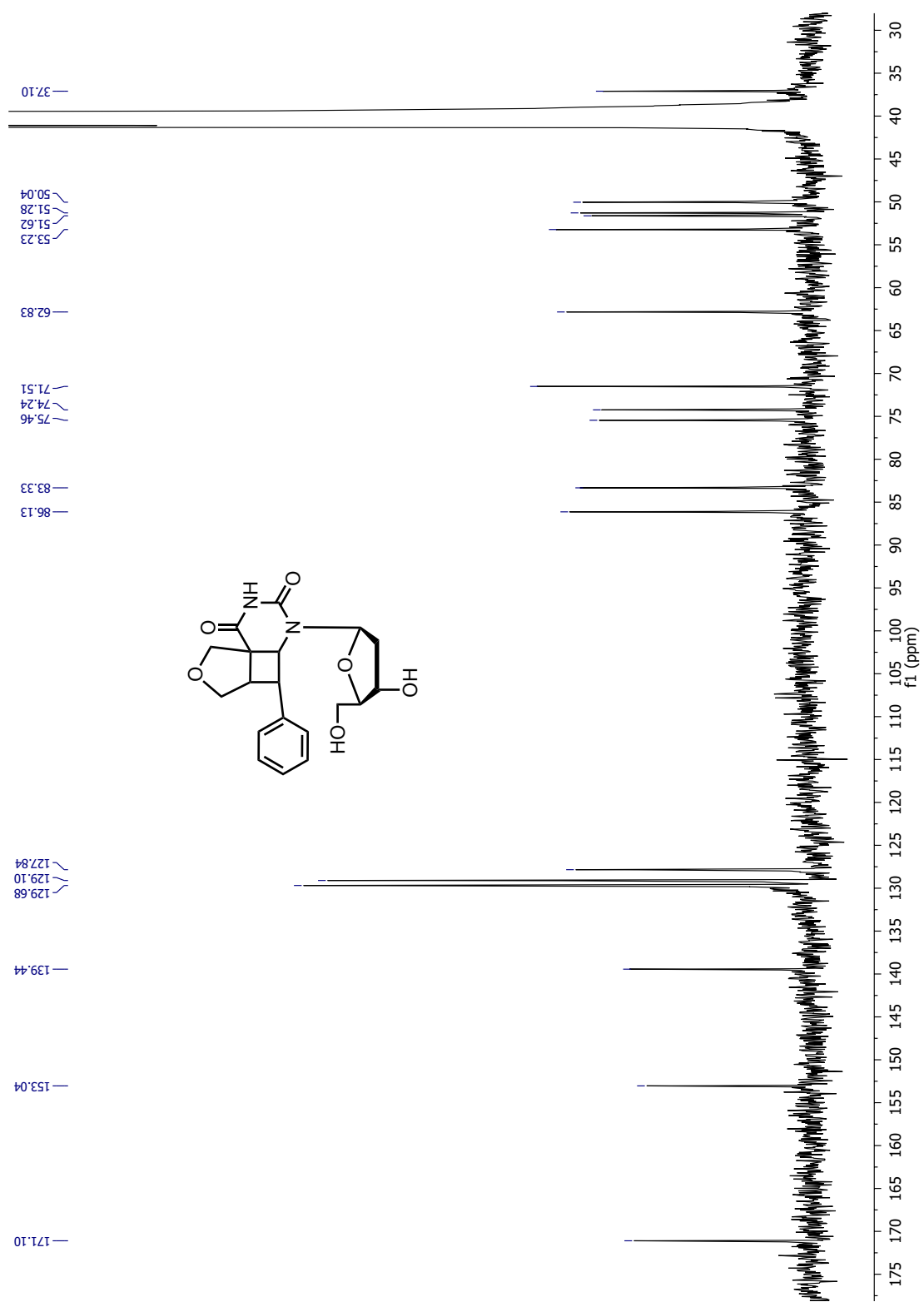


Figure S11: ^{13}C -NMR of photoproduct 4 in $\text{DMSO-}d_3$.