High-Affinity Alkynyl Bisubstrate Inhibitors of NicotinamideN-Methyltransferase (NNMT)

High-Affinity Alkynyl Bisubstrate Inhibitors of Nicotinamide N-Methyltransferase (NNMT)

Supporting Information Part 2: NMR Spectra

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§BioKin Ltd., Watertown MA 02472, USA
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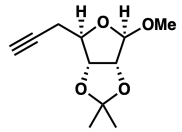
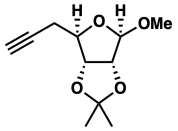
⋆Sanofi Research and Development, Industriepark Hoechst, H823, D-65926, Frankfurt am Main, Germany

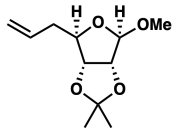
List of NMR Spectra



2, ^{1}H, 600 MHz, $CDCl_3$



2, ^{13}C, 151 MHz, $CDCl_3$



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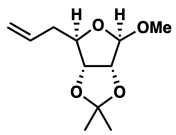
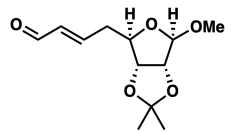
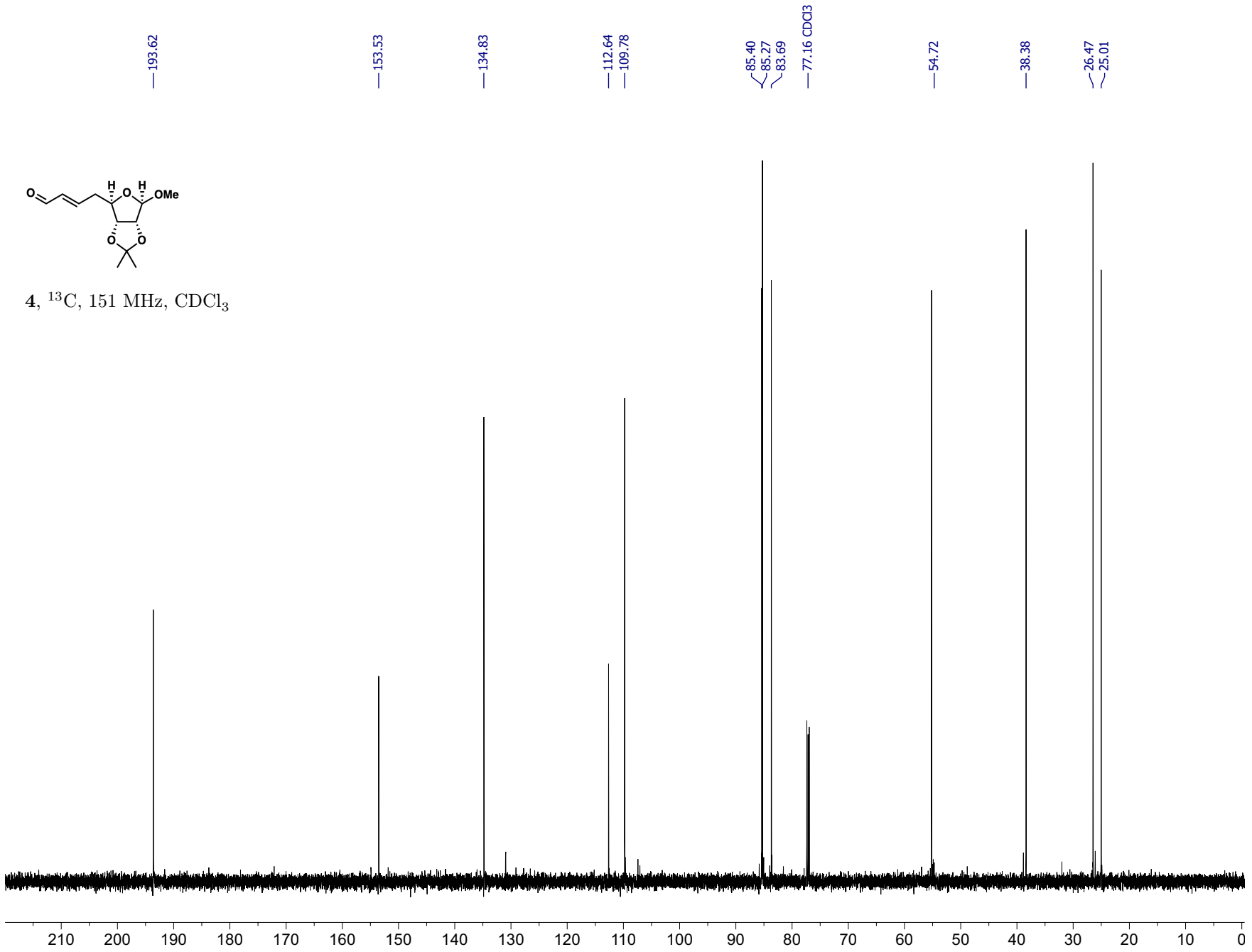


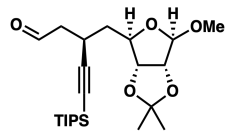
3, ^{13}C, 126 MHz, $CDCl_3$



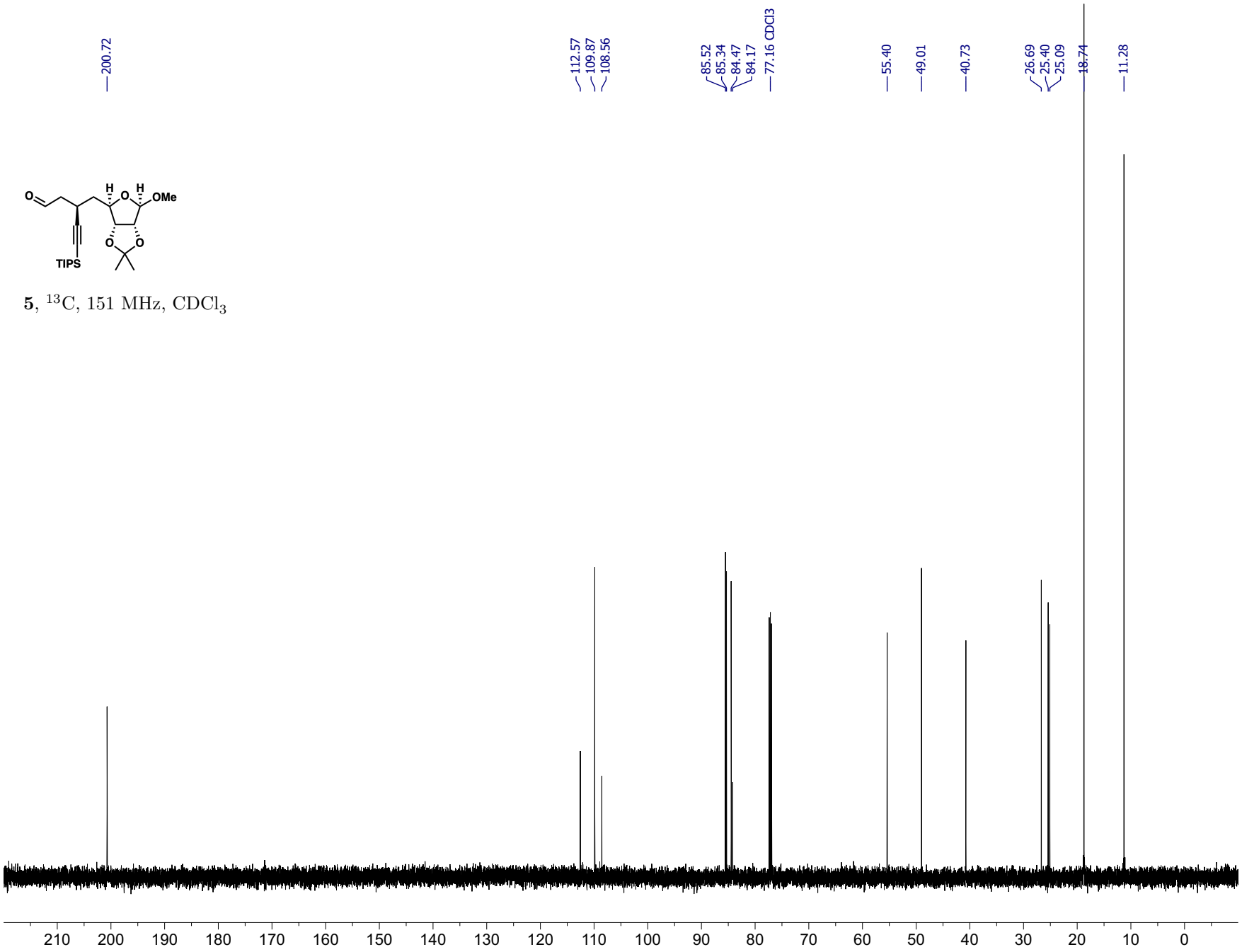
4, ^{1}H, 500 MHz, $CDCl_3$



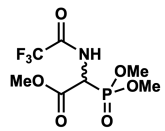
4, ^{13}C, 151 MHz, $CDCl_3$



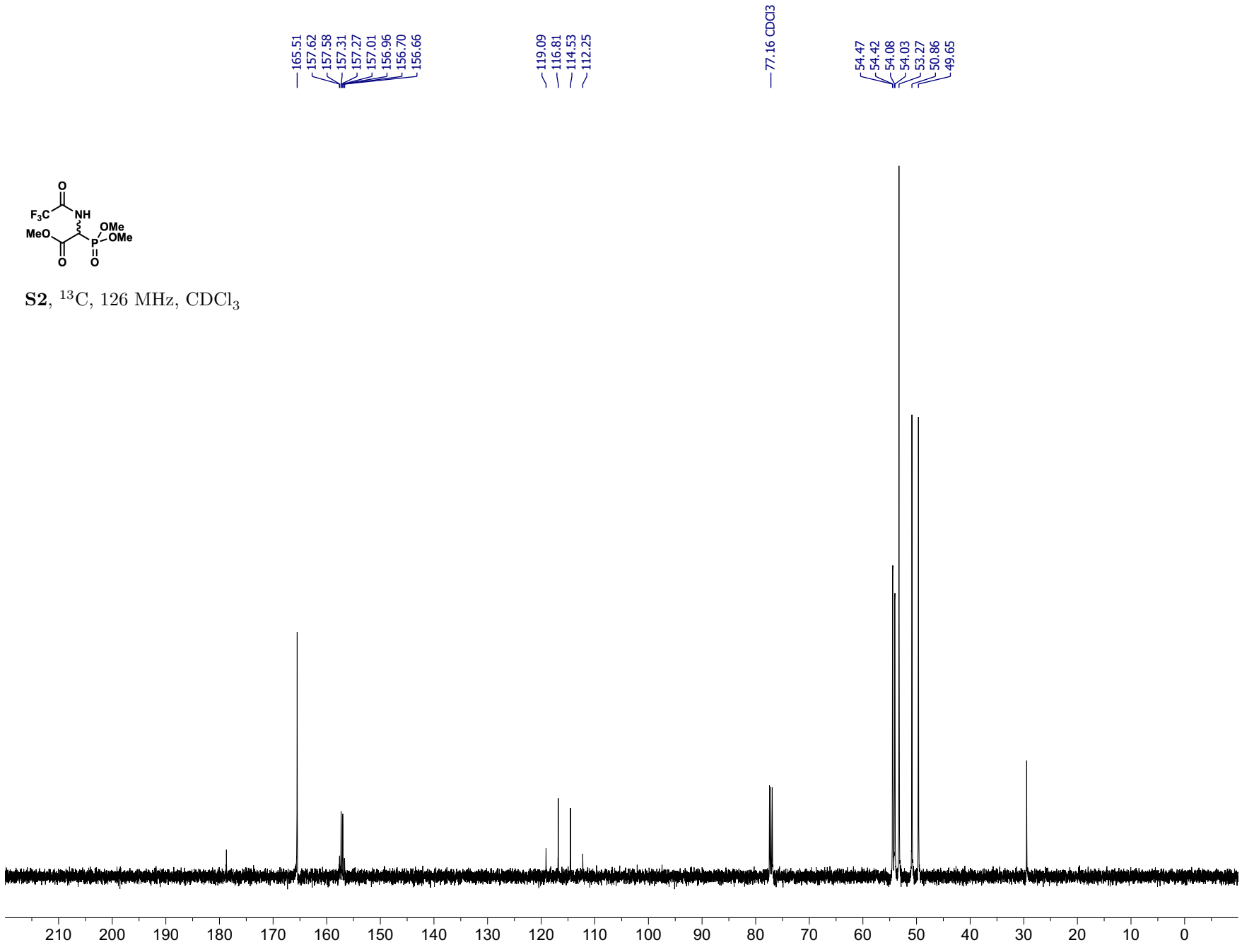
5, ^{1}H, 600 MHz, $CDCl_3$



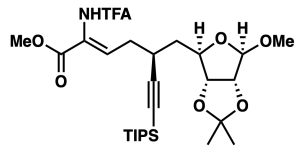
5, ^{13}C, 151 MHz, $CDCl_3$



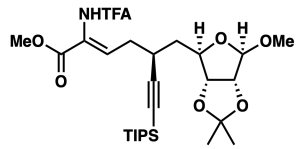
S2, ^{1}H, 600 MHz, $CDCl_3$



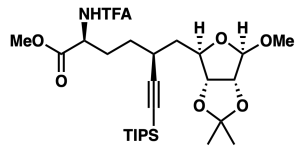
S2, ^{13}C, 126 MHz, $CDCl_3$



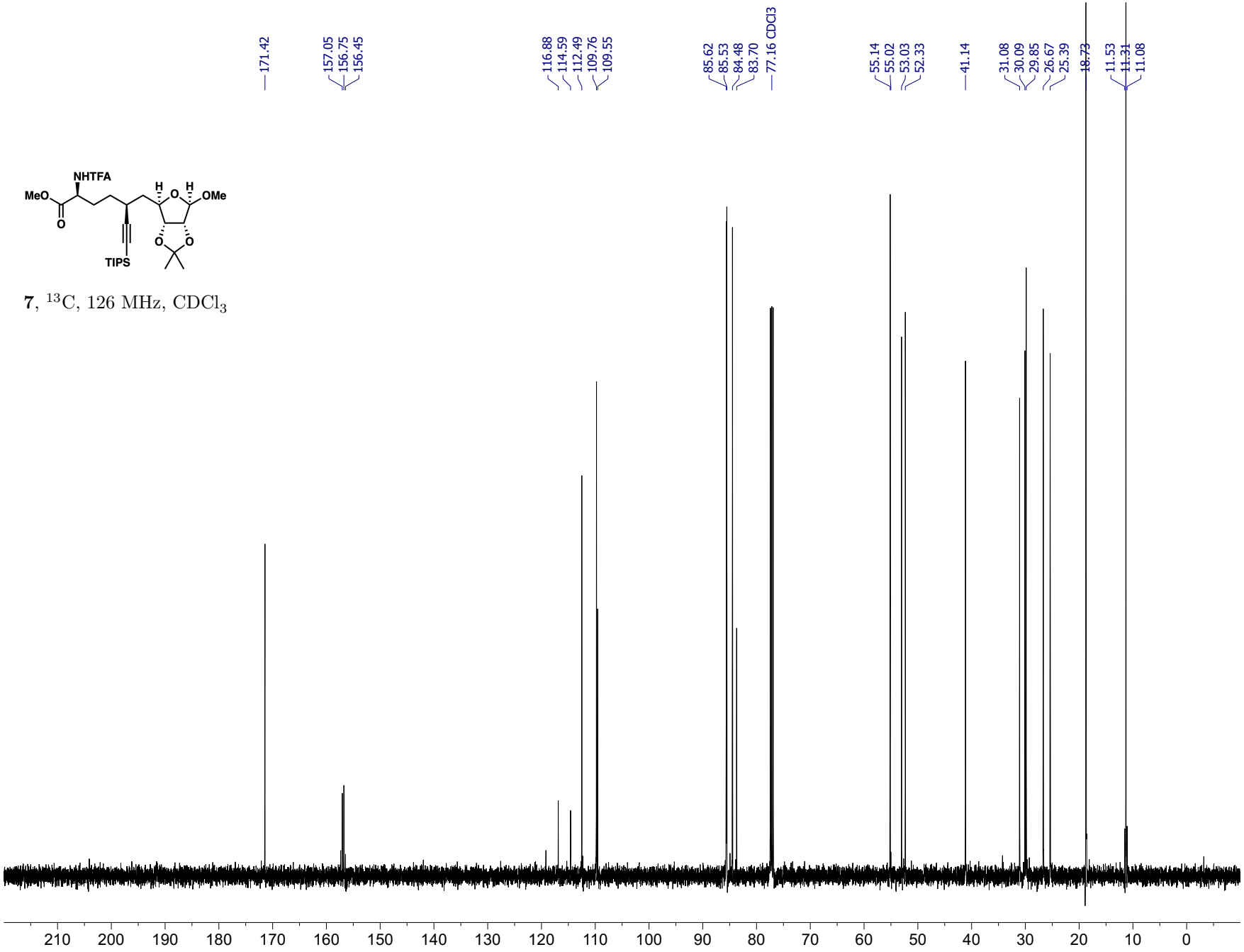
6, ^{1}H, 600 MHz, $CDCl_3$



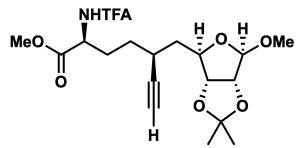
6, ^{13}C, 126 MHz, $CDCl_3$



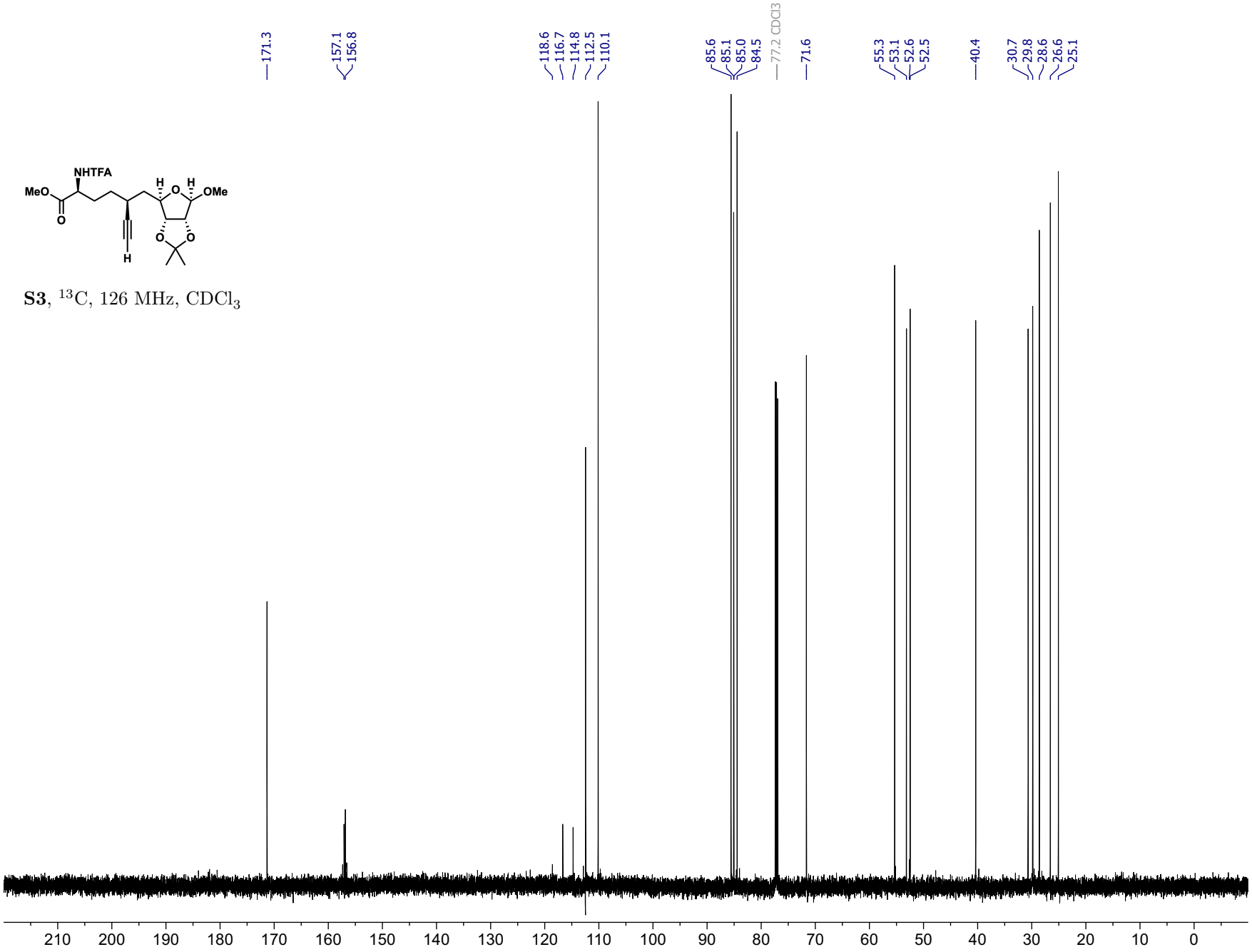
7, ^{1}H, 600 MHz, $CDCl_3$



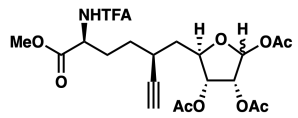
7, ^{13}C, 126 MHz, $CDCl_3$



S3, ^{1}H, 600 MHz, $CDCl_3$



S3, ^{13}C, 126 MHz, $CDCl_3$



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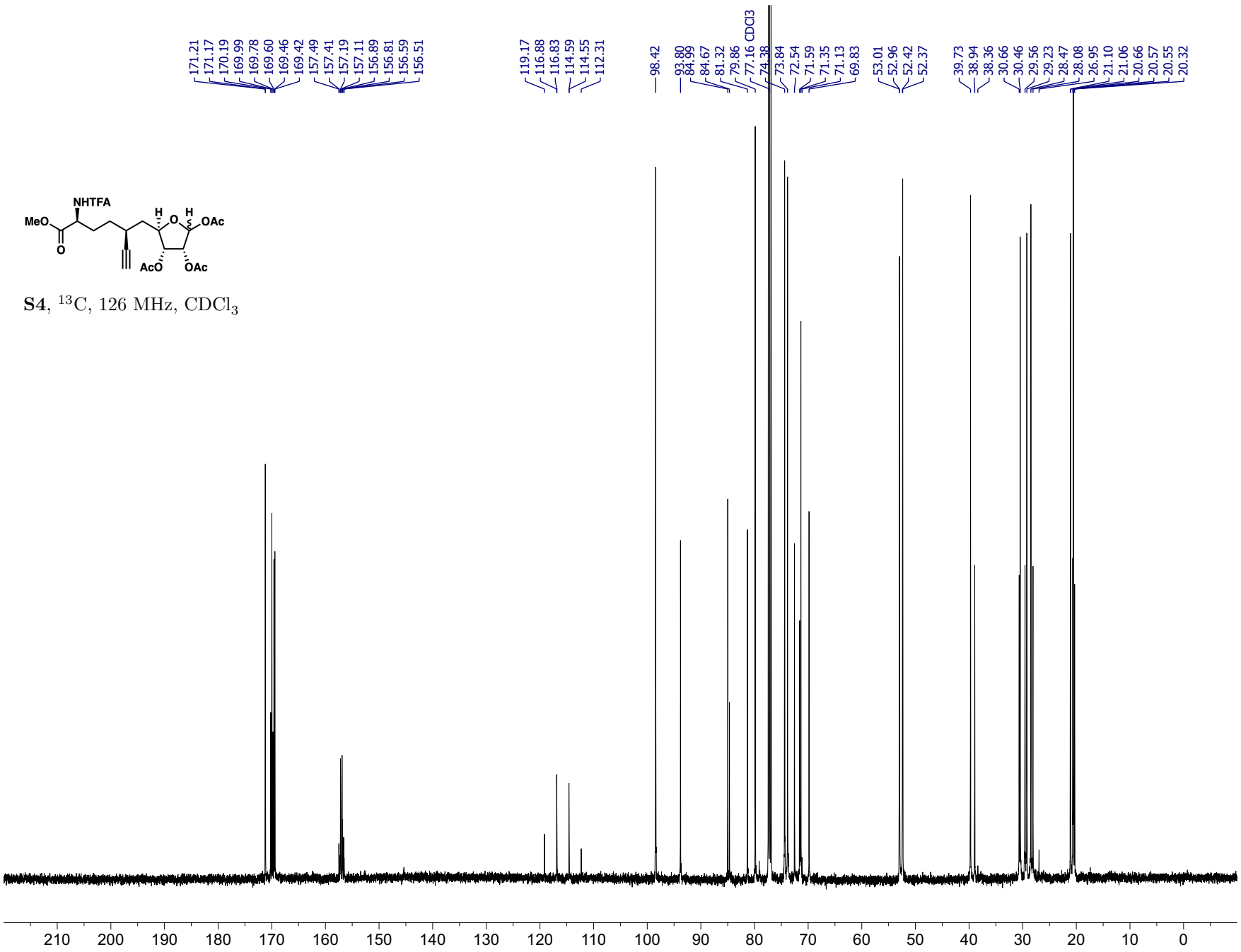
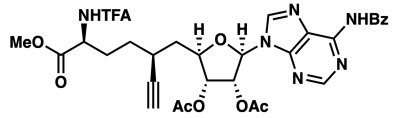
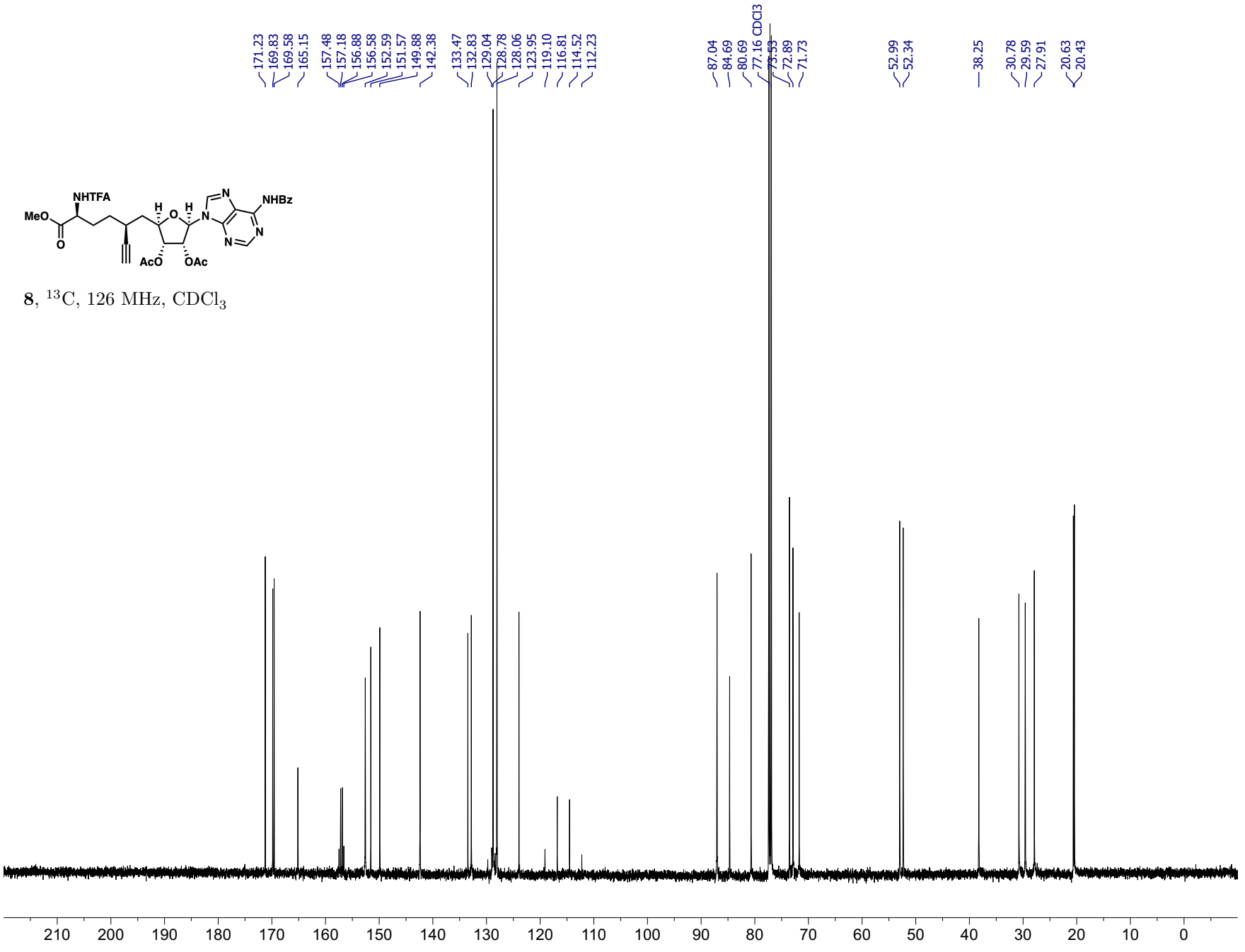


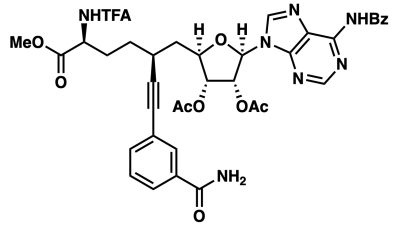
S4, ^{13}C, 126 MHz, $CDCl_3$



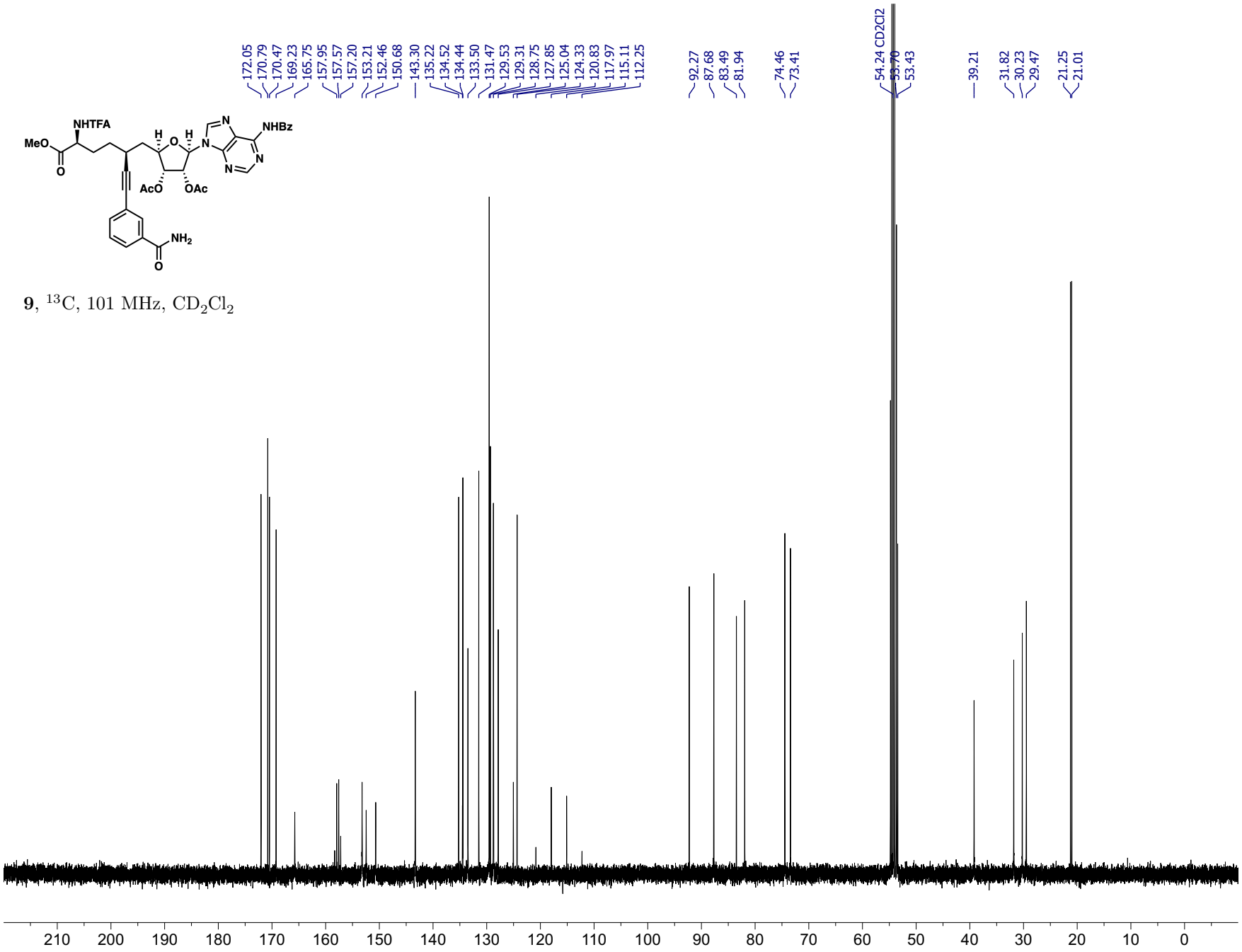
8, ^{1}H, 500 MHz, $CDCl_3$



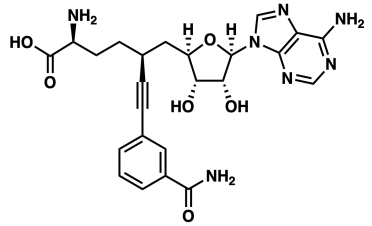
8, ^{13}C, 126 MHz, $CDCl_3$



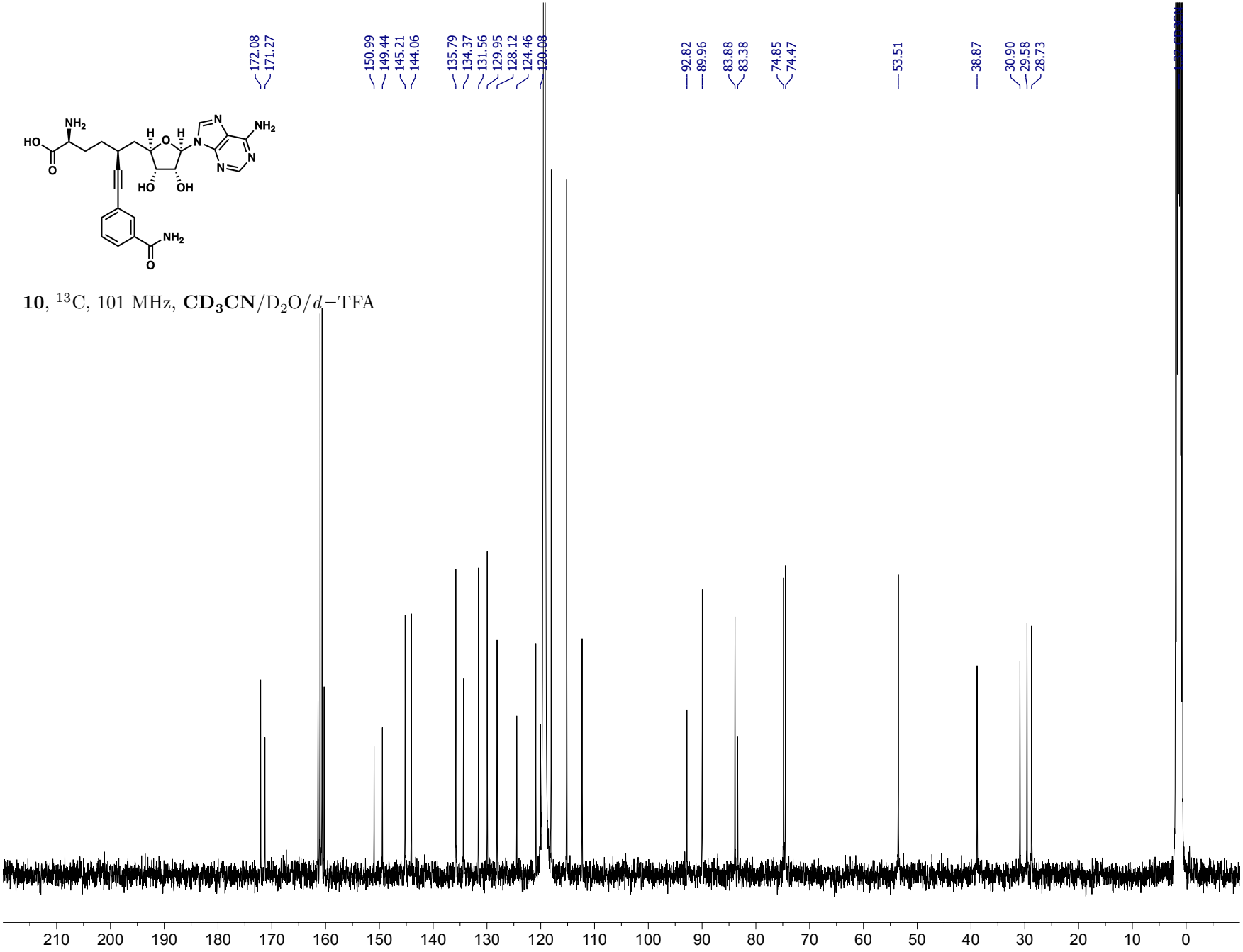
9, ^{1}H, 600 MHz, CD_2Cl_2



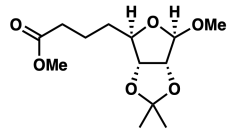
9, ^{13}C, 101 MHz, CD_2Cl_2



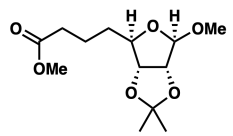
10, ^{1}H, 600 MHz, $\mathbf{CD_3CN}$/D_2O/*d*−TFA



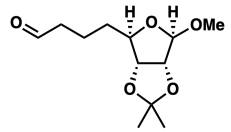
10, ^{13}C, 101 MHz, $\mathbf{CD_3CN}$/D_2O/*d*$_1$−TFA



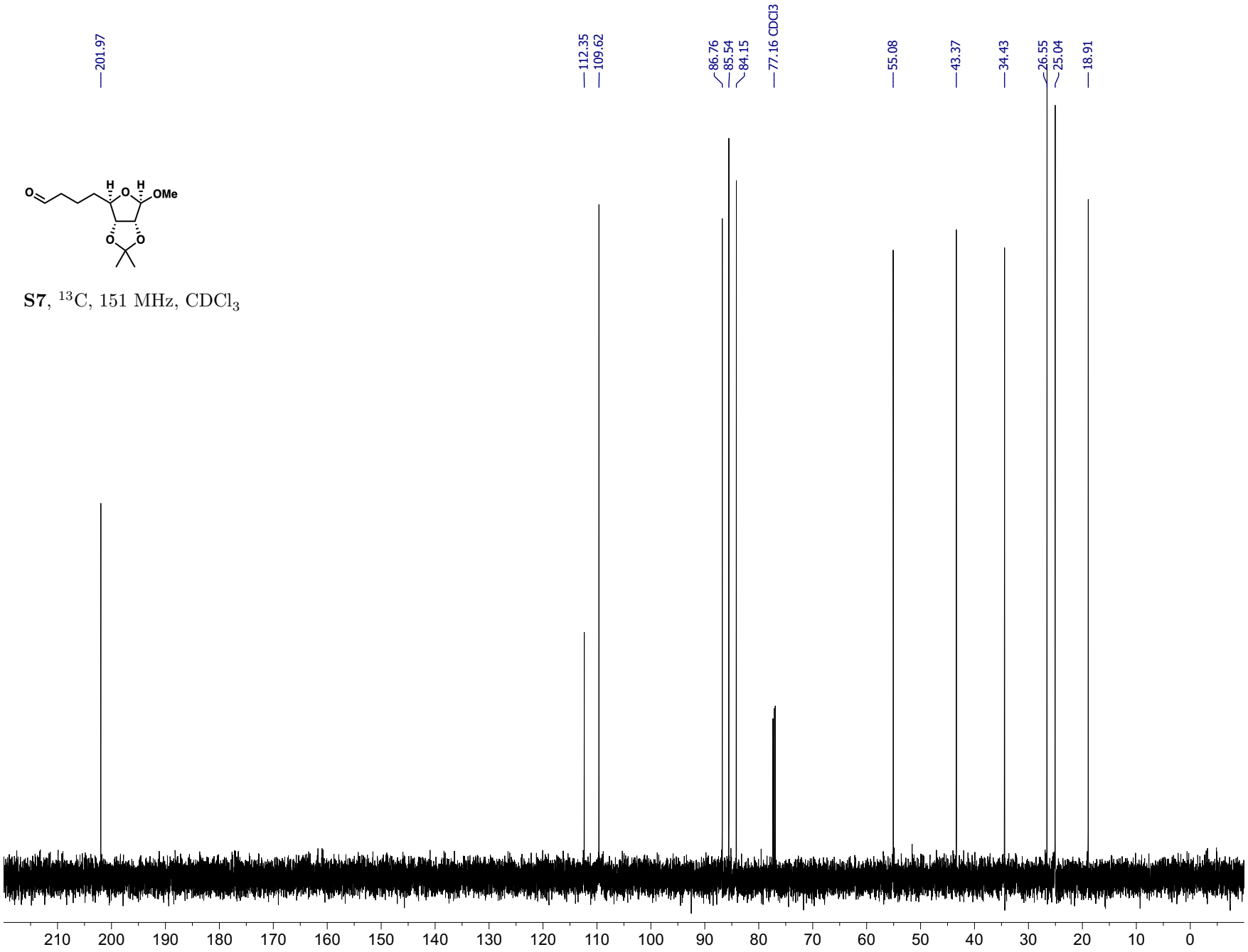
S6, ^{1}H, 600 MHz, $CDCl_3$



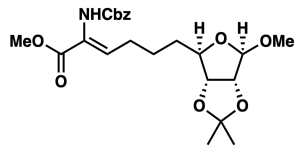
S6, ^{13}C, 151 MHz, $CDCl_3$



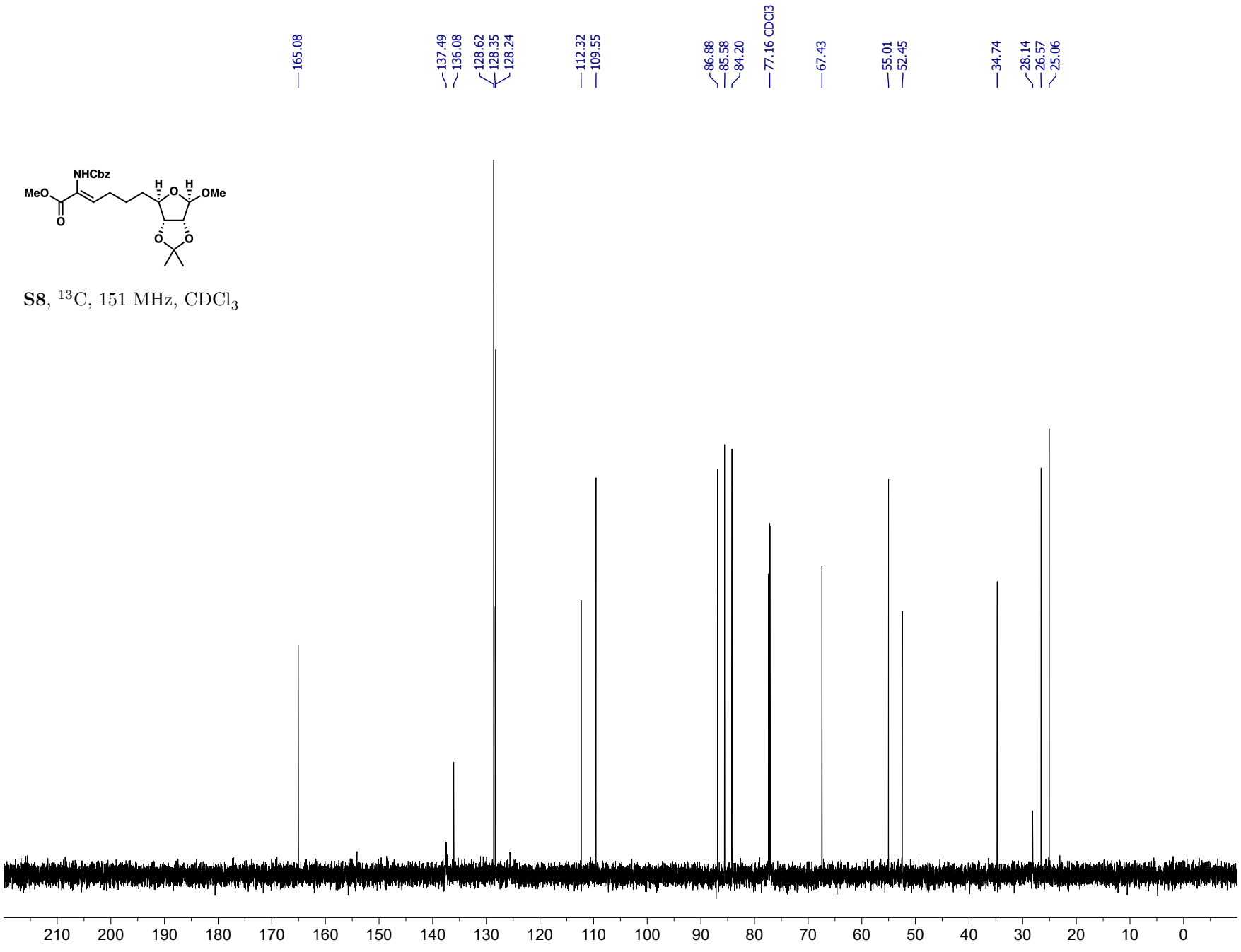
S7, ^{1}H, 600 MHz, $CDCl_3$



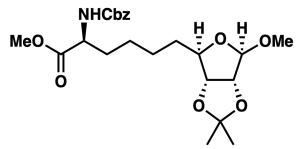
S7, ^{13}C, 151 MHz, $CDCl_3$



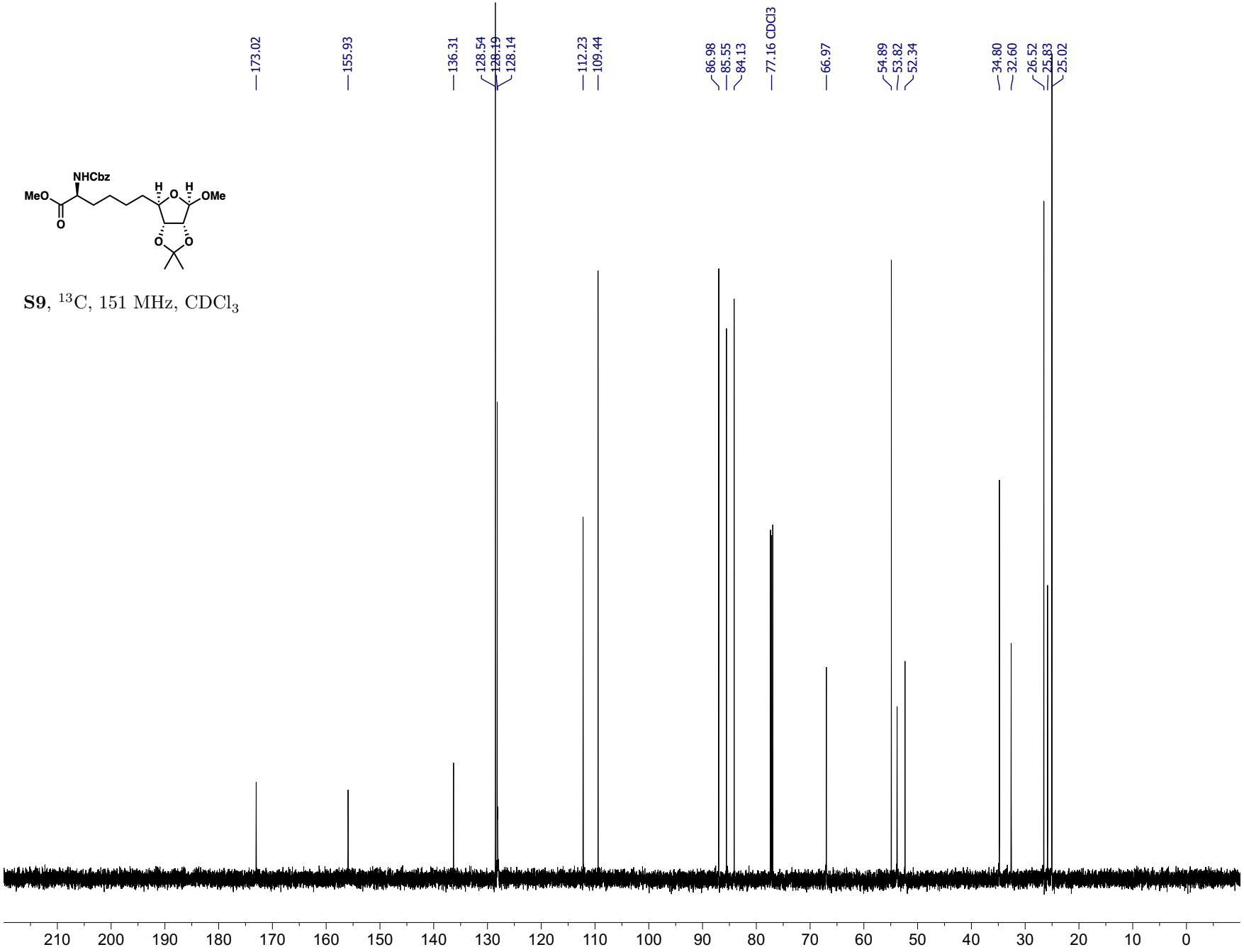
S8, ^{1}H, 600 MHz, $CDCl_3$



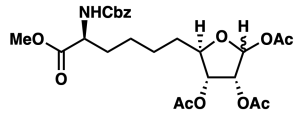
S8, ^{13}C, 151 MHz, $CDCl_3$



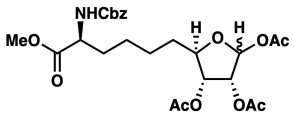
S9, ^{1}H, 600 MHz, $CDCl_3$



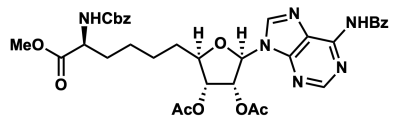
S9, ^{13}C, 151 MHz, $CDCl_3$



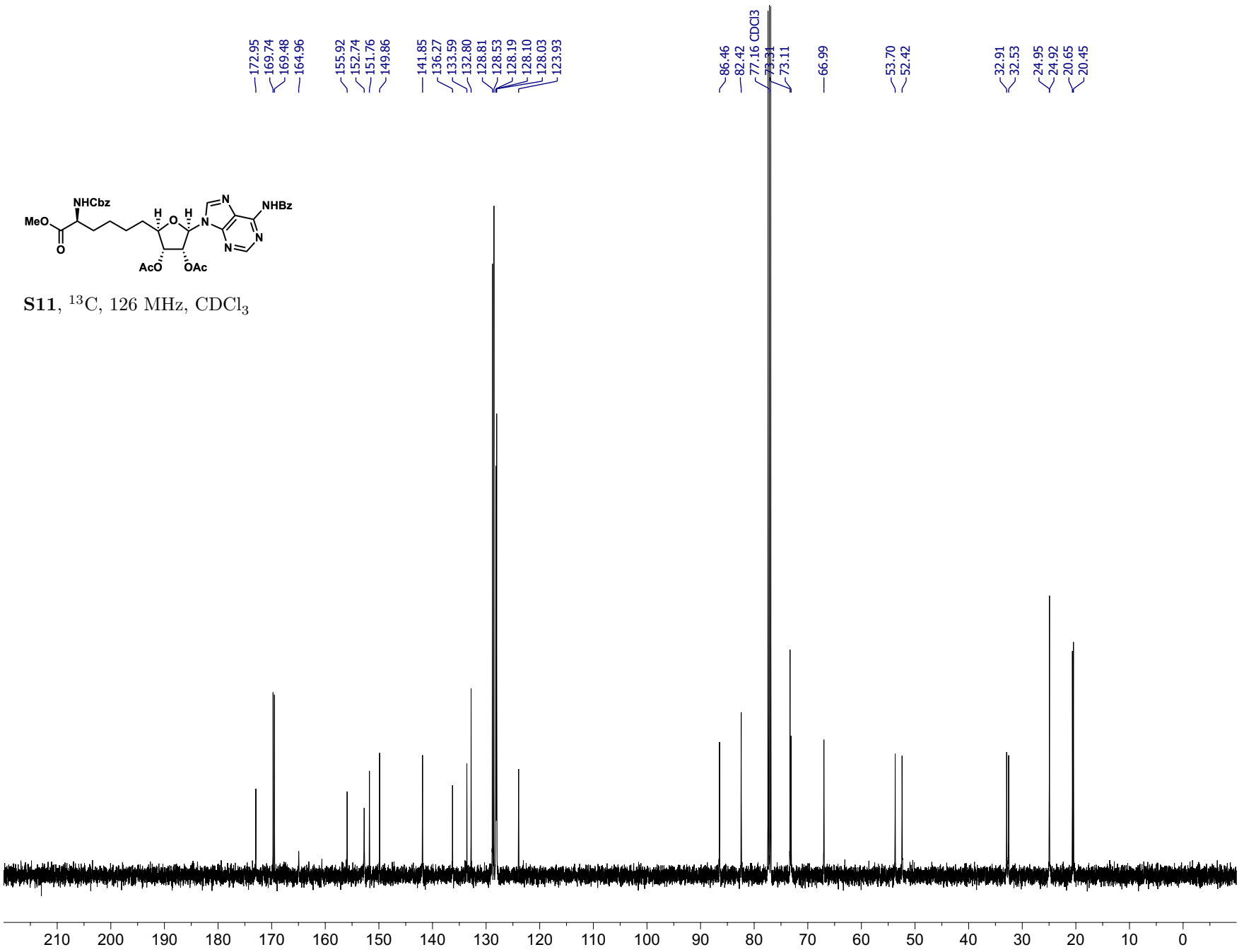
S10, ^{1}H, 600 MHz, $CDCl_3$



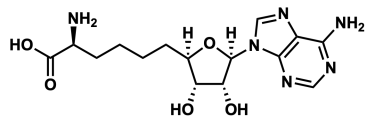
S10, ^{13}C, 126 MHz, $CDCl_3$



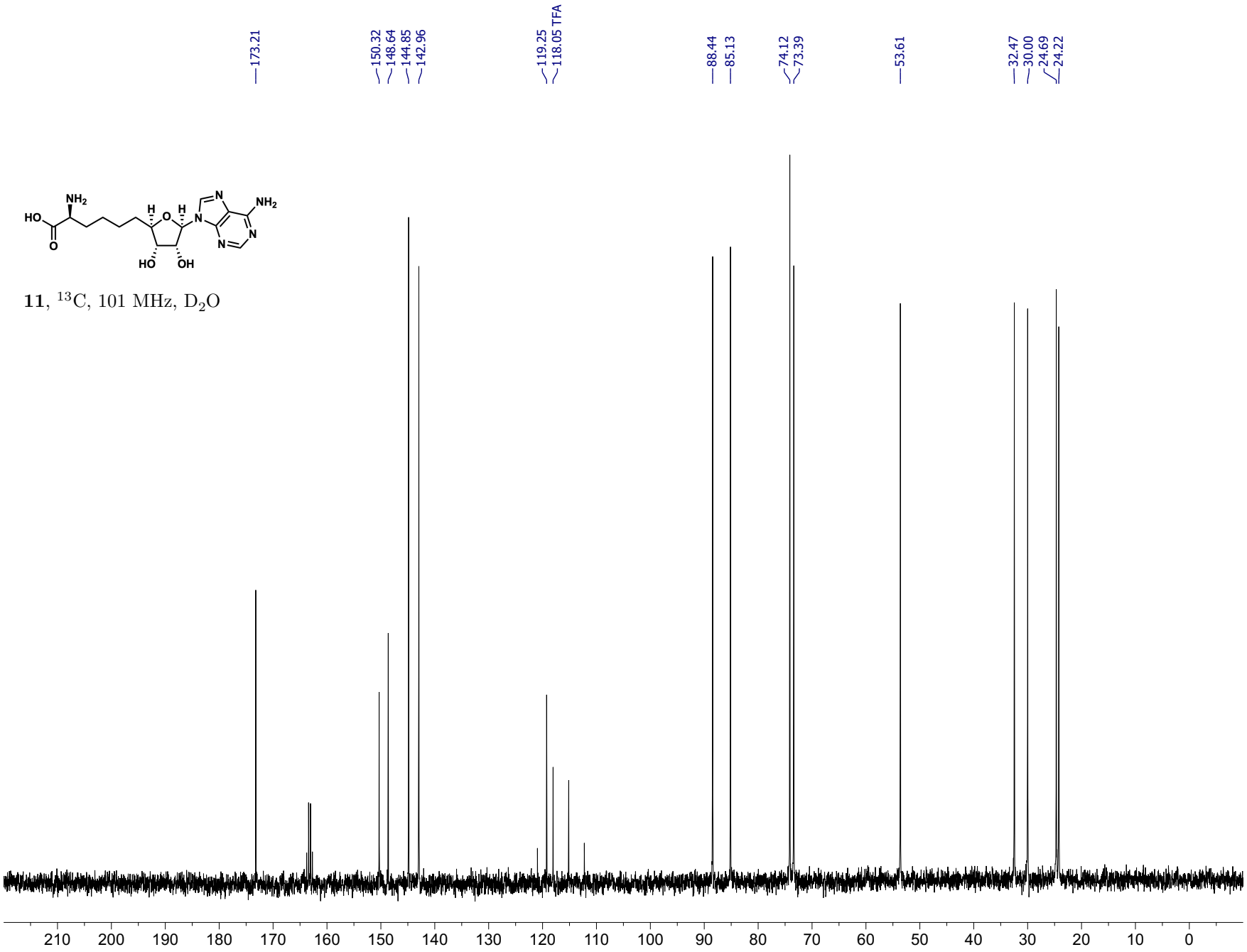
S11, ^{1}H, 600 MHz, $CDCl_3$



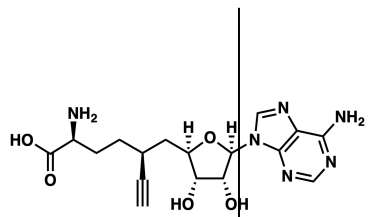
S11, ^{13}C, 126 MHz, $CDCl_3$



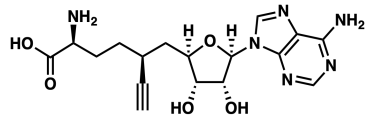
11, ^{1}H, 600 MHz, D_2O



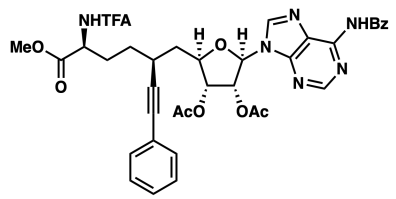
11, ^{13}C, 101 MHz, D_2O



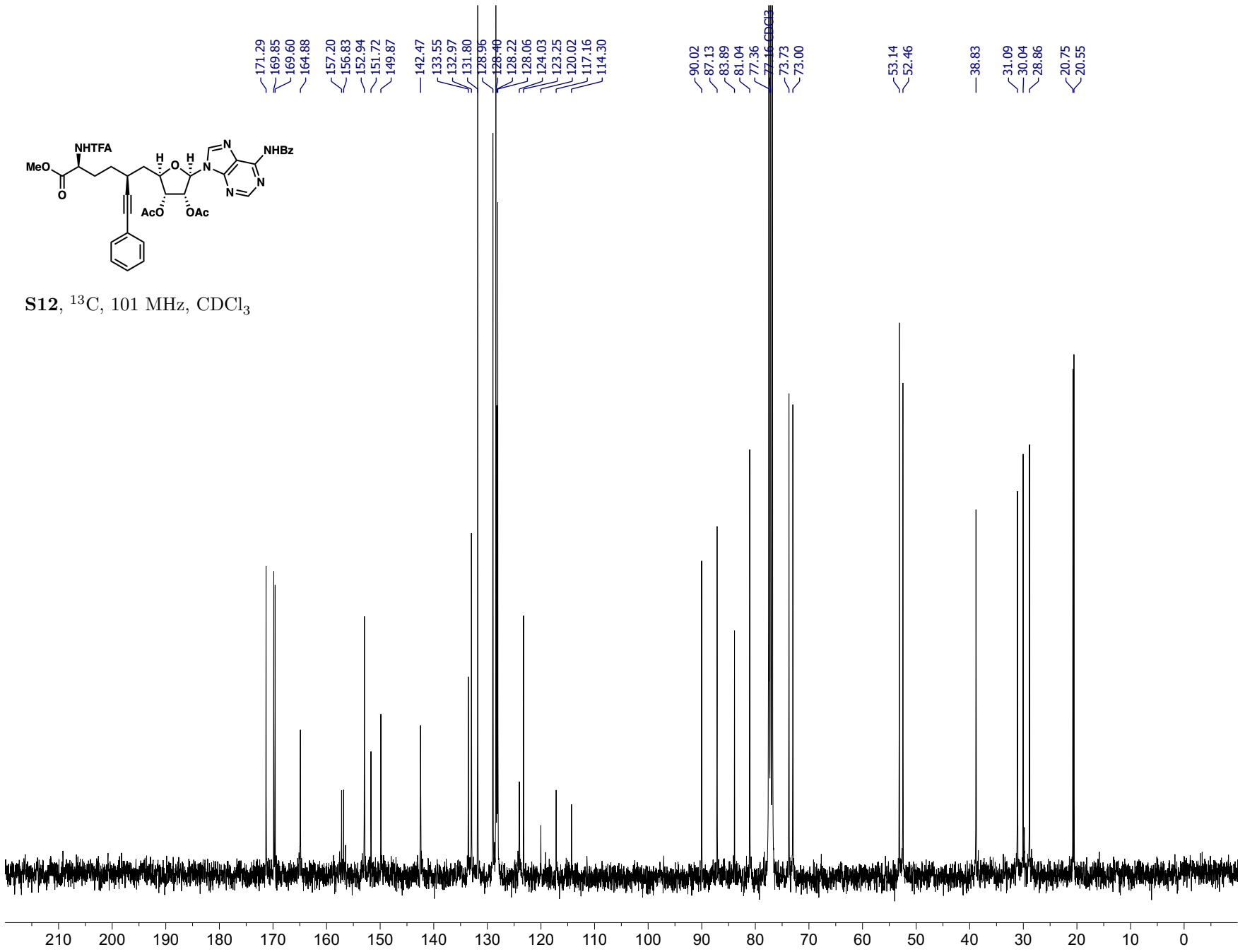
12, ^{1}H, 500 MHz, $CD_3CN/\mathbf{D_2O}/d-$TFA



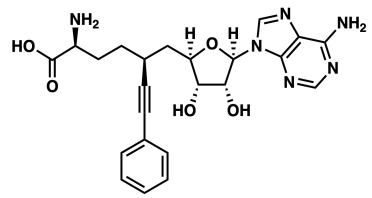
12, ^{13}C, 126 MHz, $\mathbf{CD_3CN}$/D_2O/d−TFA



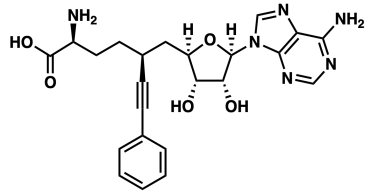
S12, ^{1}H, 500 MHz, $CDCl_3$



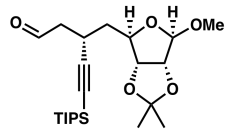
S12, ^{13}C, 101 MHz, $CDCl_3$



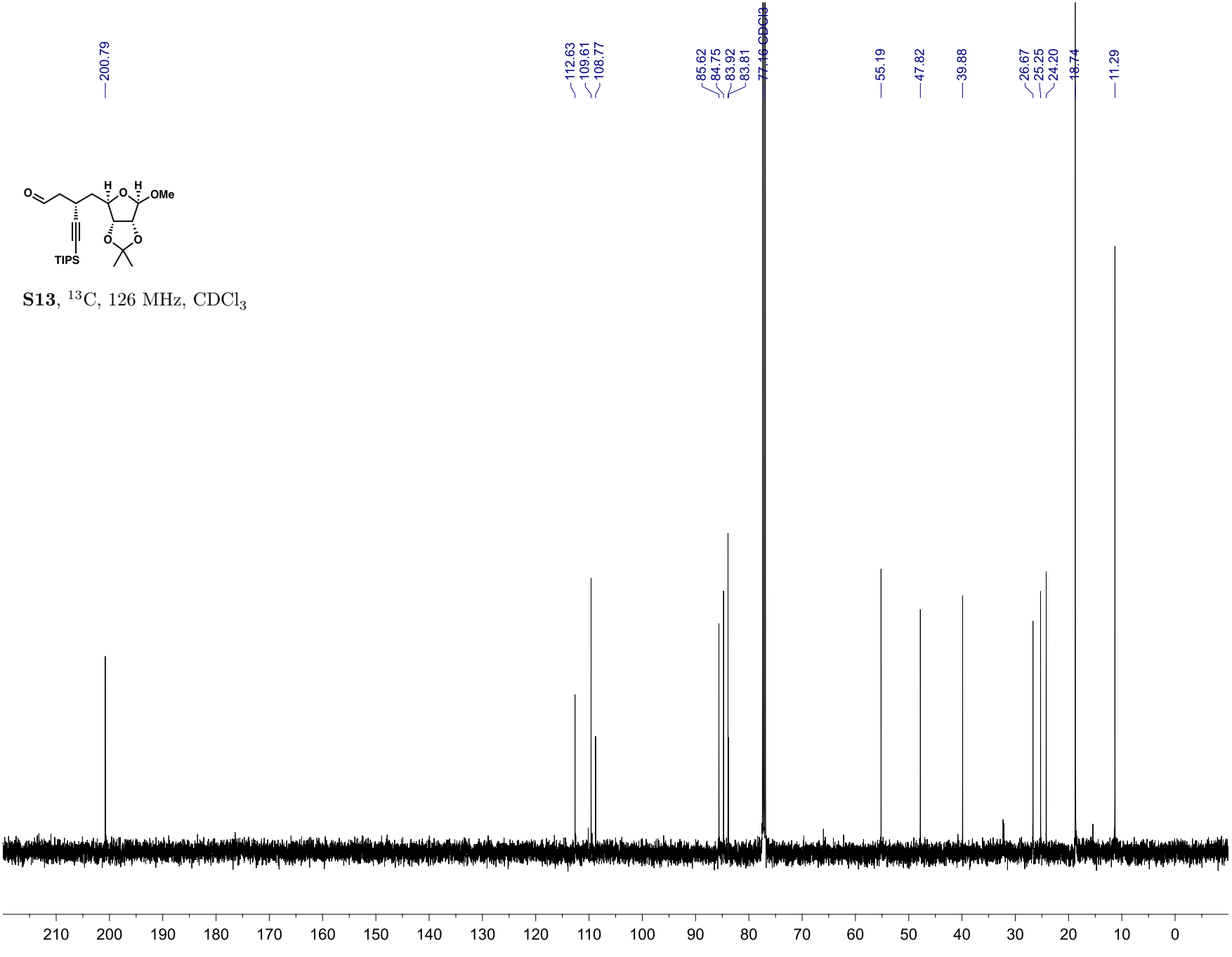
13, ^{1}H, 600 MHz, $CD_3CN/\mathbf{D_2O}/d-$TFA



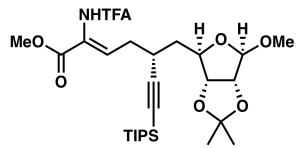
13, ^{13}C, 126 MHz, $\mathbf{CD_3CN}$/D_2O/d−TFA



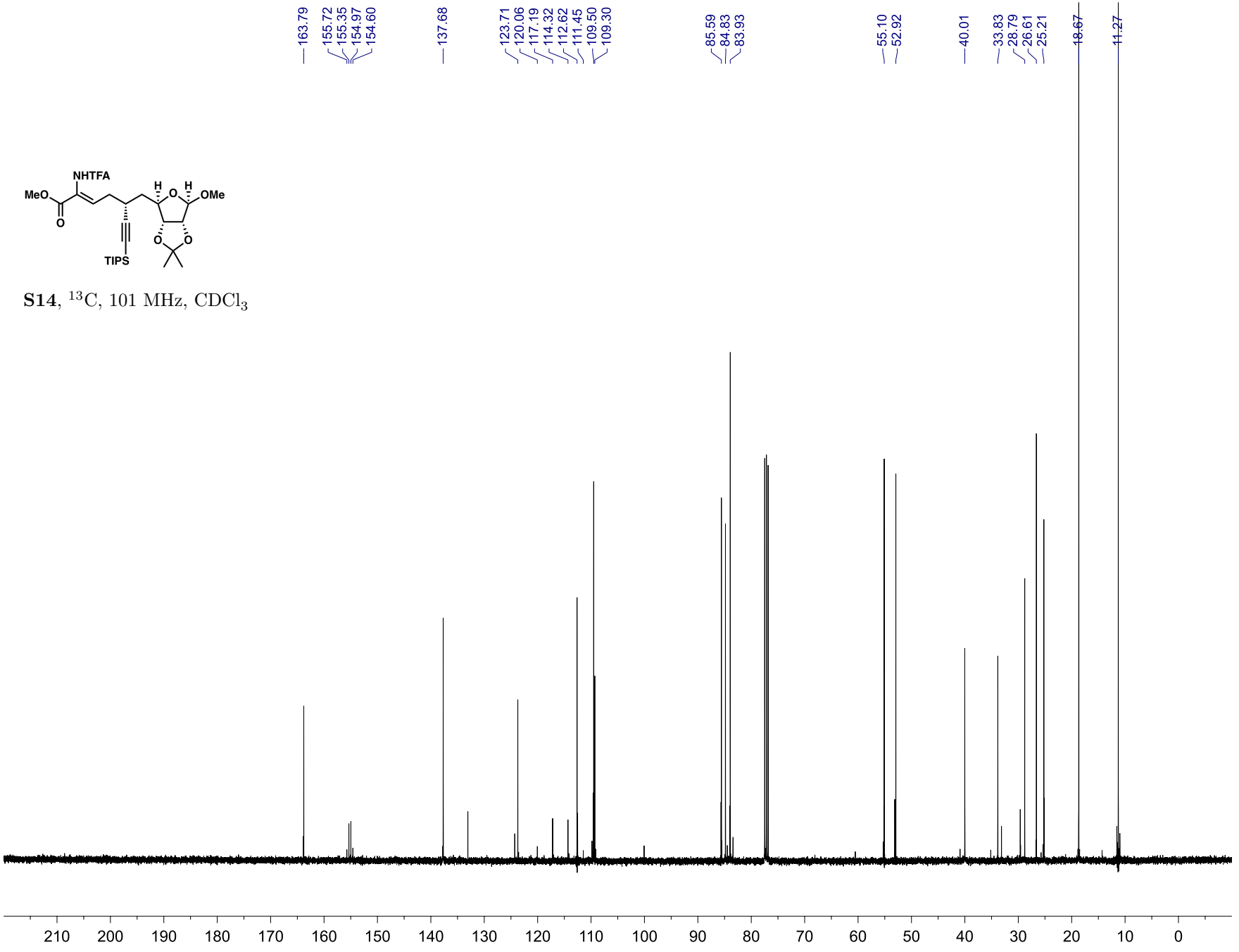
S13, ^{1}H, 600 MHz, $CDCl_3$



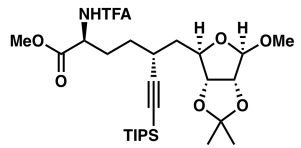
S13, ^{13}C, 126 MHz, $CDCl_3$



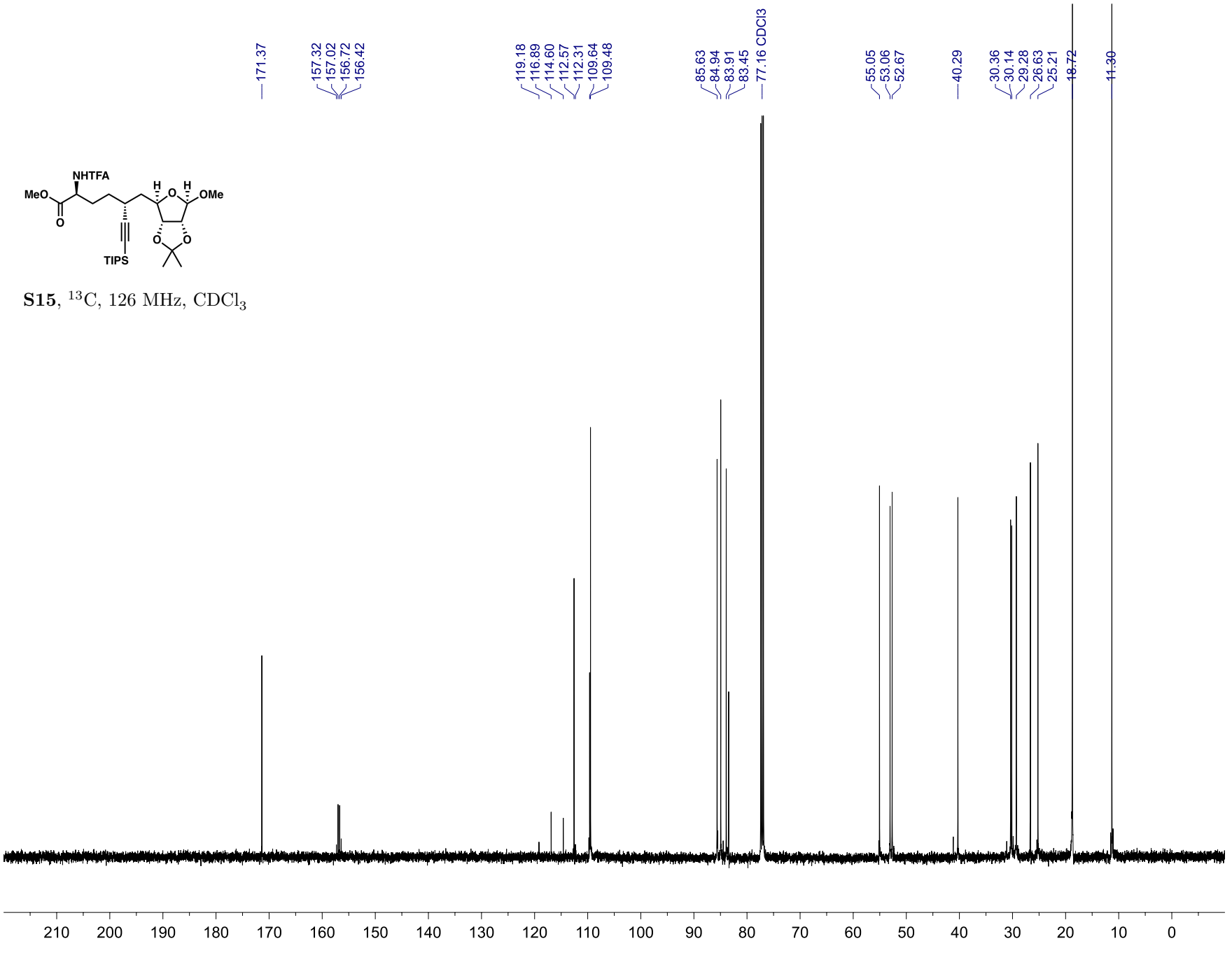
S14, ^{1}H, 600 MHz, $CDCl_3$



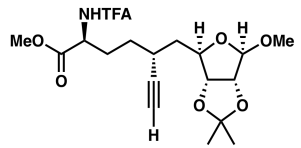
S14, ^{13}C, 101 MHz, $CDCl_3$



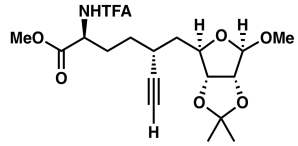
S15, ^{1}H, 500 MHz, $CDCl_3$



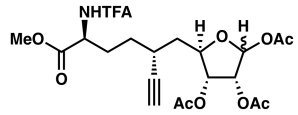
S15, ^{13}C, 126 MHz, $CDCl_3$



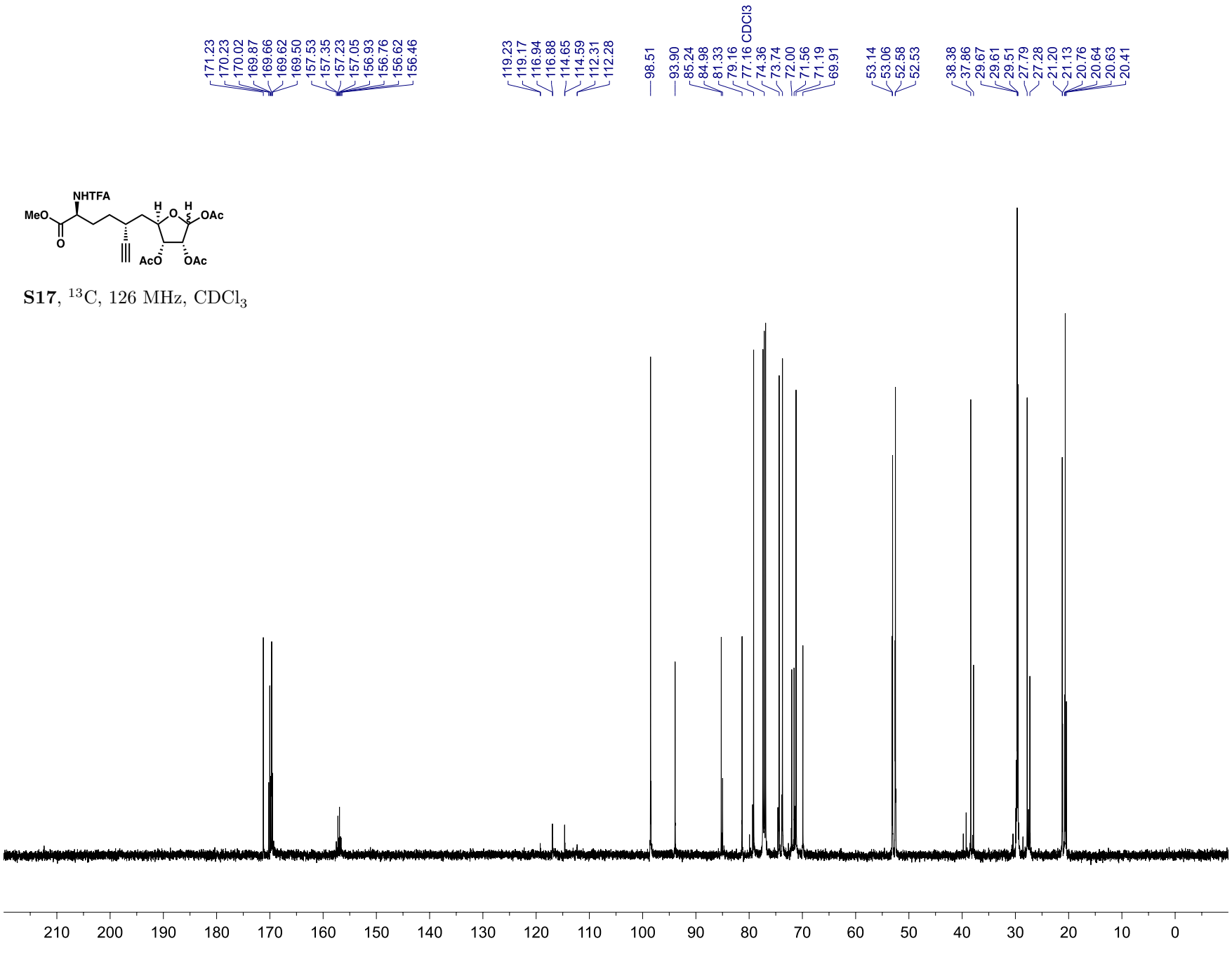
S16, ^{1}H, 500 MHz, $CDCl_3$



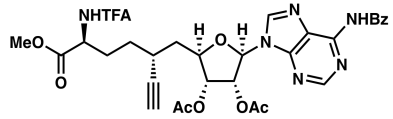
S16, ^{13}C, 126 MHz, $CDCl_3$



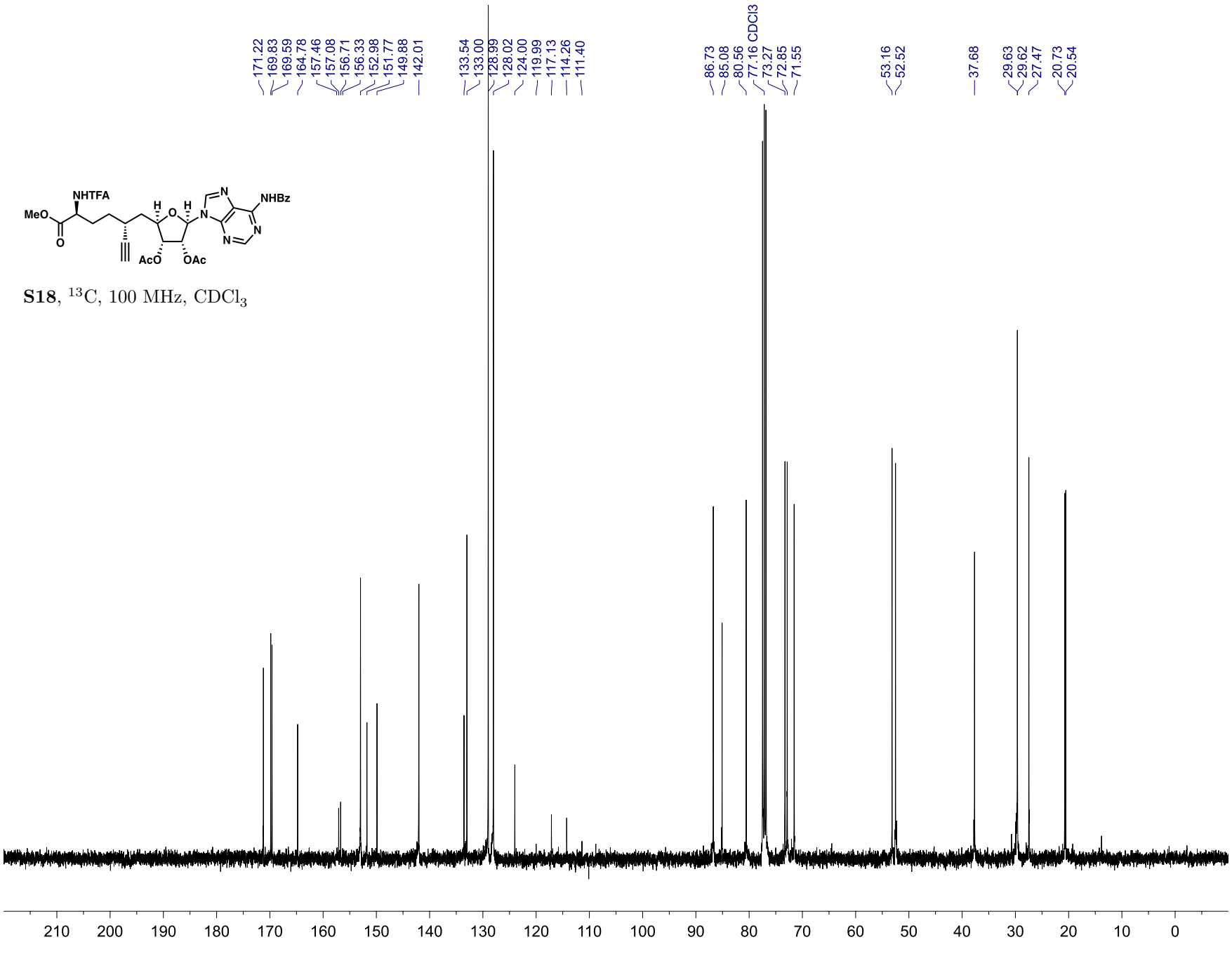
S17, ^{1}H, 500 MHz, $CDCl_3$



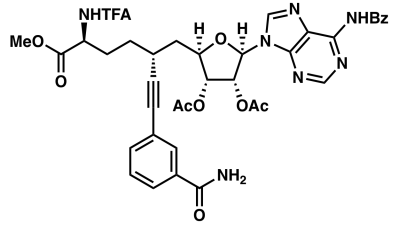
S17, ^{13}C, 126 MHz, $CDCl_3$



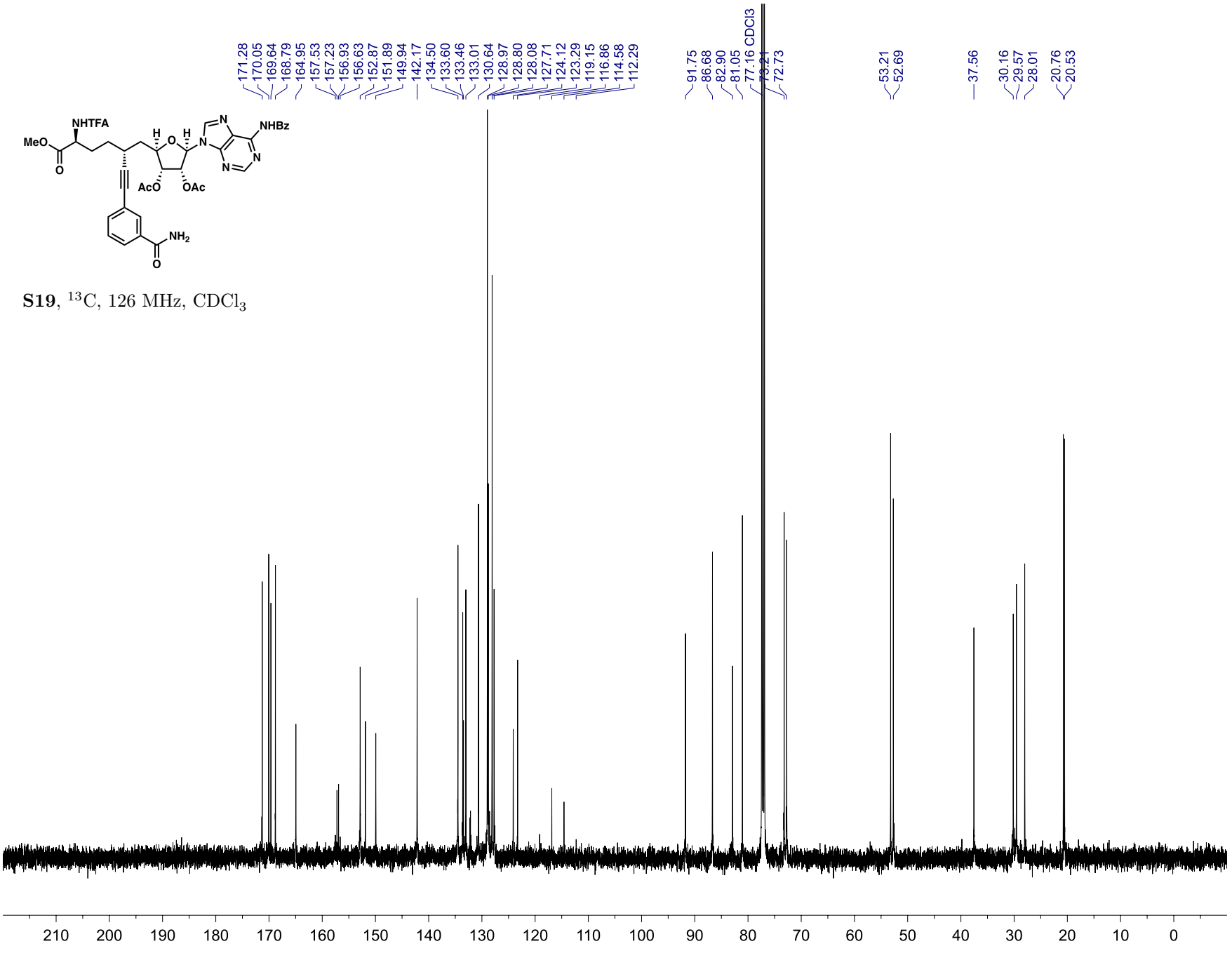
S18, ^{1}H, 500 MHz, $CDCl_3$



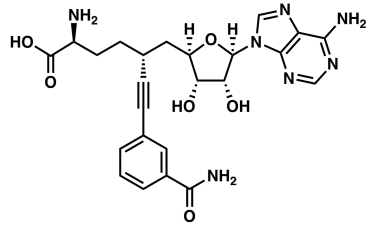
S18, ^{13}C, 100 MHz, $CDCl_3$



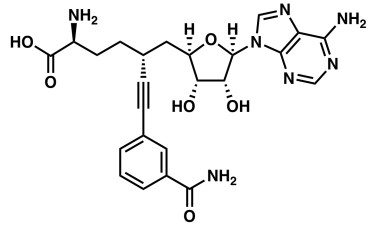
S19, ^{1}H, 600 MHz, $CDCl_3$



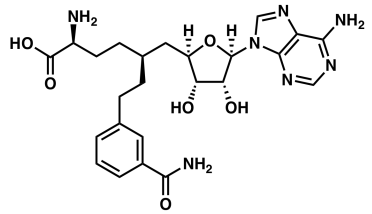
S19, ^{13}C, 126 MHz, $CDCl_3$



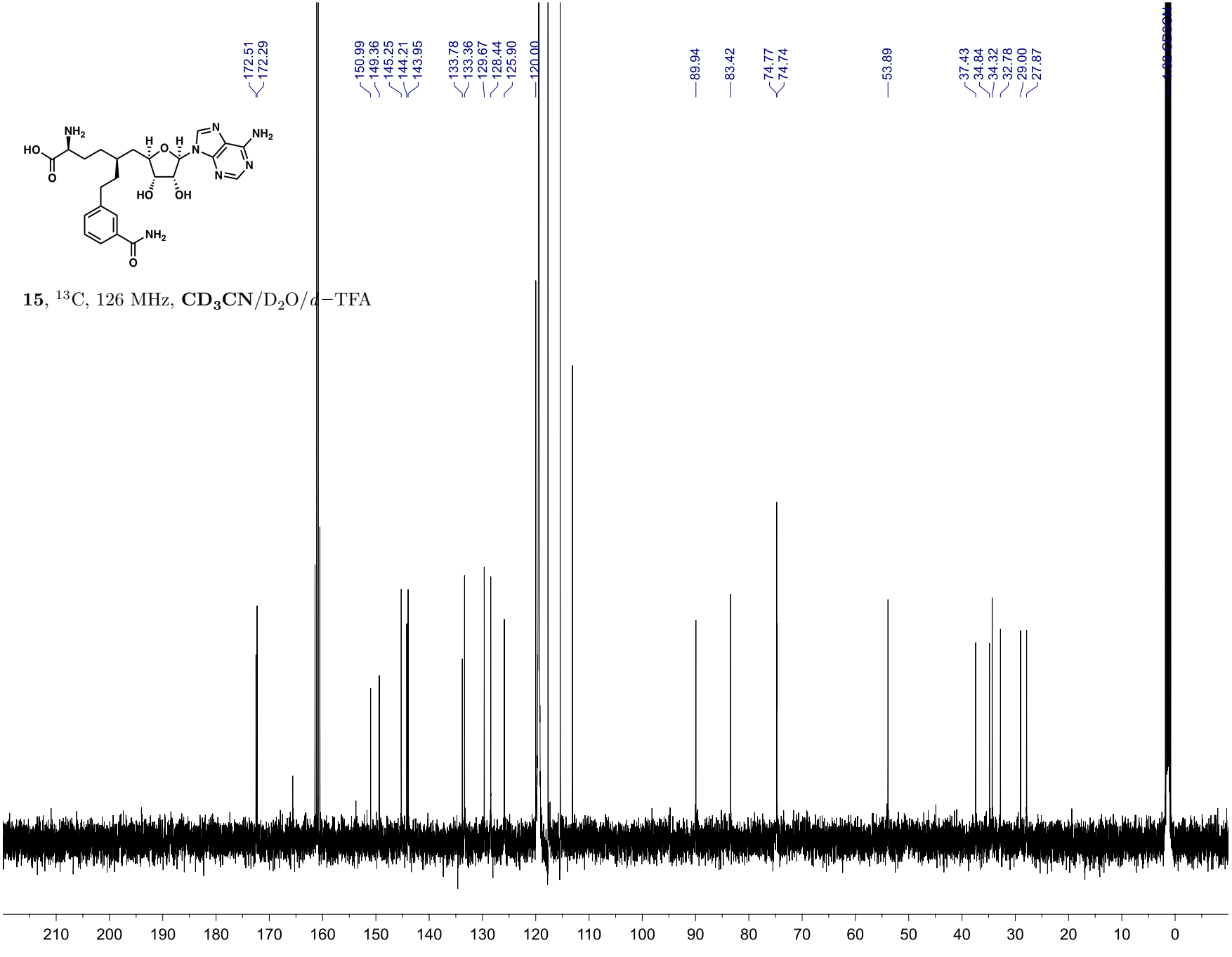
14, ^{1}H, 600 MHz, $\mathbf{CD_3CN}$/D_2O/*d*−TFA



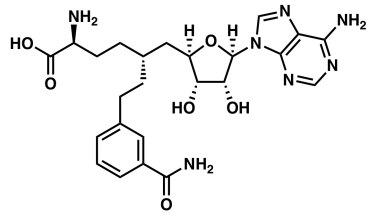
14, ^{13}C, 126 MHz, $\mathbf{CD_3CN}$/D_2O/*d*−TFA



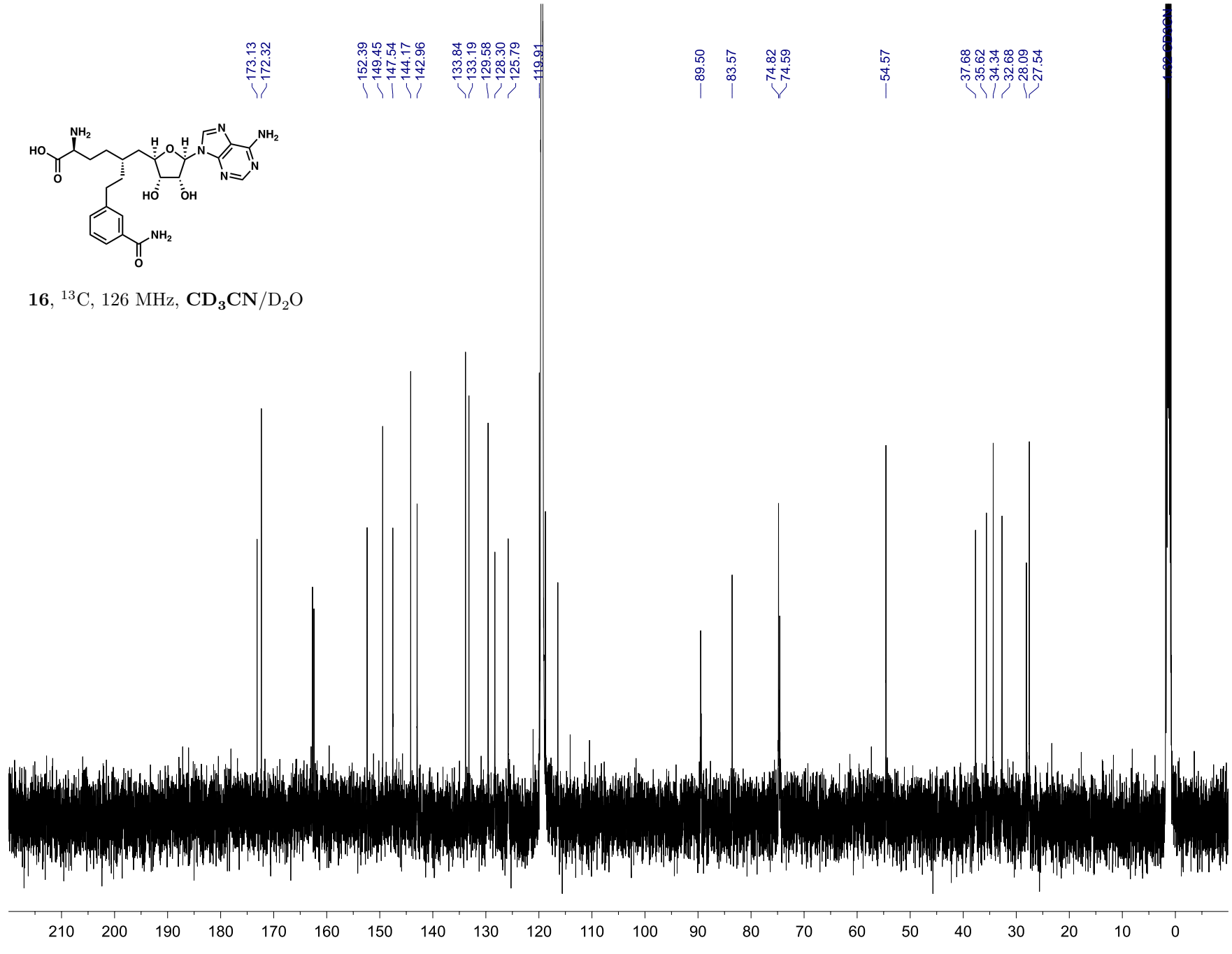
15, ^{1}H, 600 MHz, $\mathbf{CD_3CN}$/D_2O/*d*−TFA



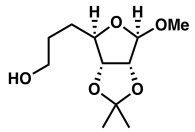
15, ^{13}C, 126 MHz, $\mathbf{CD_3CN}$/D_2O/*d*−TFA



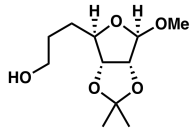
16, ^{1}H, 600 MHz, $\mathbf{CD_3CN}$/D_2O



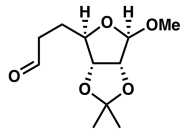
16, ^{13}C, 126 MHz, $\mathbf{CD_3CN}/D_2O$



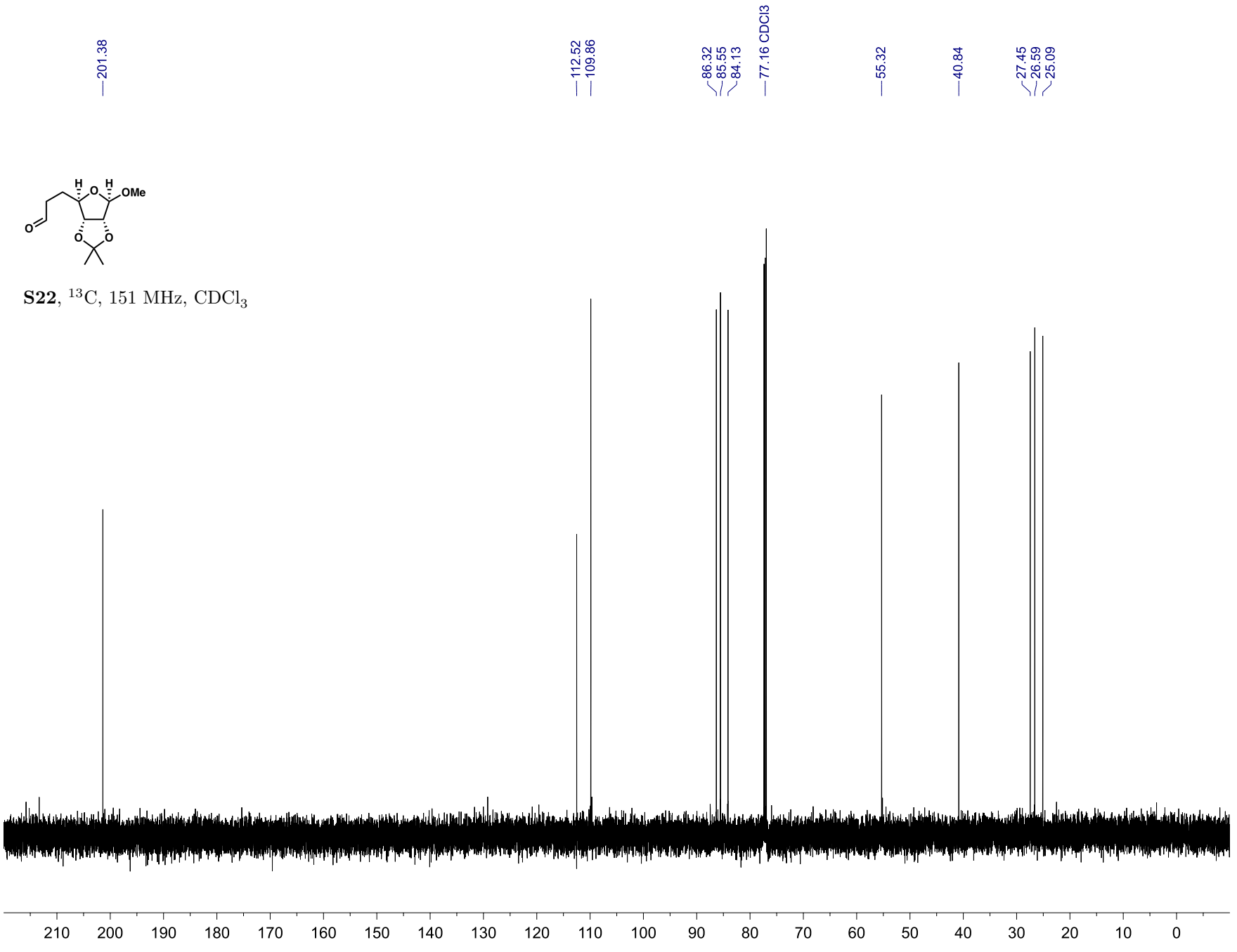
S21, ^{1}H, 600 MHz, $CDCl_3$



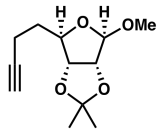
S21, ^{13}C, 151 MHz, $CDCl_3$



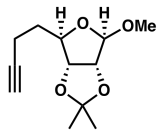
S22, ^{1}H, 500 MHz, $CDCl_3$



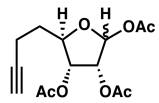
S22, ^{13}C, 151 MHz, $CDCl_3$



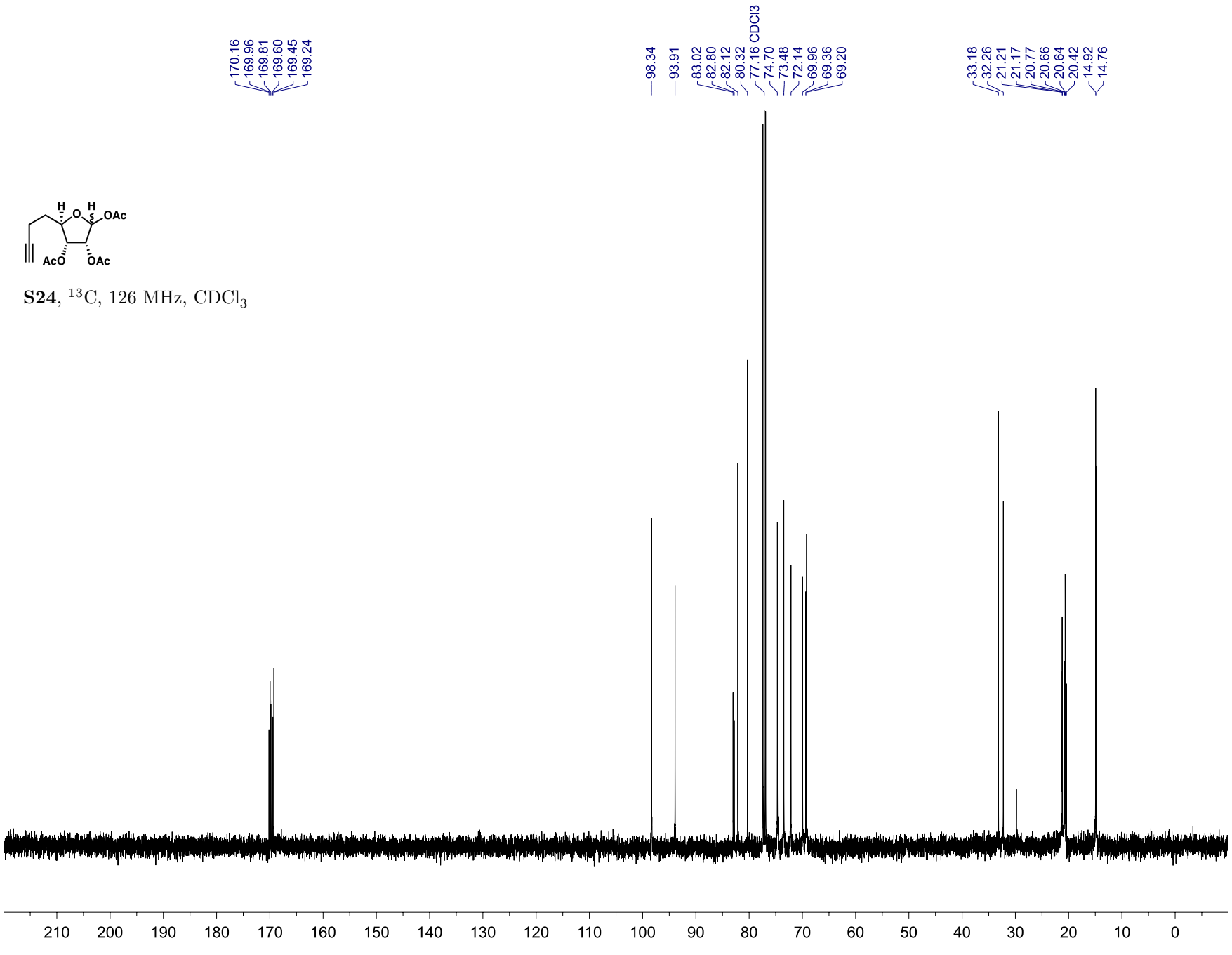
S23, ^{1}H, 600 MHz, $CDCl_3$



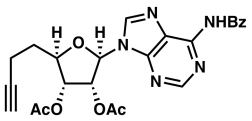
S23, ^{13}C, 151 MHz, $CDCl_3$



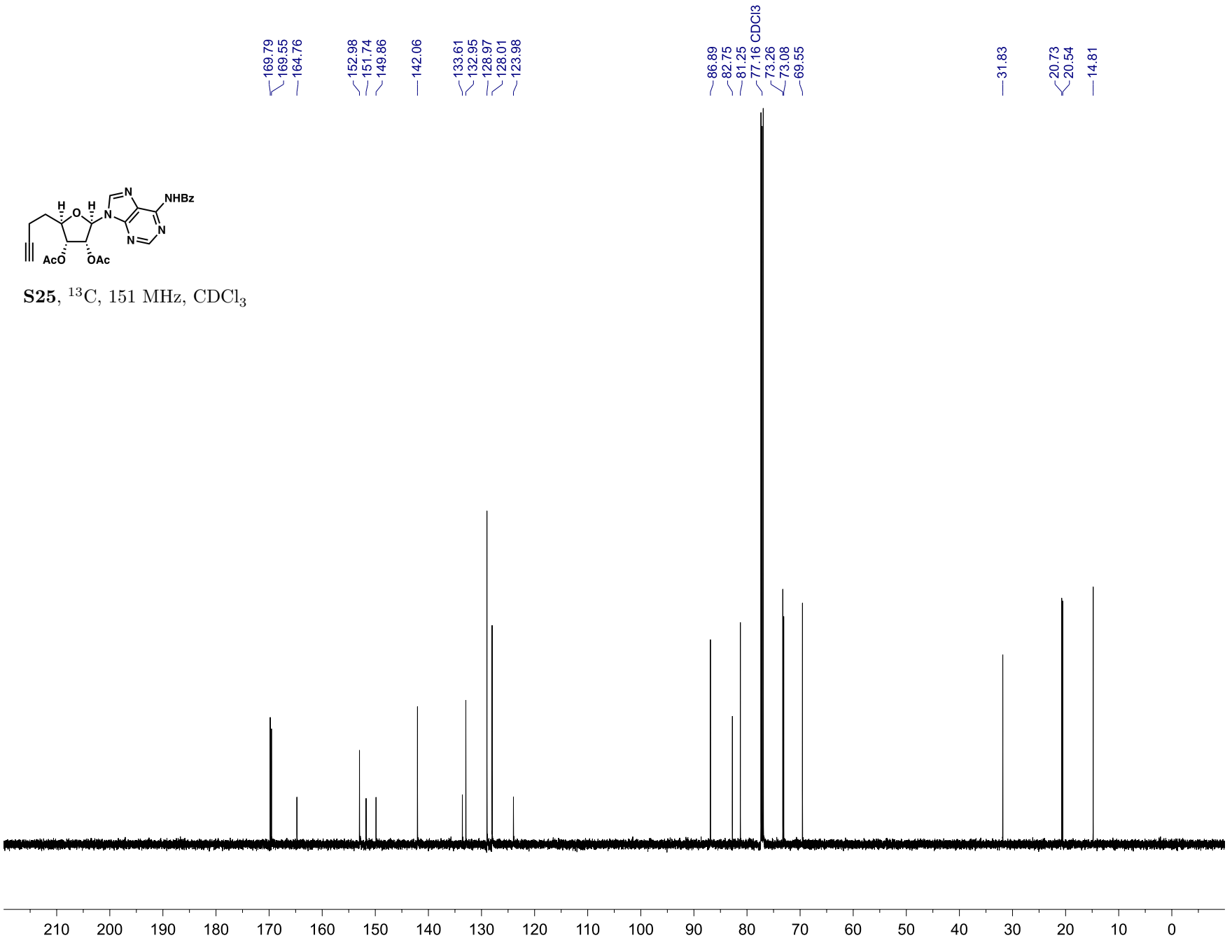
S24, ^{1}H, 600 MHz, $CDCl_3$



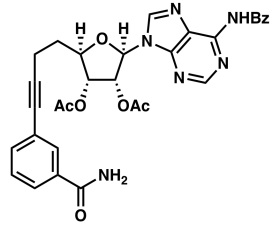
S24, ^{13}C, 126 MHz, $CDCl_3$



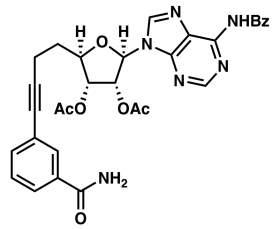
S25, ^{1}H, 600 MHz, $CDCl_3$



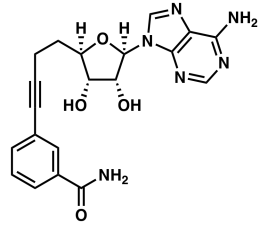
S25, ^{13}C, 151 MHz, $CDCl_3$



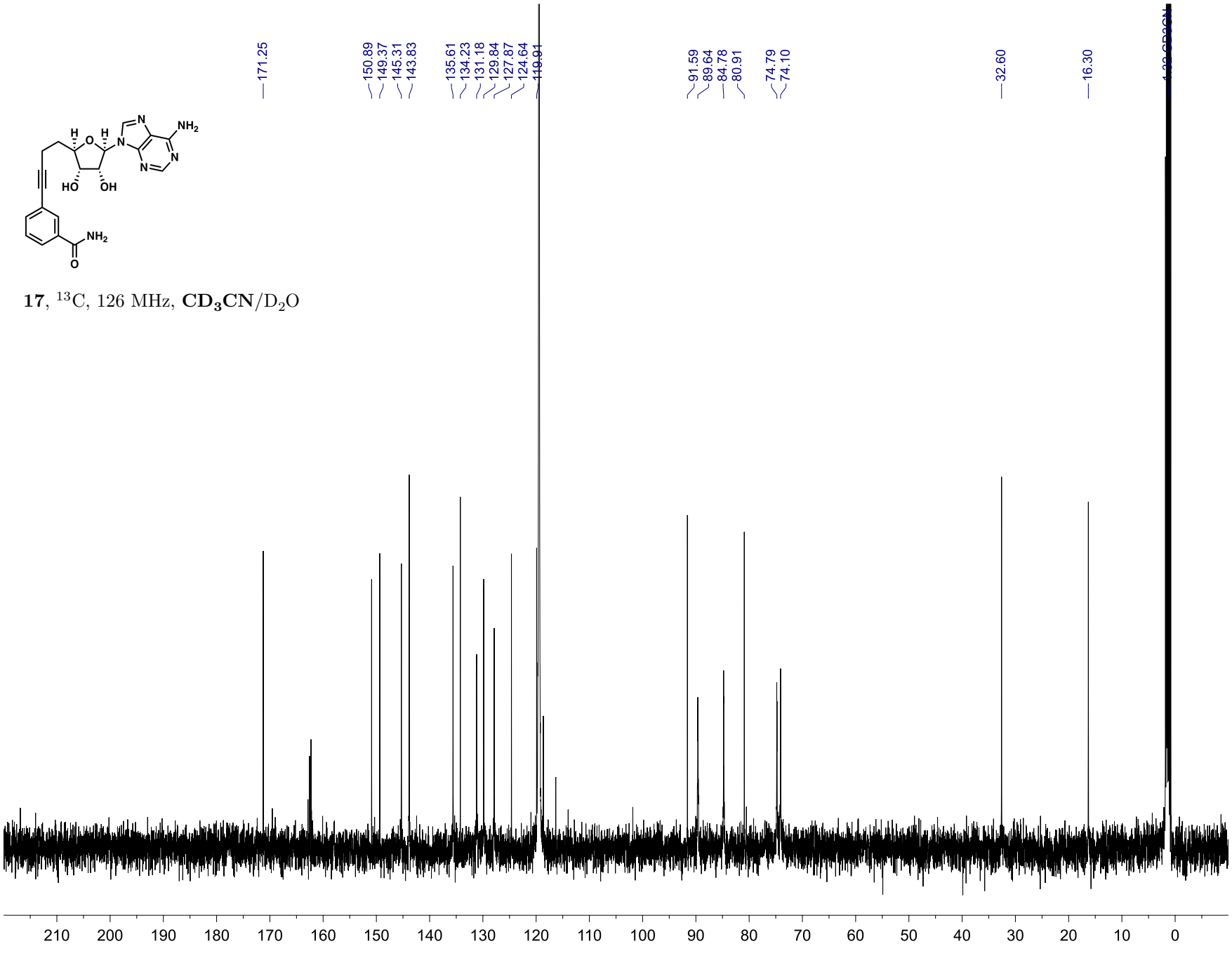
S26, ^{1}H, 600 MHz, $CDCl_3$



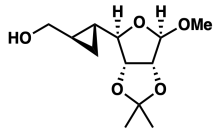
S26, ^{13}C, 101 MHz, $CDCl_3$



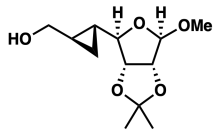
17, ^{1}H, 600 MHz, $\mathbf{CD_3CN}/D_2O$



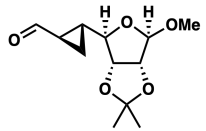
17, ^{13}C, 126 MHz, $\mathbf{CD_3CN}/D_2O$



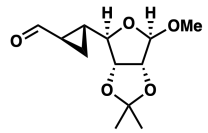
S28, ^{1}H, 600 MHz, $CDCl_3$



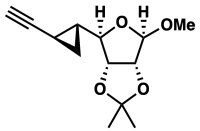
S28, ^{13}C, 151 MHz, $CDCl_3$



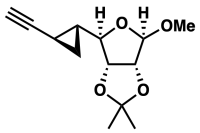
S29, ^{1}H, 600 MHz, $CDCl_3$



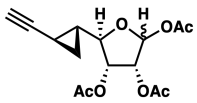
S29, ^{13}C, 151 MHz, $CDCl_3$



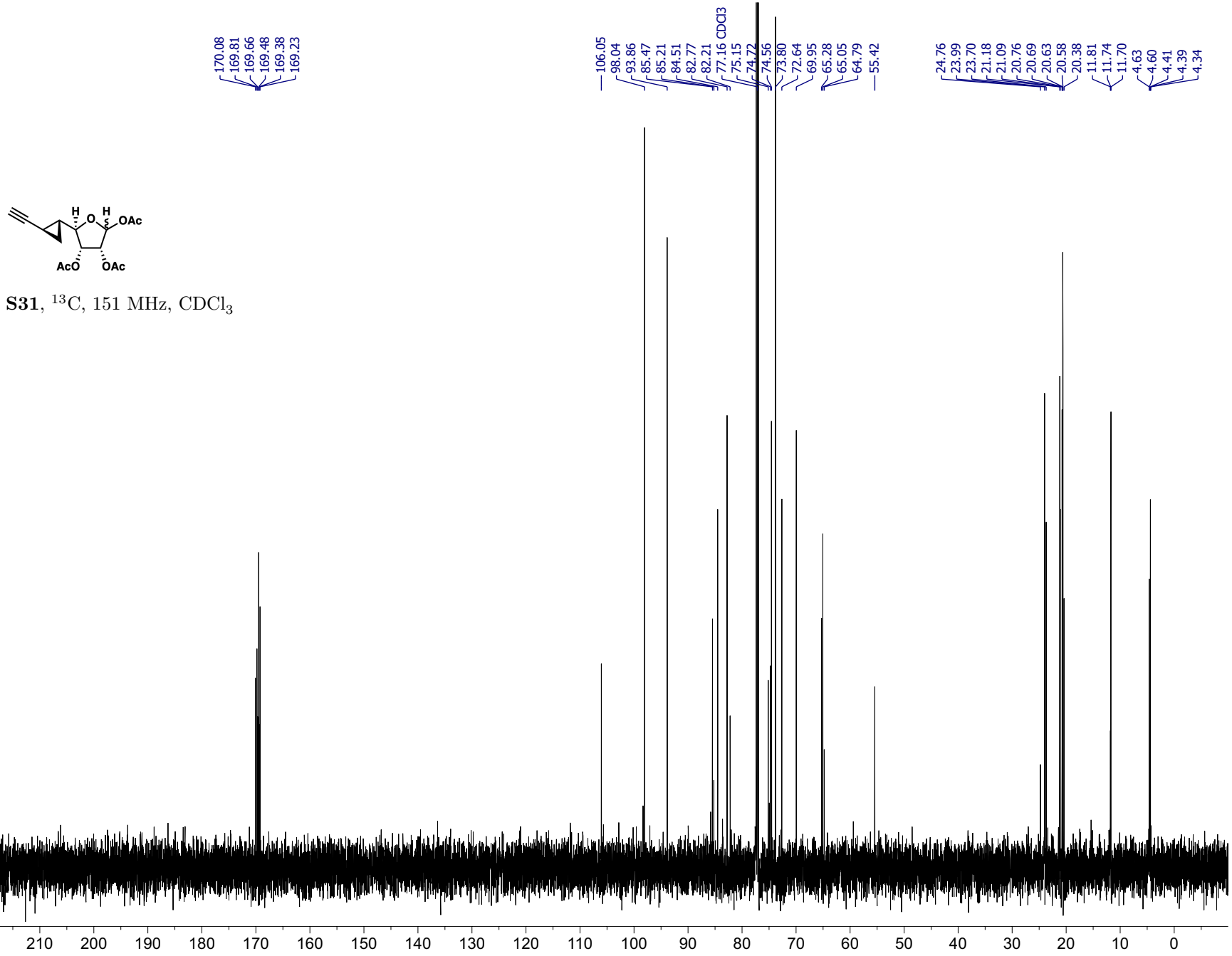
S30, ^{1}H, 600 MHz, $CDCl_3$



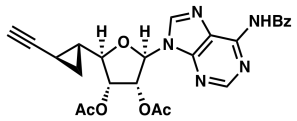
S30, ^{13}C, 151 MHz, $CDCl_3$



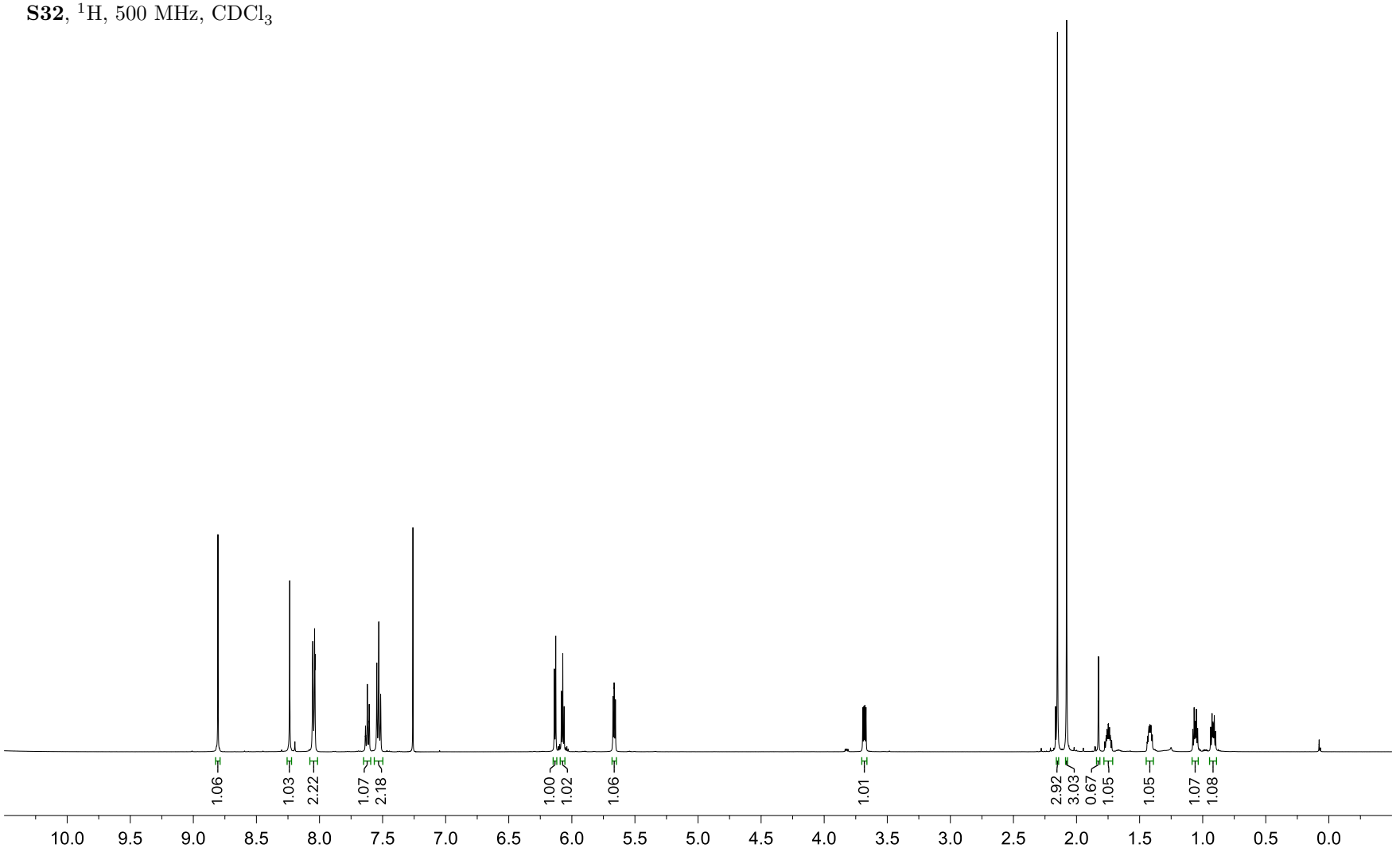
S31, ^{1}H, 600 MHz, $CDCl_3$

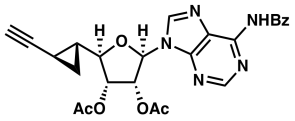


S31, ^{13}C, 151 MHz, $CDCl_3$

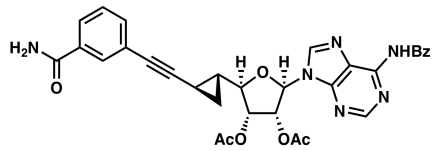


S32, ^{1}H, 500 MHz, $CDCl_3$

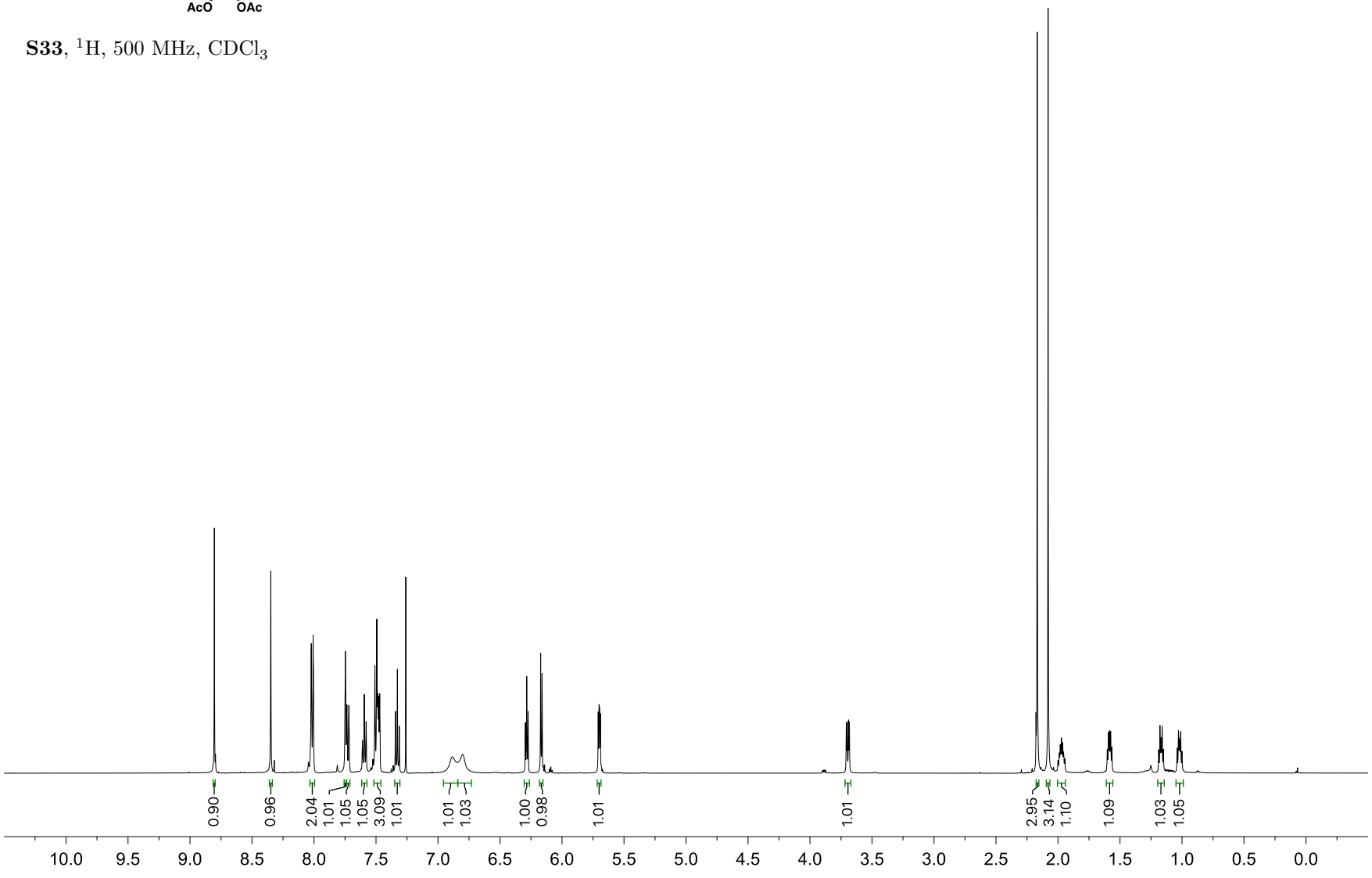


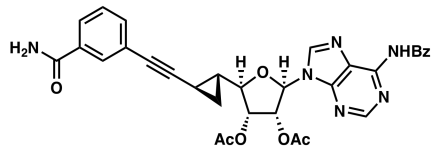


S32, ^{13}C, 126 MHz, $CDCl_3$

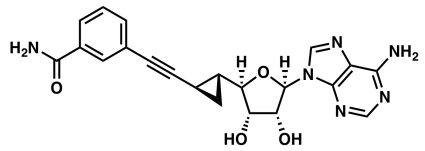


S33, ^{1}H, 500 MHz, $CDCl_3$

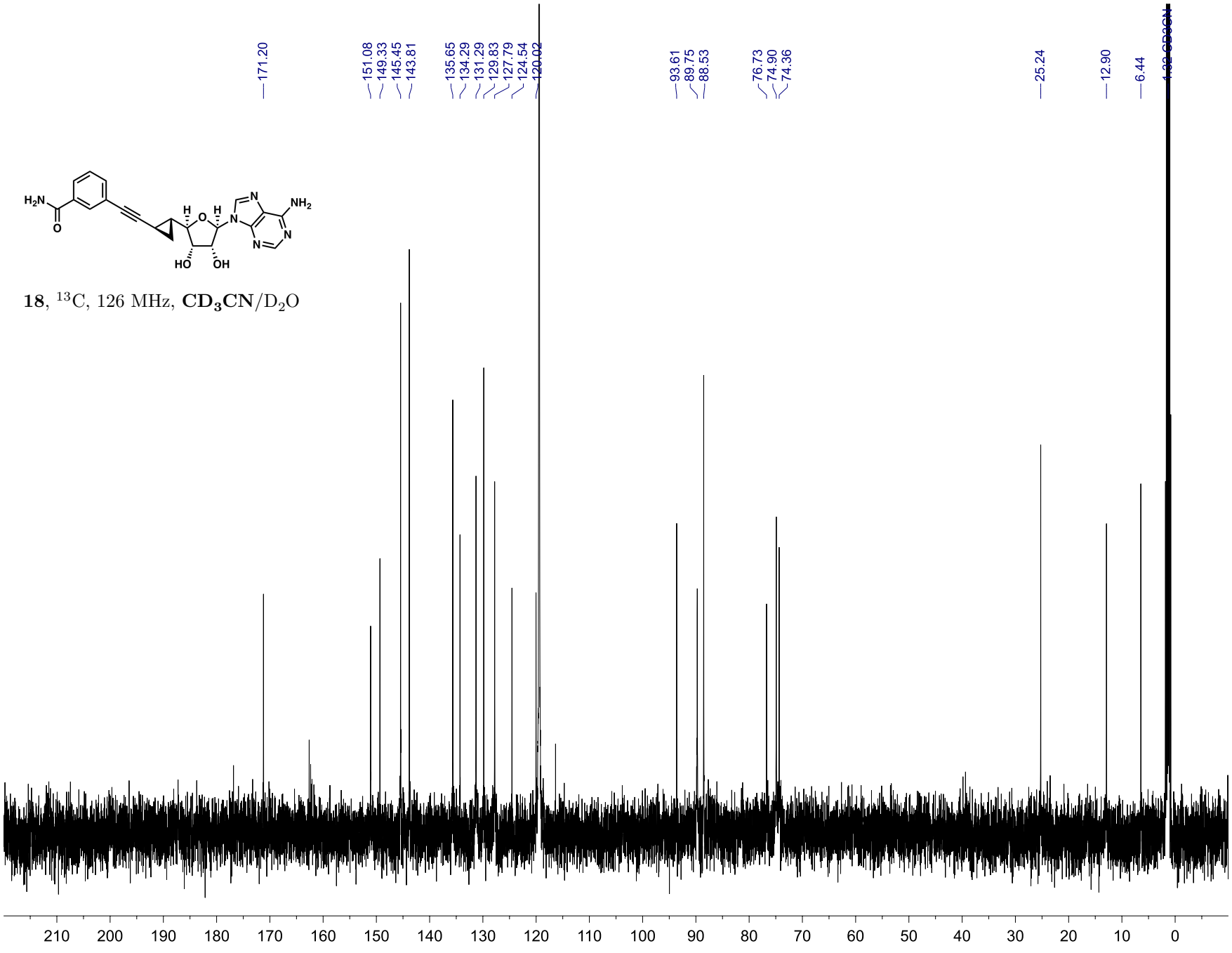




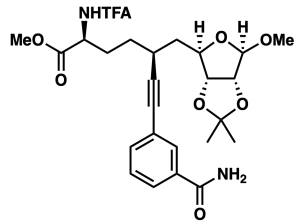
S33, ^{13}C, 126 MHz, $CDCl_3$



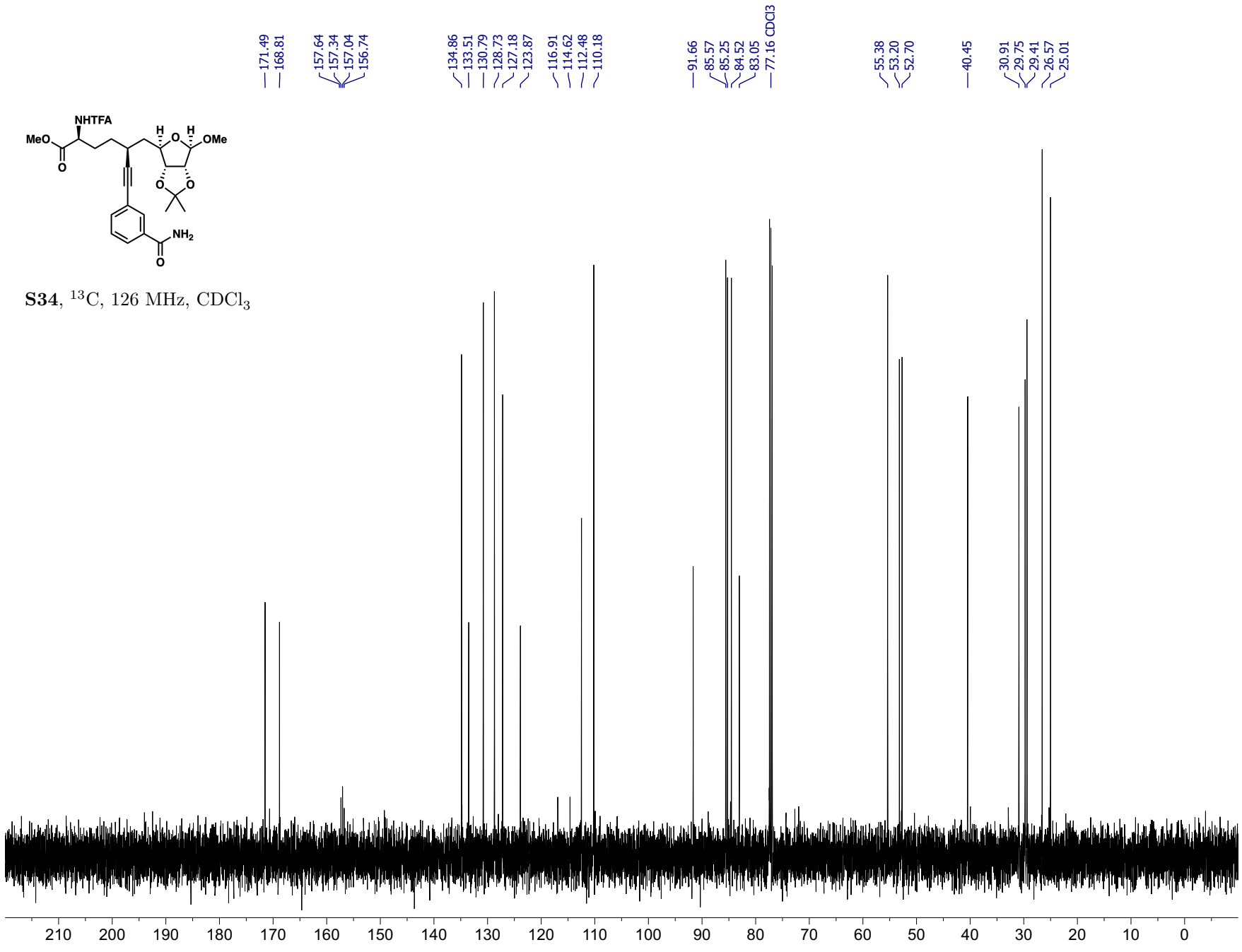
18, ^{1}H, 500 MHz, $\mathbf{CD_3CN}/D_2O$



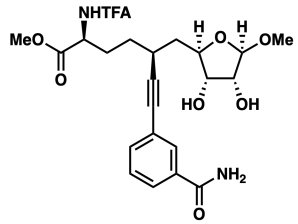
18, ^{13}C, 126 MHz, $\mathbf{CD_3CN}/D_2O$



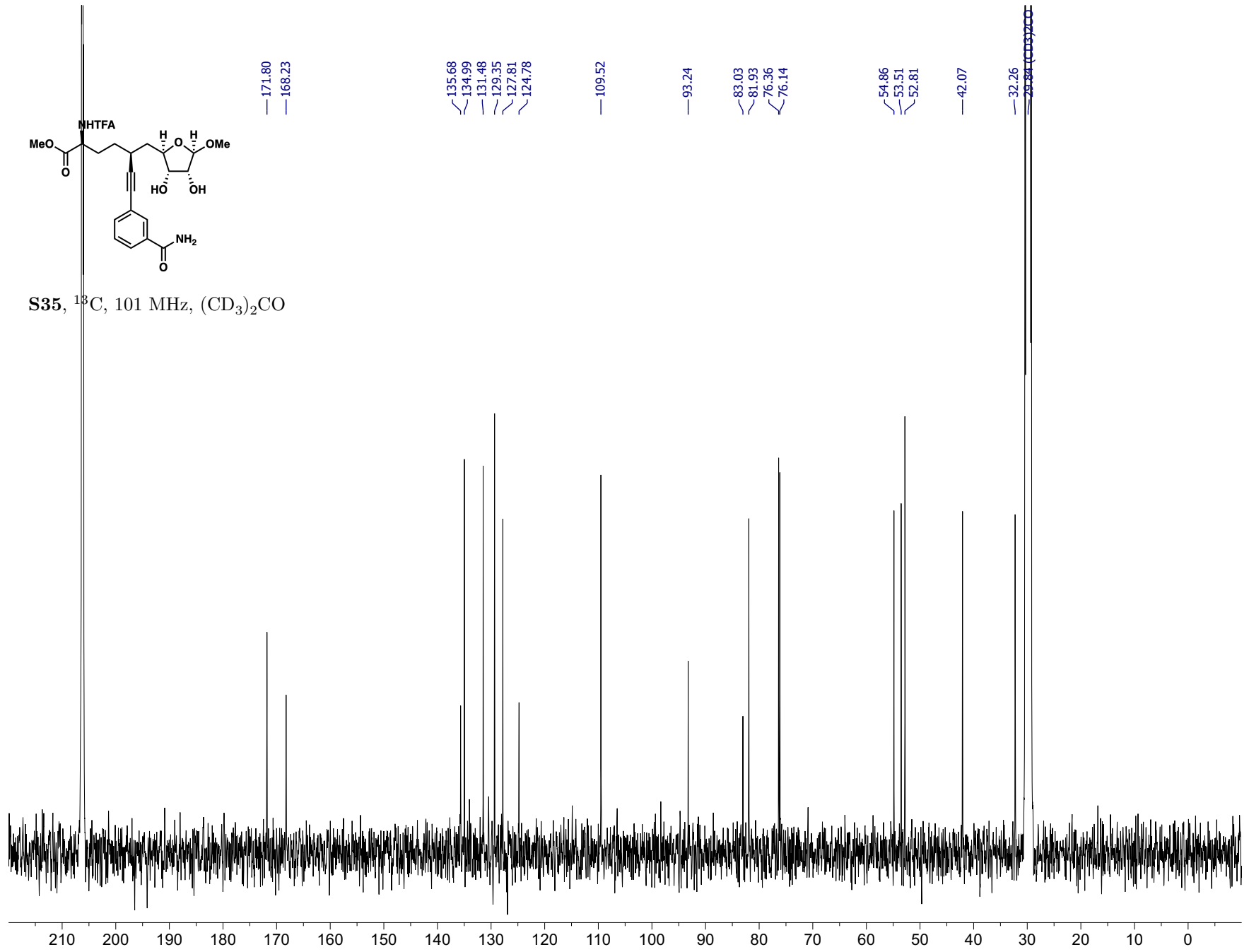
S34, ^{1}H, 500 MHz, $CDCl_3$



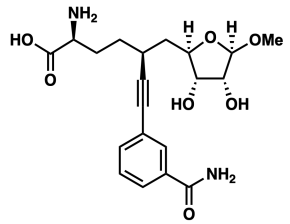
S34, ^{13}C, 126 MHz, $CDCl_3$



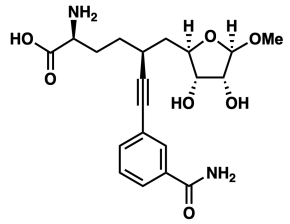
S35, ^{1}H, 600 MHz, $(CD_3)_2CO$



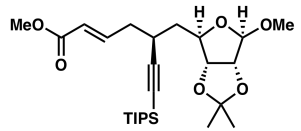
S35, ^{13}C, 101 MHz, $(CD_3)_2CO$



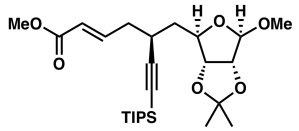
19, ^{1}H, 600 MHz, D_2O



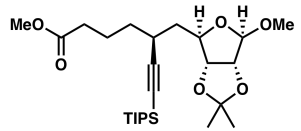
19, ^{13}C, 101 MHz, D_2O



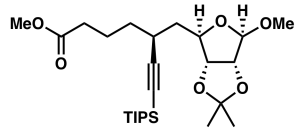
S36, ^{1}H, 600 MHz, $CDCl_3$



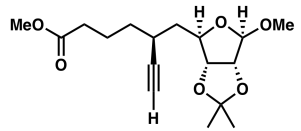
S36, ^{13}C, 126 MHz, $CDCl_3$



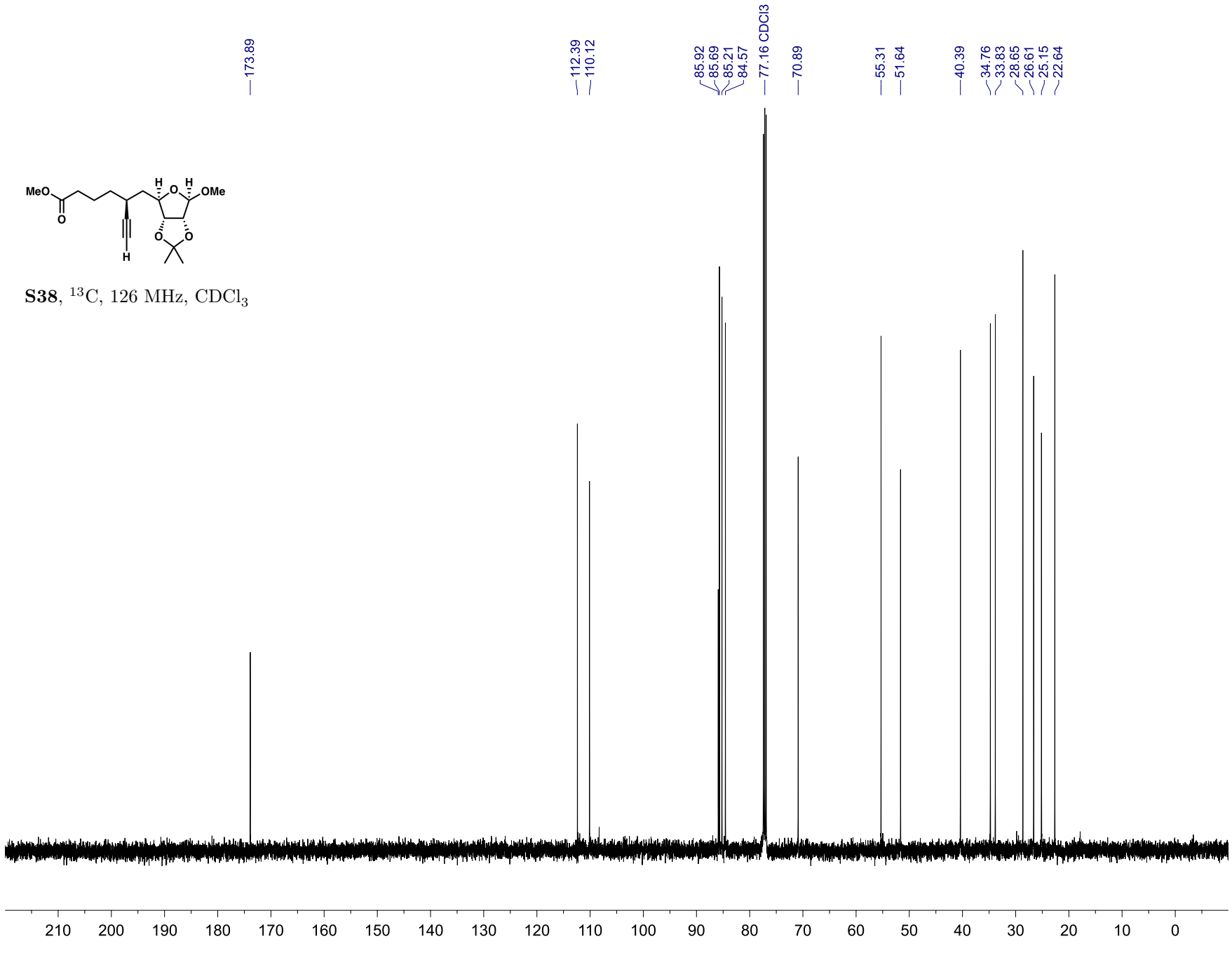
S37, ^{1}H, 600 MHz, $CDCl_3$



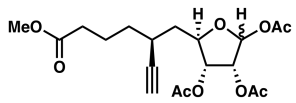
S37, ^{13}C, 126 MHz, $CDCl_3$



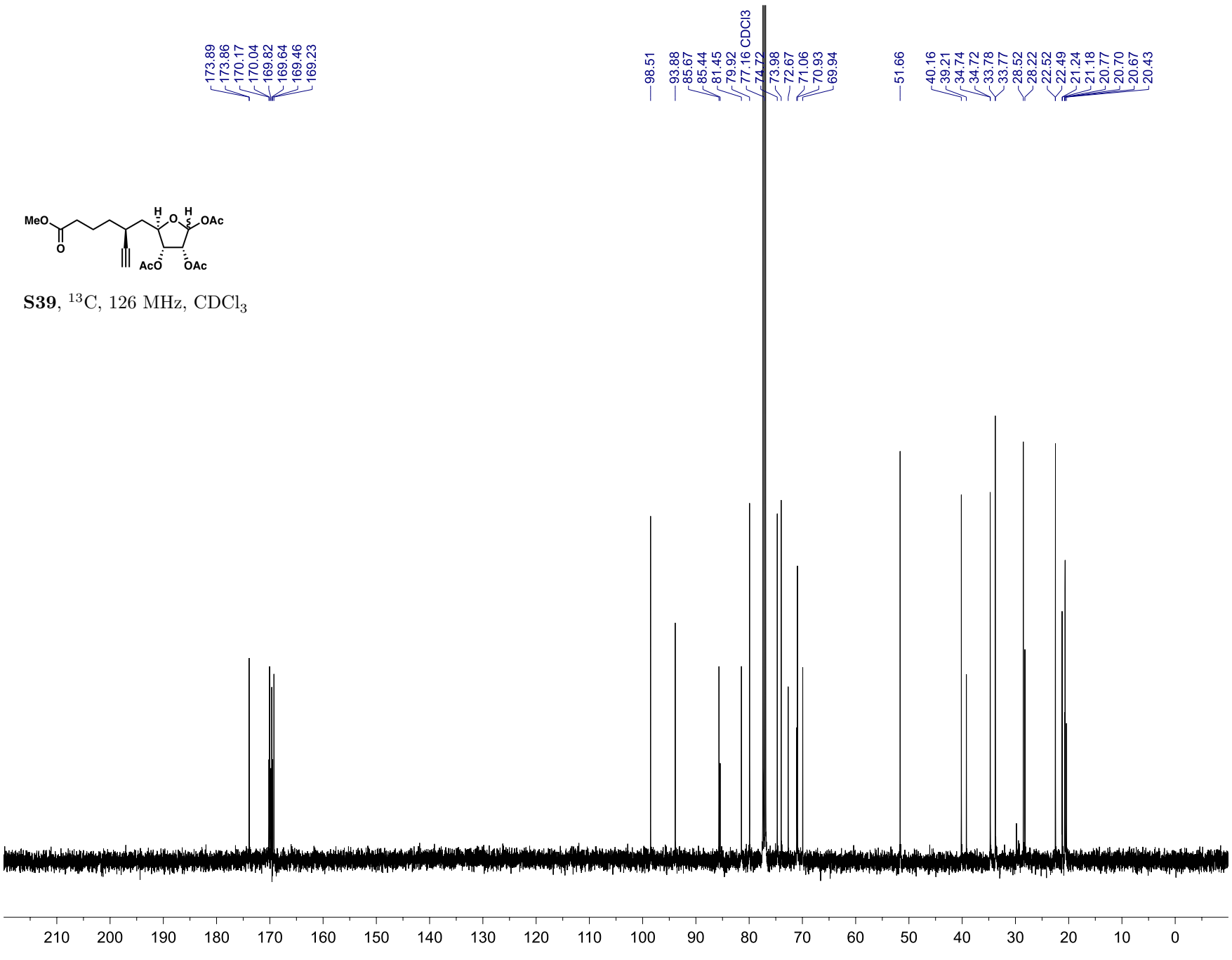
S38, ^{1}H, 600 MHz, $CDCl_3$



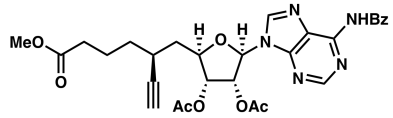
S38, ^{13}C, 126 MHz, $CDCl_3$



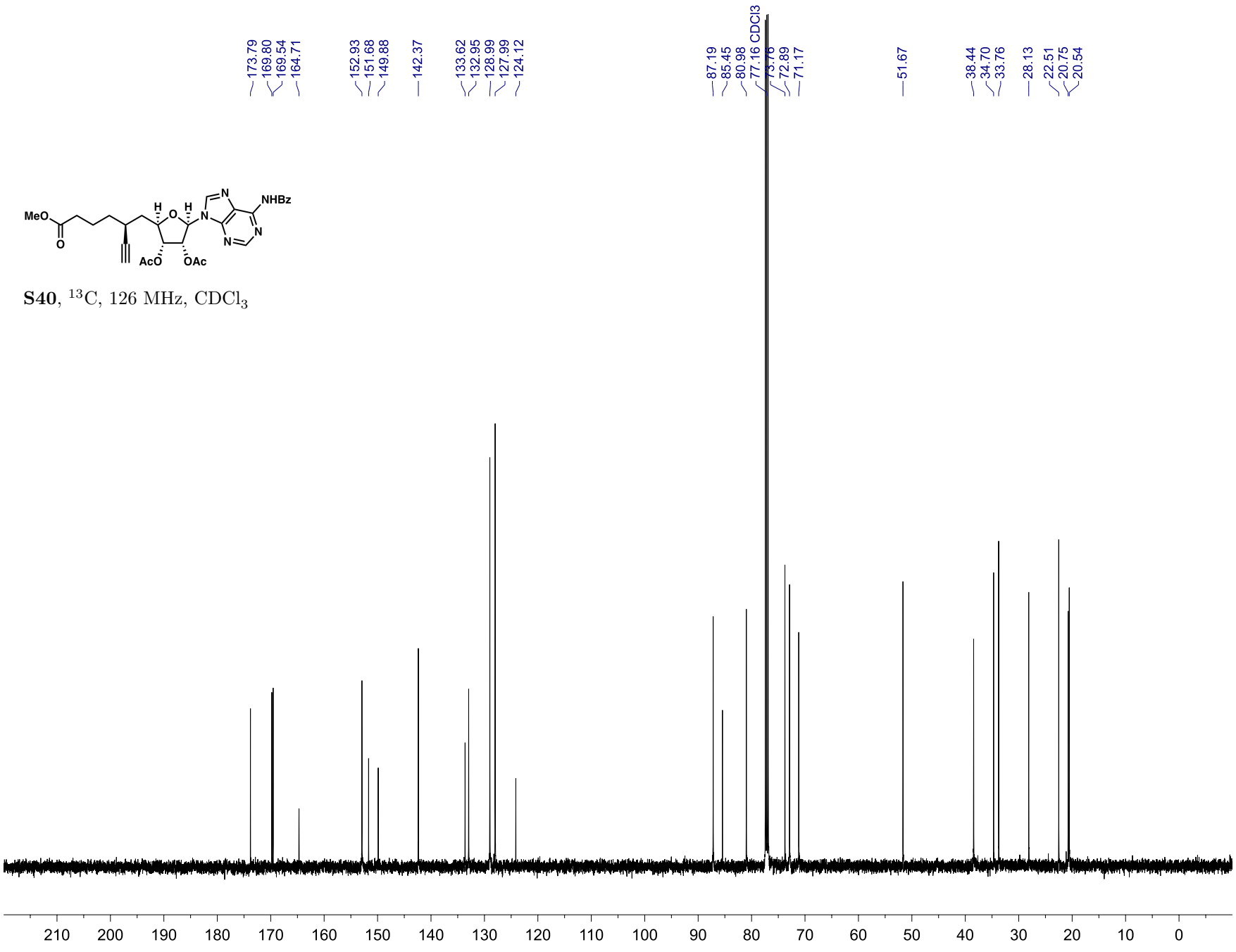
S39, ^{1}H, 600 MHz, $CDCl_3$



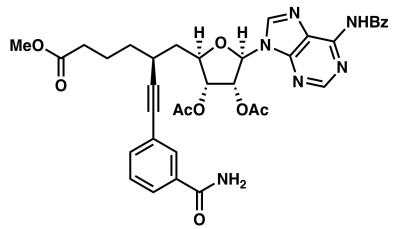
S39, ^{13}C, 126 MHz, $CDCl_3$



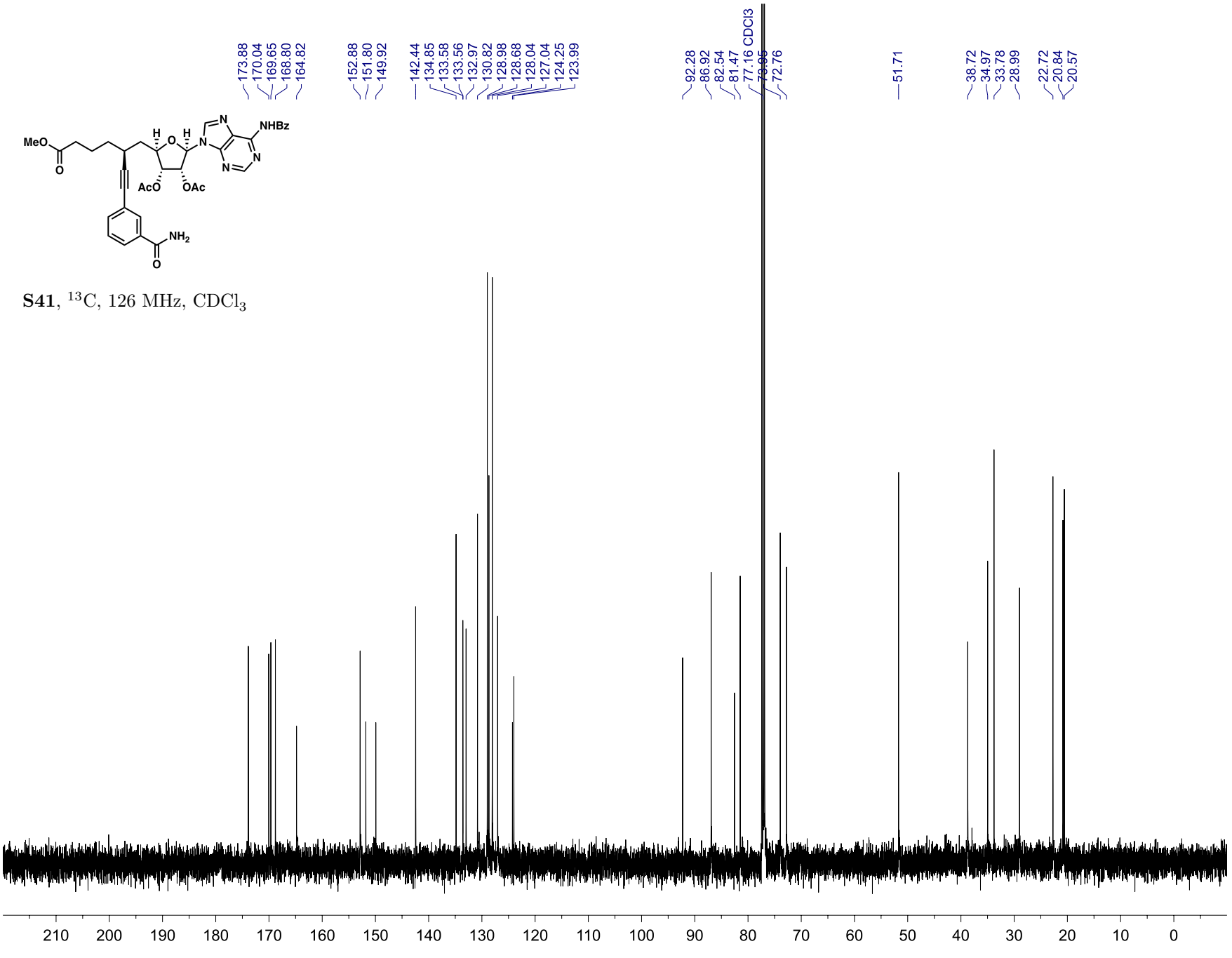
S40, ^{1}H, 600 MHz, $CDCl_3$



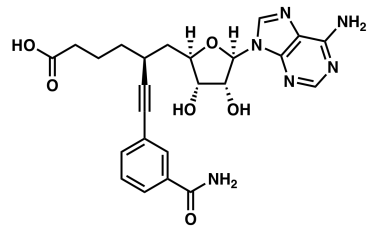
S40, ^{13}C, 126 MHz, $CDCl_3$



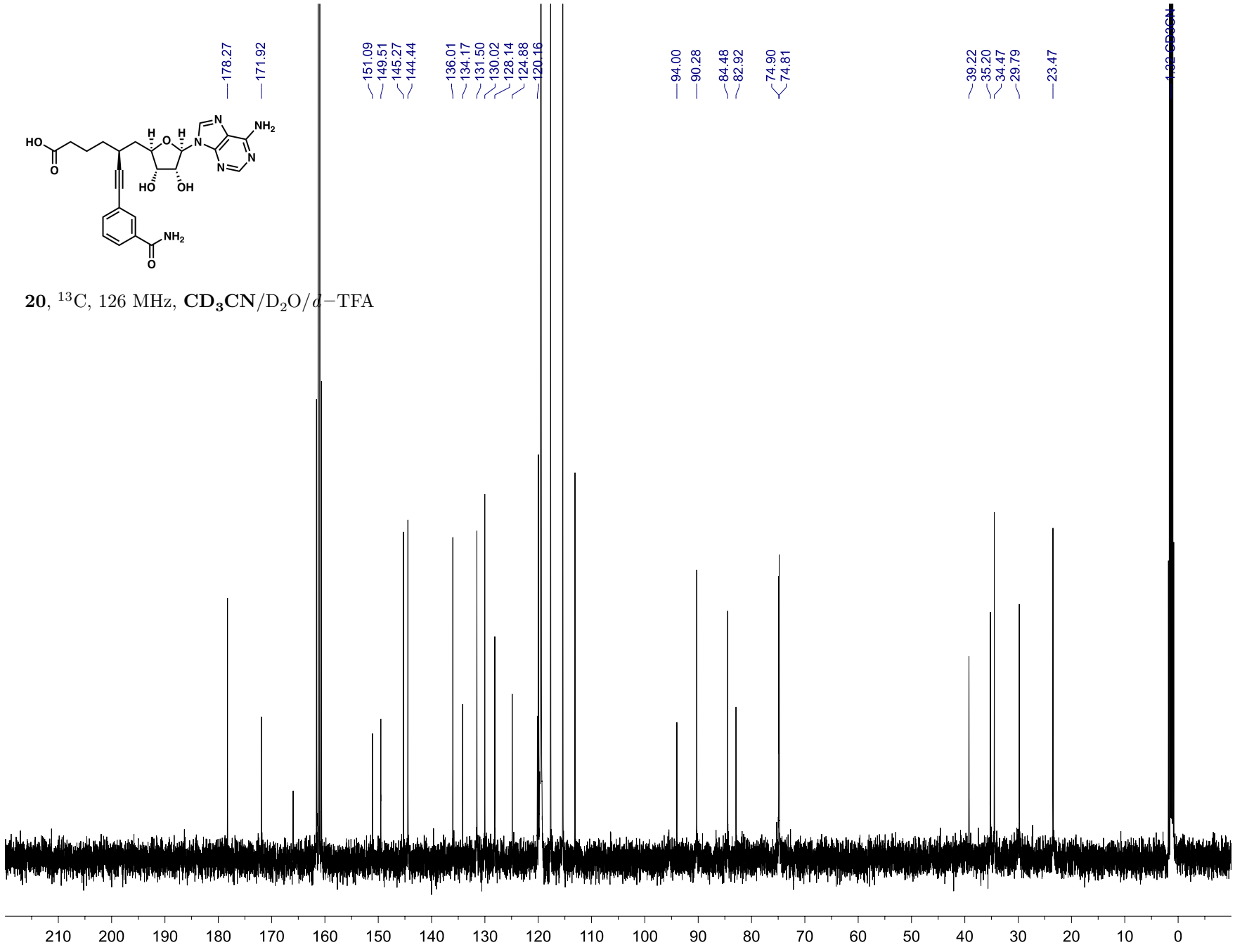
S41, ^{1}H, 600 MHz, $CDCl_3$



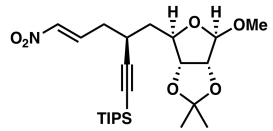
S41, ^{13}C, 126 MHz, $CDCl_3$



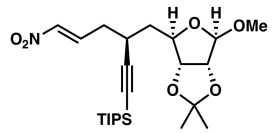
20, ^{1}H, 600 MHz, $\mathbf{CD_3CN}$/D_2O/*d*−TFA



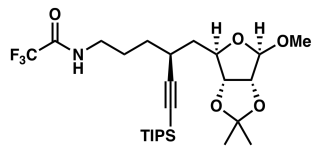
20, ^{13}C, 126 MHz, $\mathbf{CD_3CN}$/D_2O/*d*−TFA



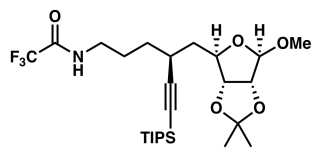
S42, ^{1}H, 600 MHz, $CDCl_3$



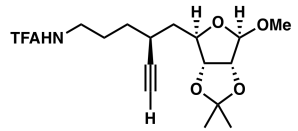
S42, ^{13}C, 126 MHz, $CDCl_3$



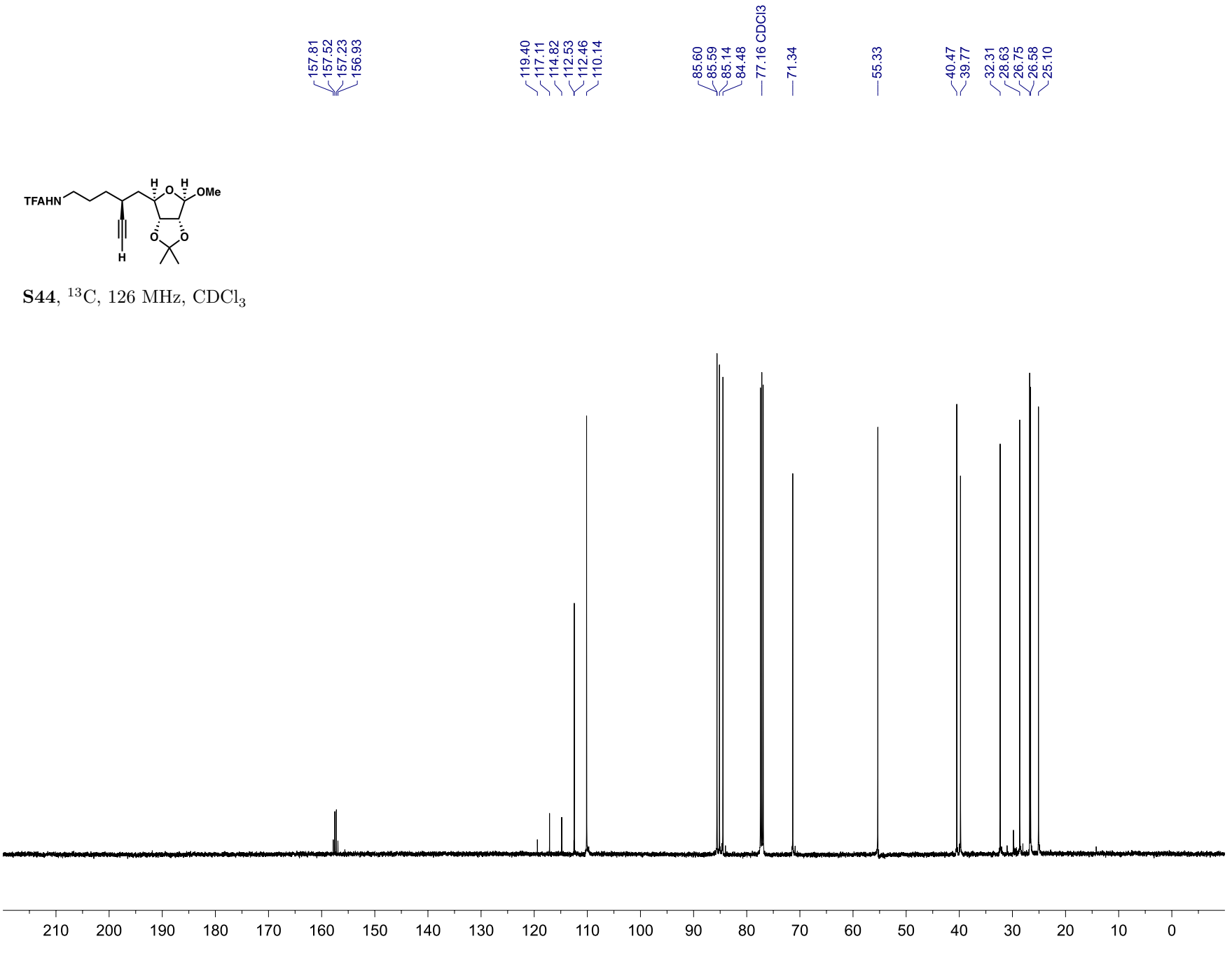
S43, ^{1}H, 600 MHz, $CDCl_3$



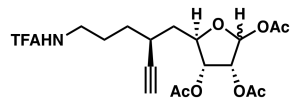
S43, ^{13}C, 126 MHz, $CDCl_3$



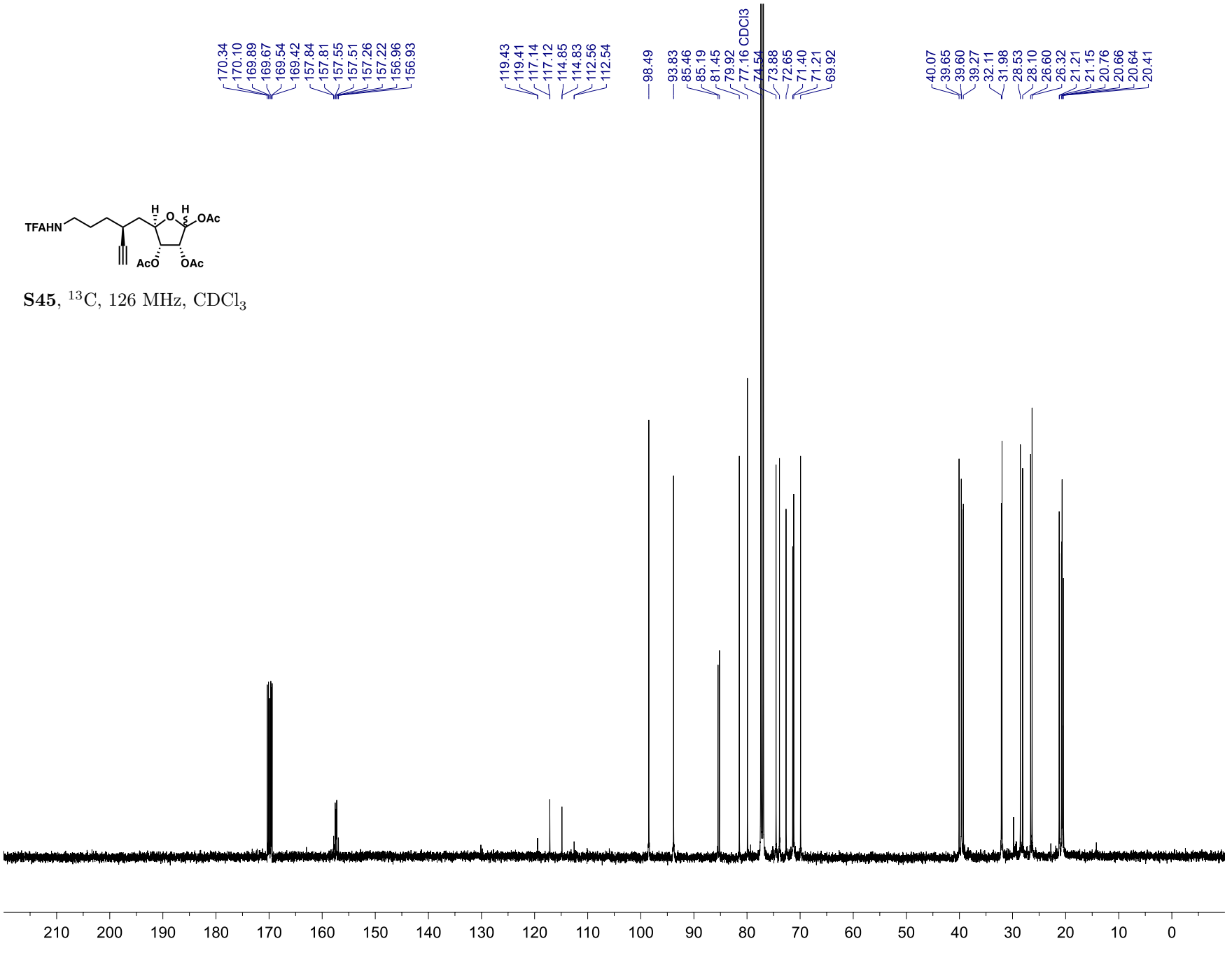
S44, ^{1}H, 600 MHz, $CDCl_3$



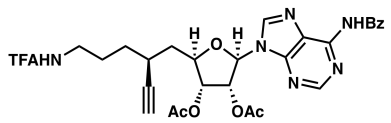
S44, ^{13}C, 126 MHz, $CDCl_3$



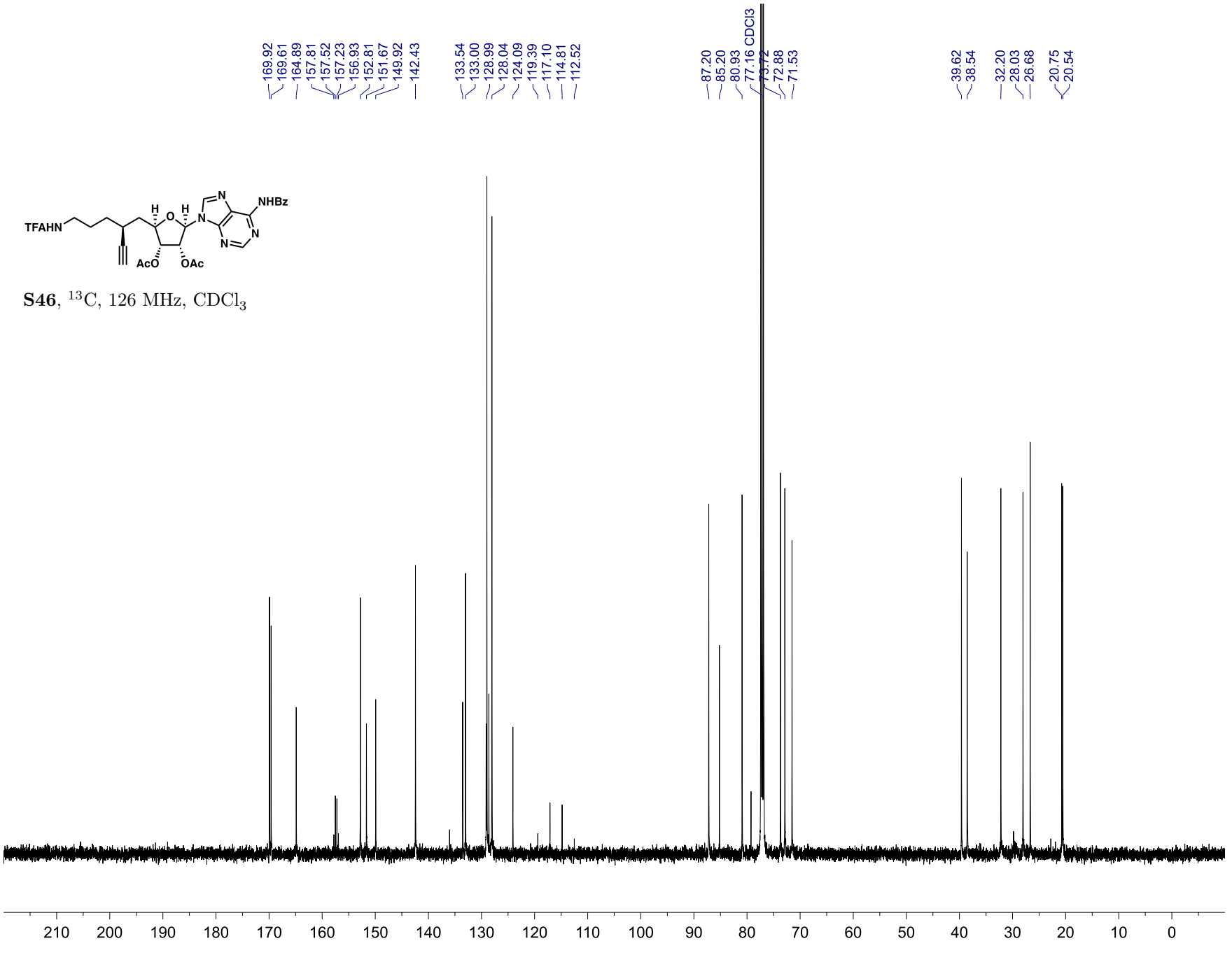
S45, ^{1}H, 600 MHz, $CDCl_3$



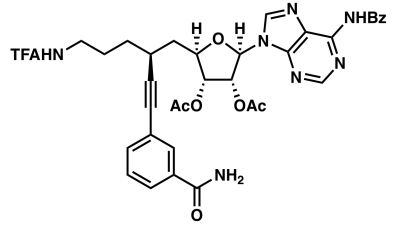
S45, ^{13}C, 126 MHz, $CDCl_3$



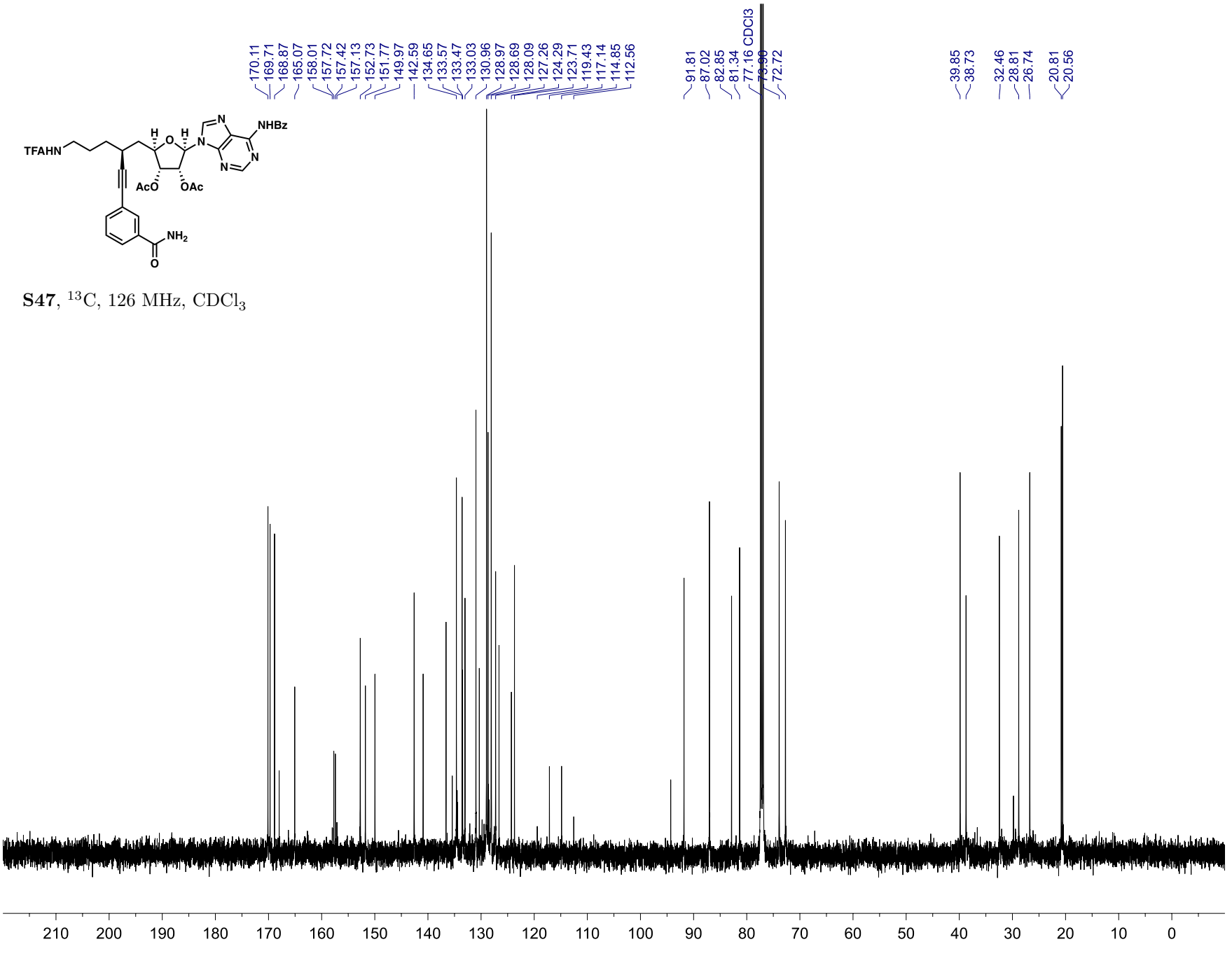
S46, ^{1}H, 600 MHz, $CDCl_3$



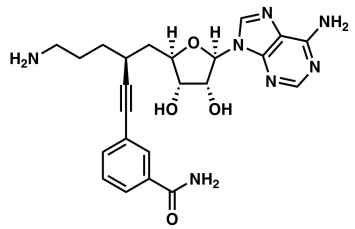
S46, ^{13}C, 126 MHz, $CDCl_3$



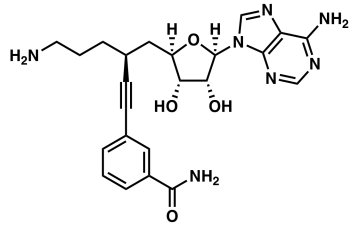
S47, ^{1}H, 500 MHz, $CDCl_3$



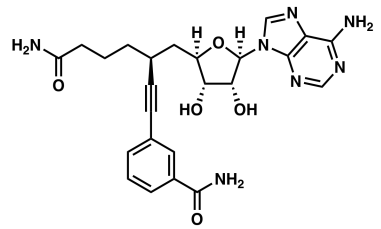
S47, ^{13}C, 126 MHz, $CDCl_3$



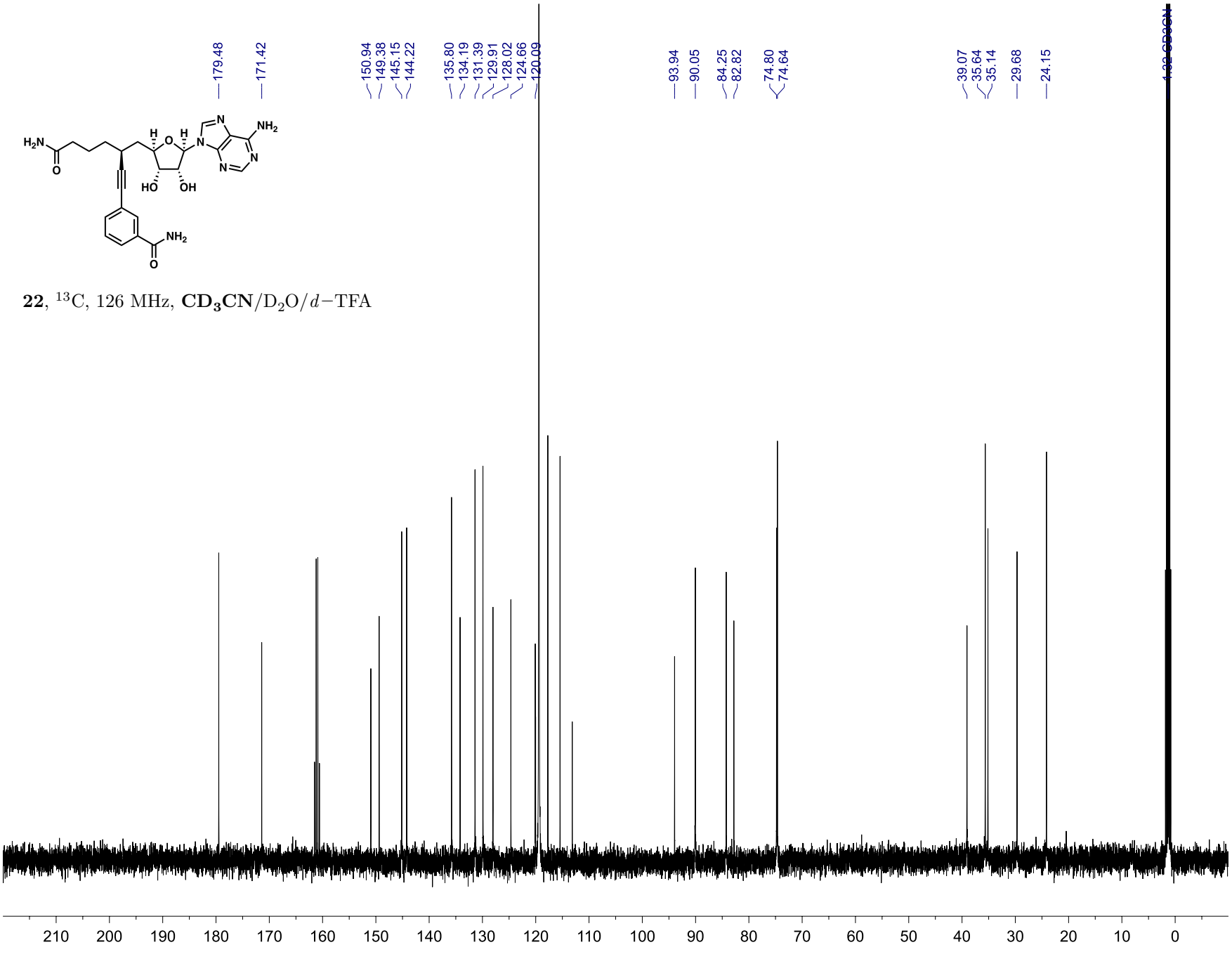
21, ^{1}H, 600 MHz, $\mathbf{CD_3CN}$/D_2O/d−TFA



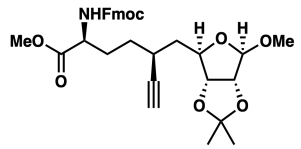
21, ^{13}C, 126 MHz, $\mathbf{CD_3CN}$/D_2O/d−TFA



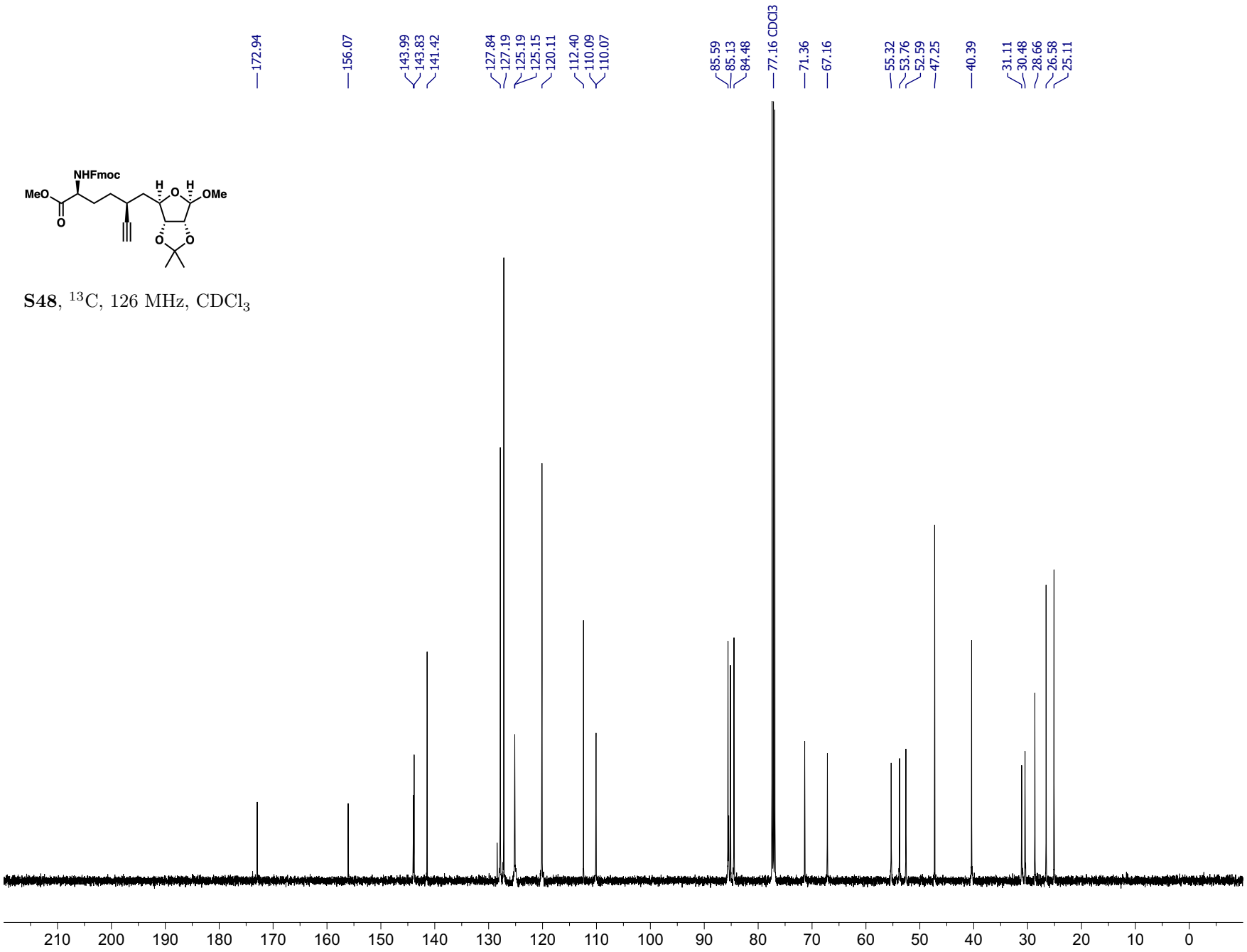
22, ^{1}H, 600 MHz, $\mathbf{CD_3CN}$/D_2O/*d*−TFA



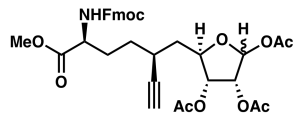
22, ^{13}C, 126 MHz, $\mathbf{CD_3CN}$/D_2O/d−TFA



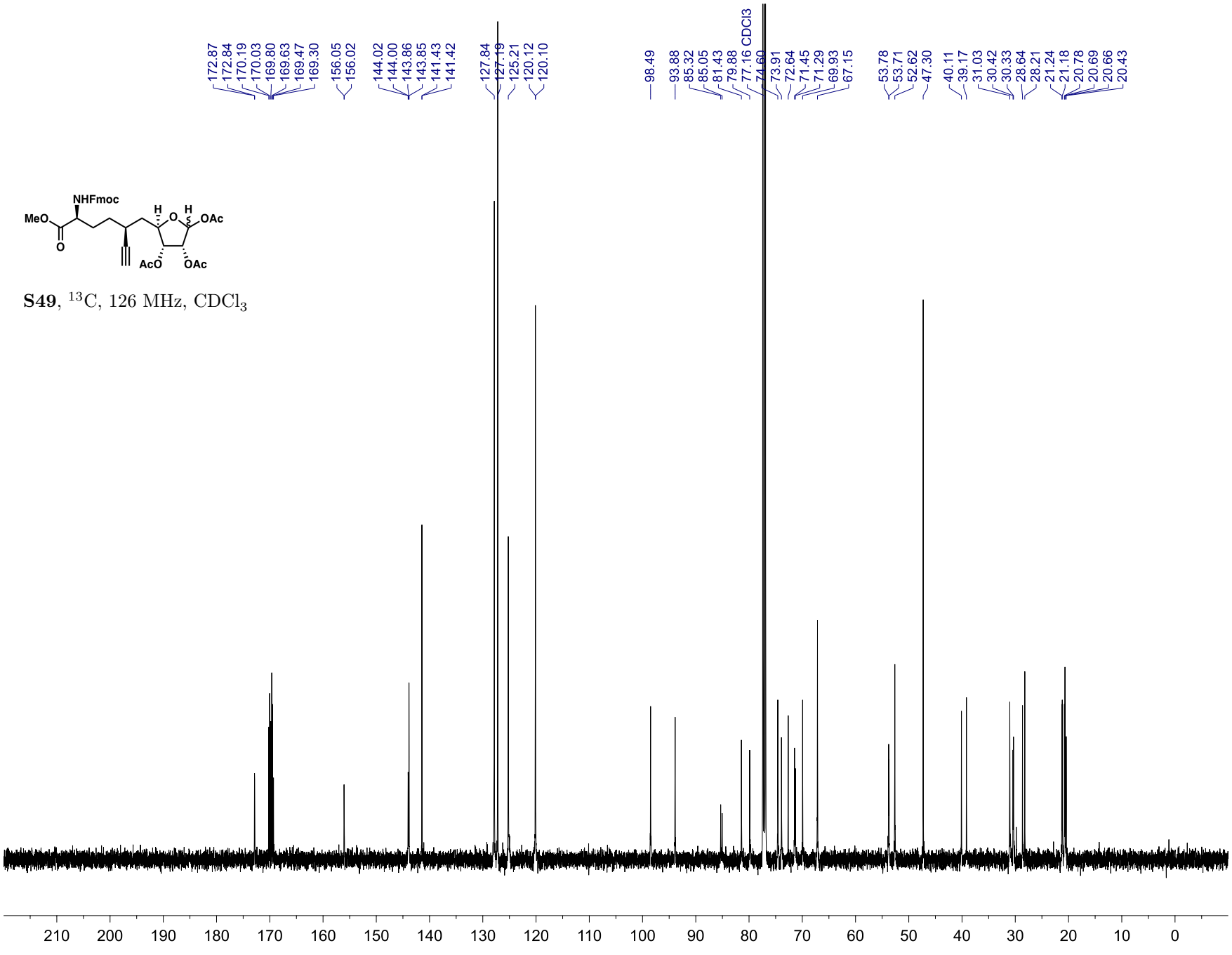
S48, ^{1}H, 500 MHz, $CDCl_3$



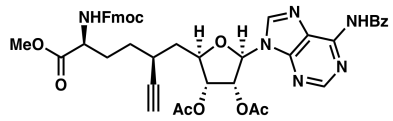
S48, ^{13}C, 126 MHz, $CDCl_3$



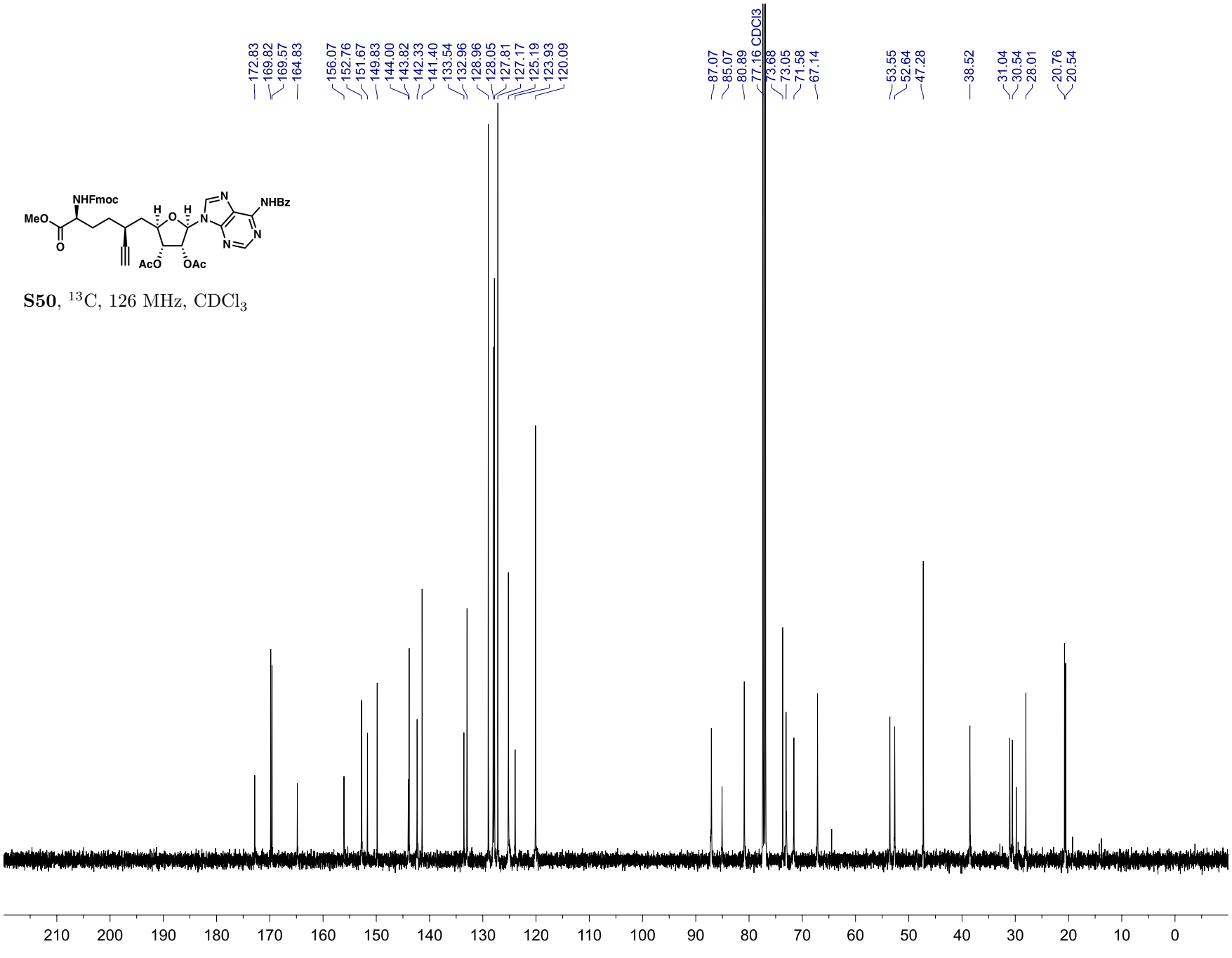
S49, ^{1}H, 500 MHz, $CDCl_3$



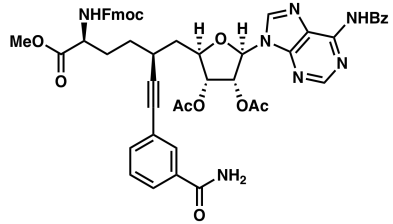
S49, ^{13}C, 126 MHz, $CDCl_3$



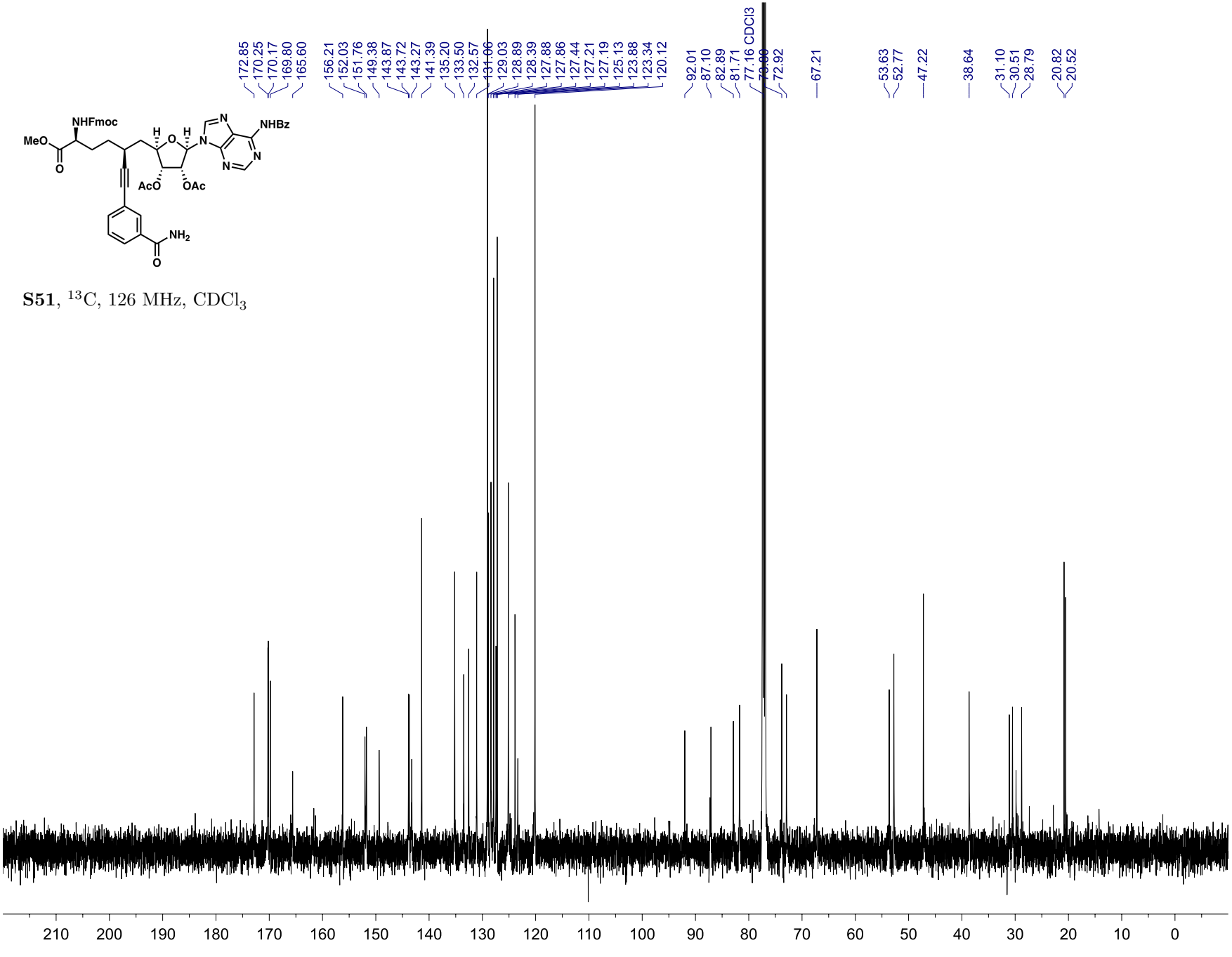
S50, ^{1}H, 500 MHz, $CDCl_3$



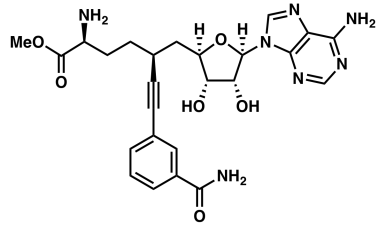
S50, ^{13}C, 126 MHz, $CDCl_3$



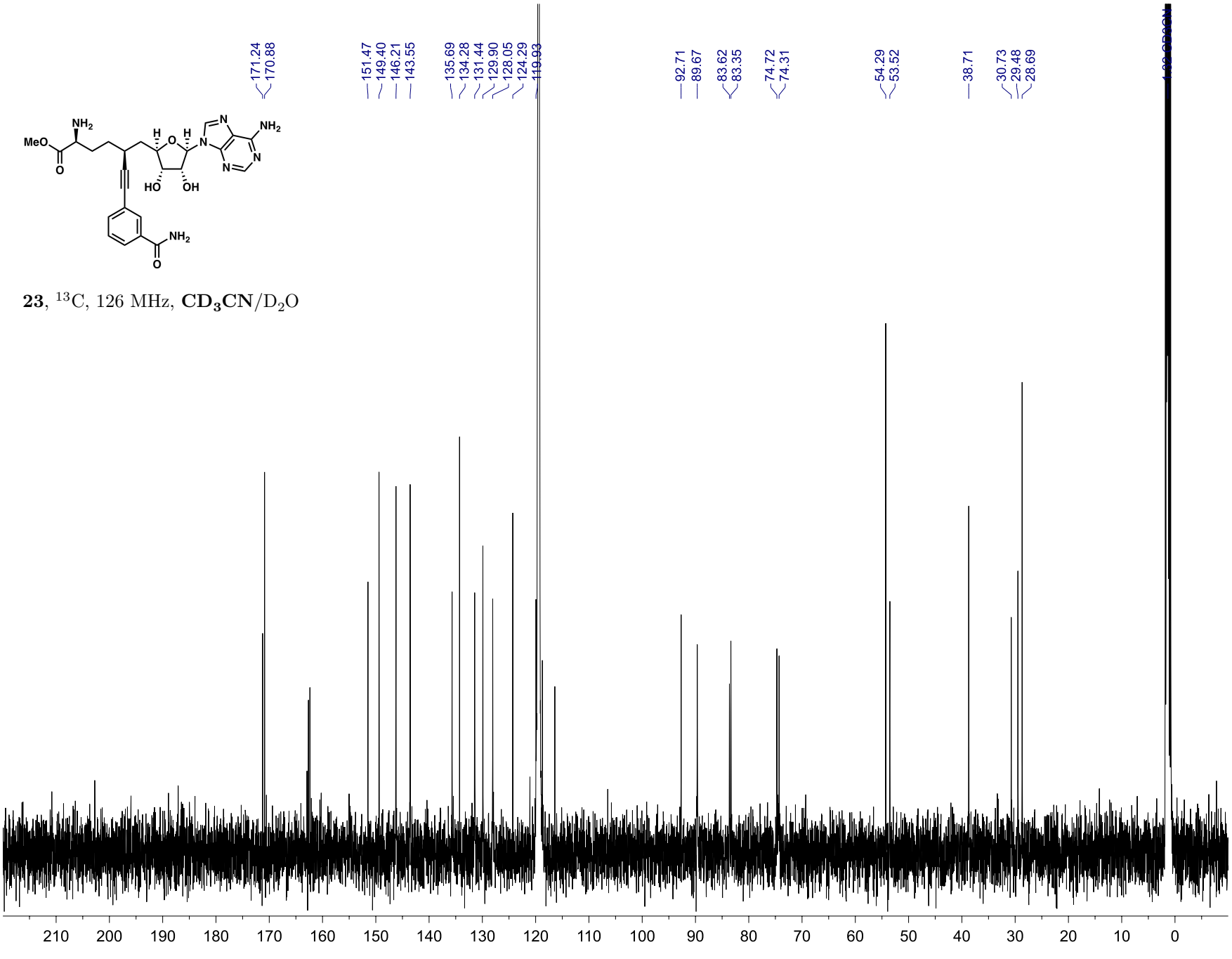
S51, ^{1}H, 500 MHz, $CDCl_3$



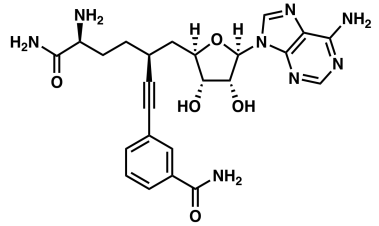
S51, ^{13}C, 126 MHz, $CDCl_3$



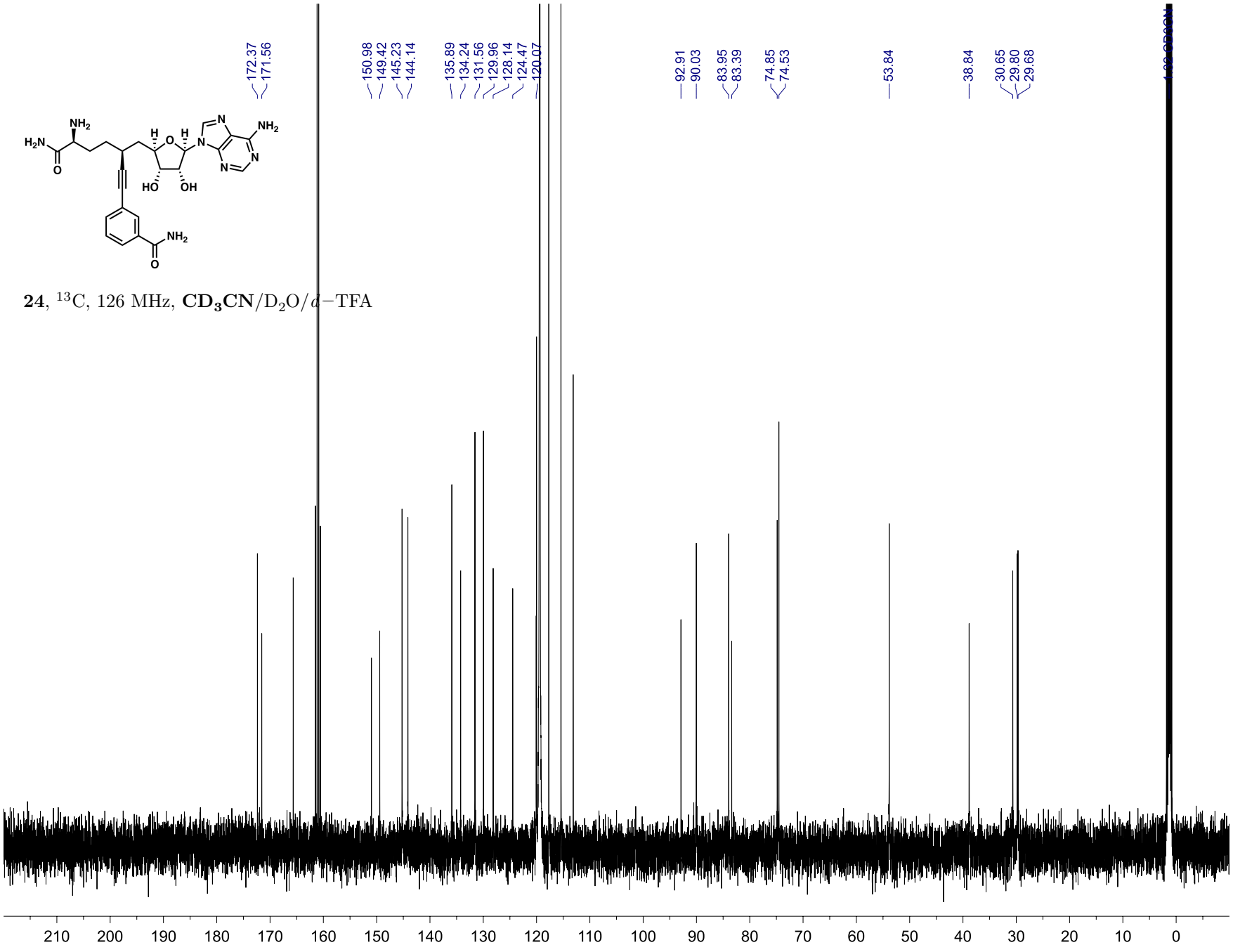
23, ^{1}H, 600 MHz, $\mathbf{CD_3CN}/D_2O$



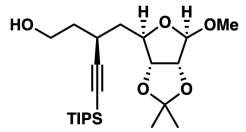
23, ^{13}C, 126 MHz, $\mathbf{CD_3CN}/D_2O$



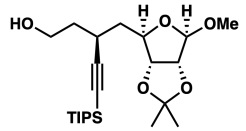
24, ^{1}H, 600 MHz, $\mathbf{CD_3CN}$/D_2O/*d*−TFA



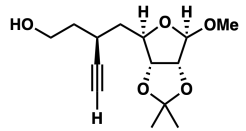
24, ^{13}C, 126 MHz, $\mathbf{CD_3CN}$/D_2O/d−TFA



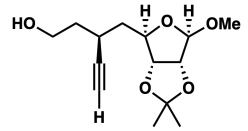
S52, ^{1}H, 600 MHz, $CDCl_3$



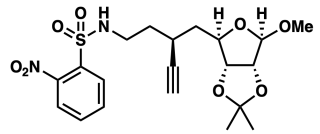
S52, ^{13}C, 151 MHz, $CDCl_3$



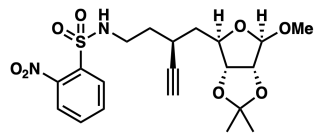
S53, ^{1}H, 500 MHz, $CDCl_3$



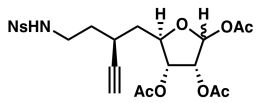
S53, ^{13}C, 126 MHz, $CDCl_3$



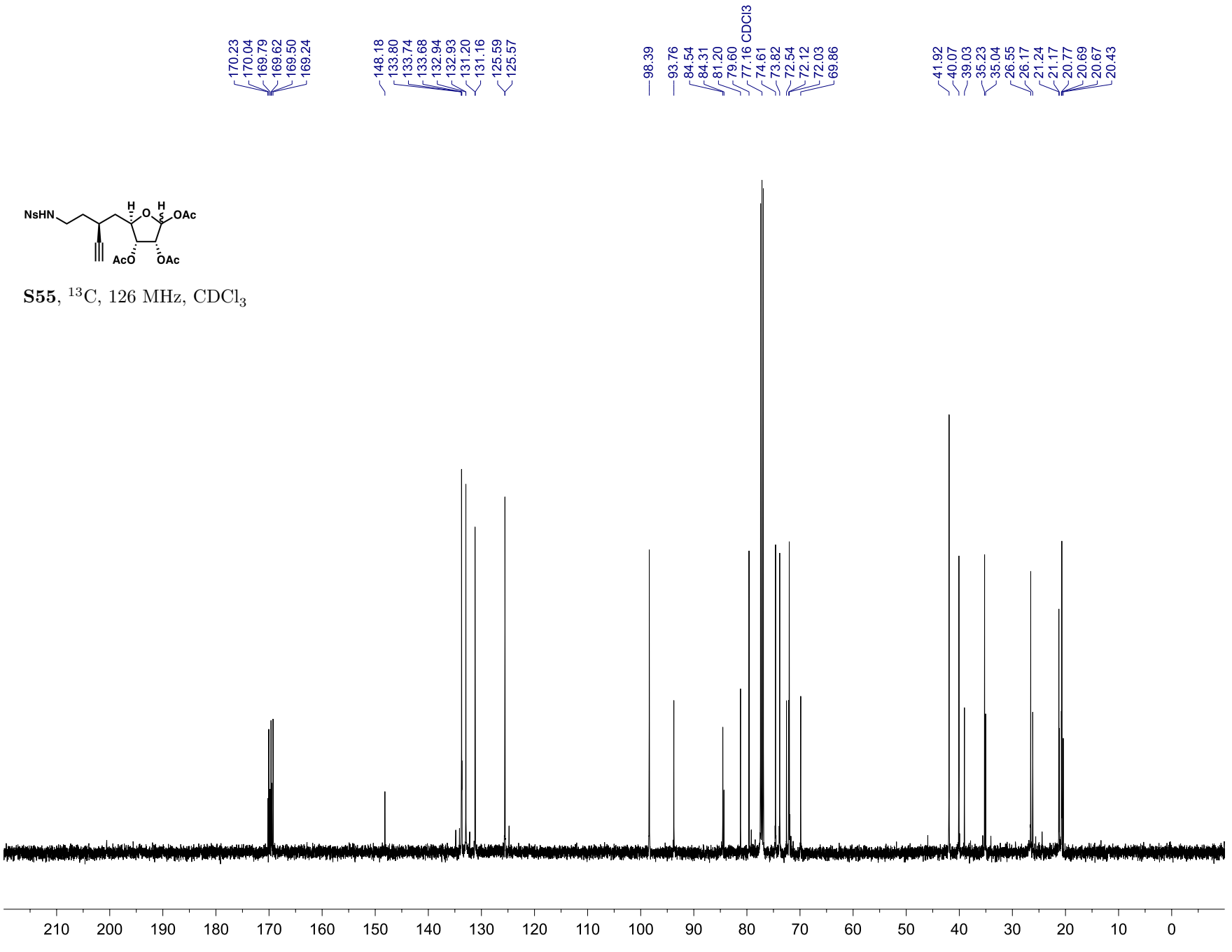
S54, ^{1}H, 600 MHz, $CDCl_3$



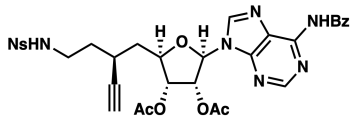
S54, ^{13}C, 151 MHz, $CDCl_3$



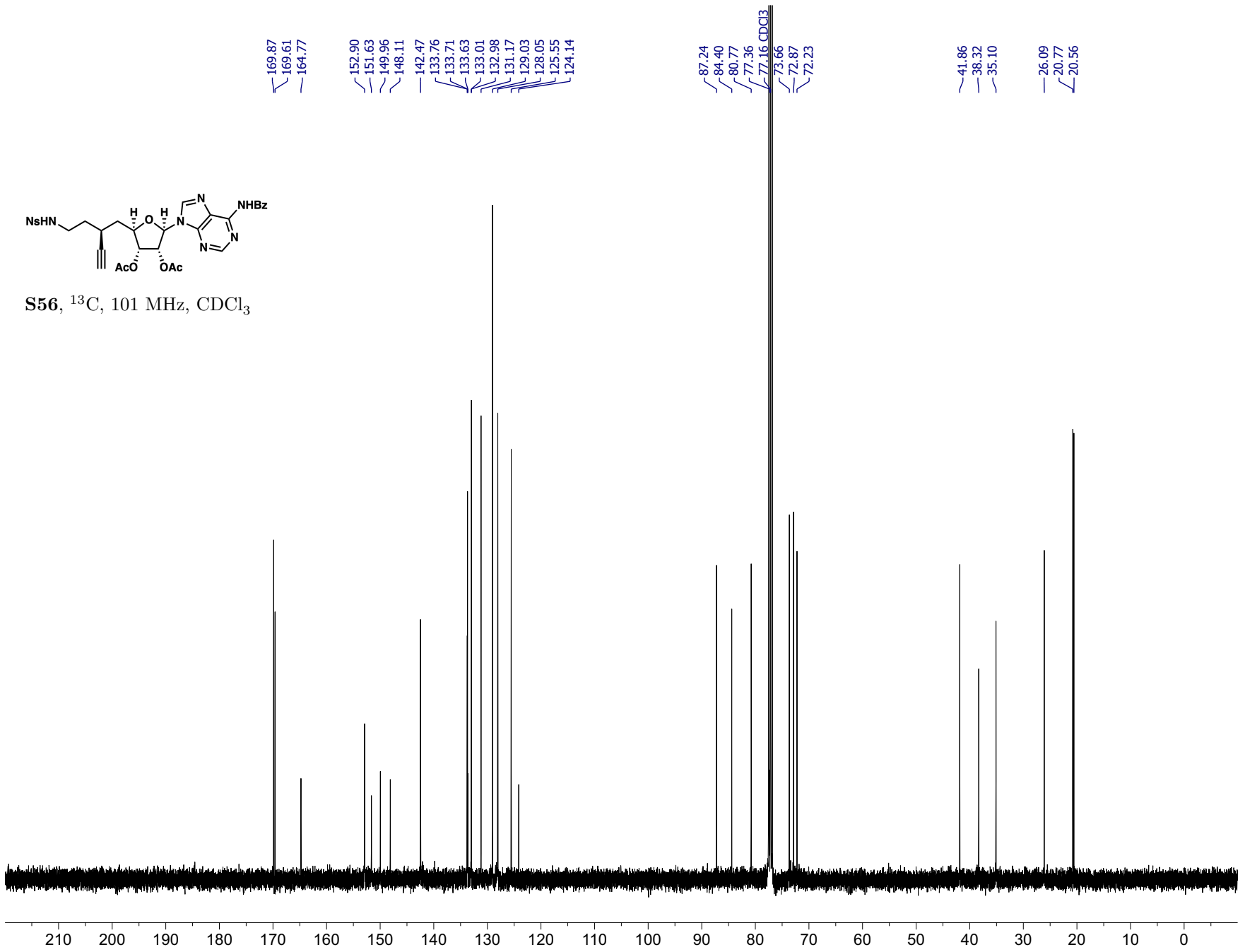
S55, ^{1}H, 600 MHz, $CDCl_3$



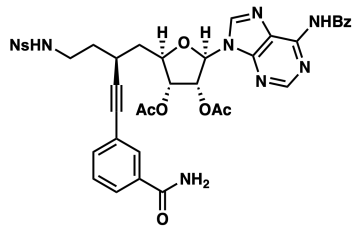
S55, ^{13}C, 126 MHz, $CDCl_3$



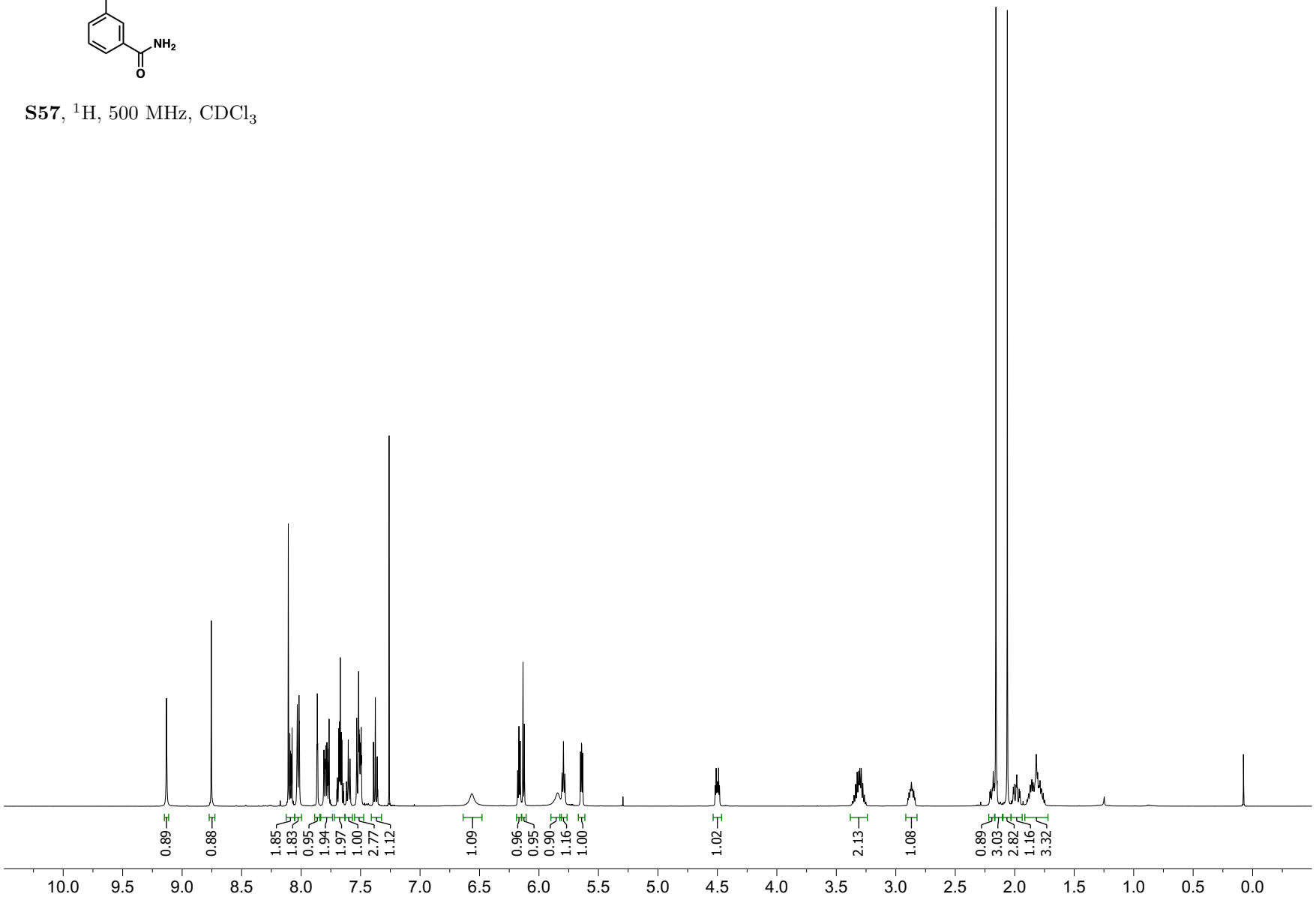
S56, ^{1}H, 600 MHz, $CDCl_3$

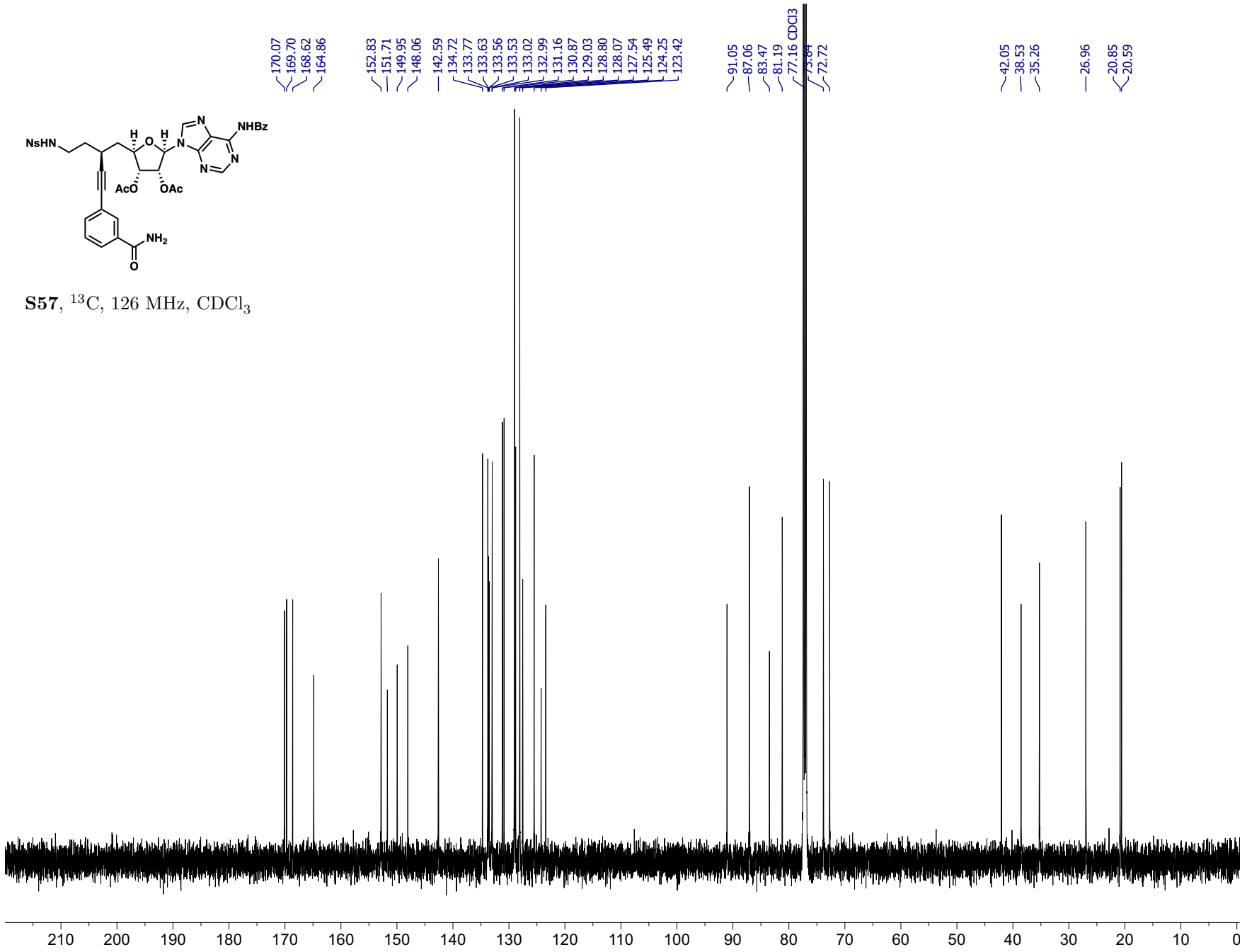


S56, ^{13}C, 101 MHz, $CDCl_3$

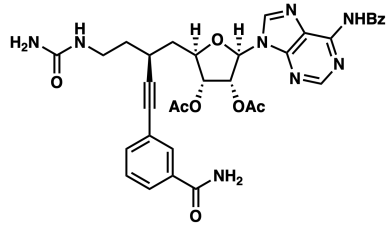


S57, ^{1}H, 500 MHz, $CDCl_3$

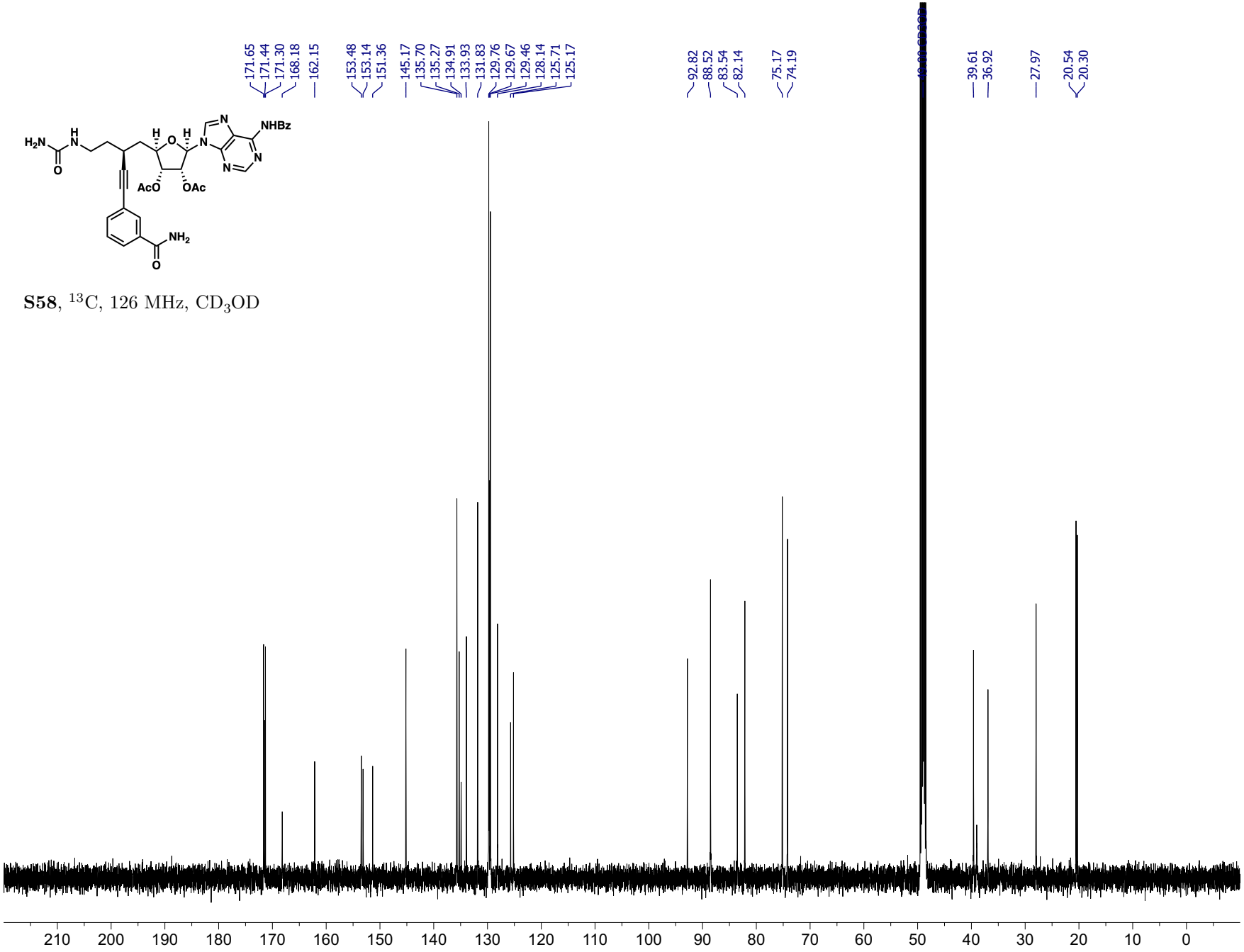




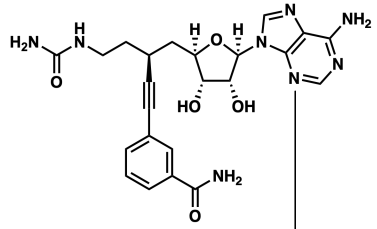
S57, ^{13}C, 126 MHz, $CDCl_3$



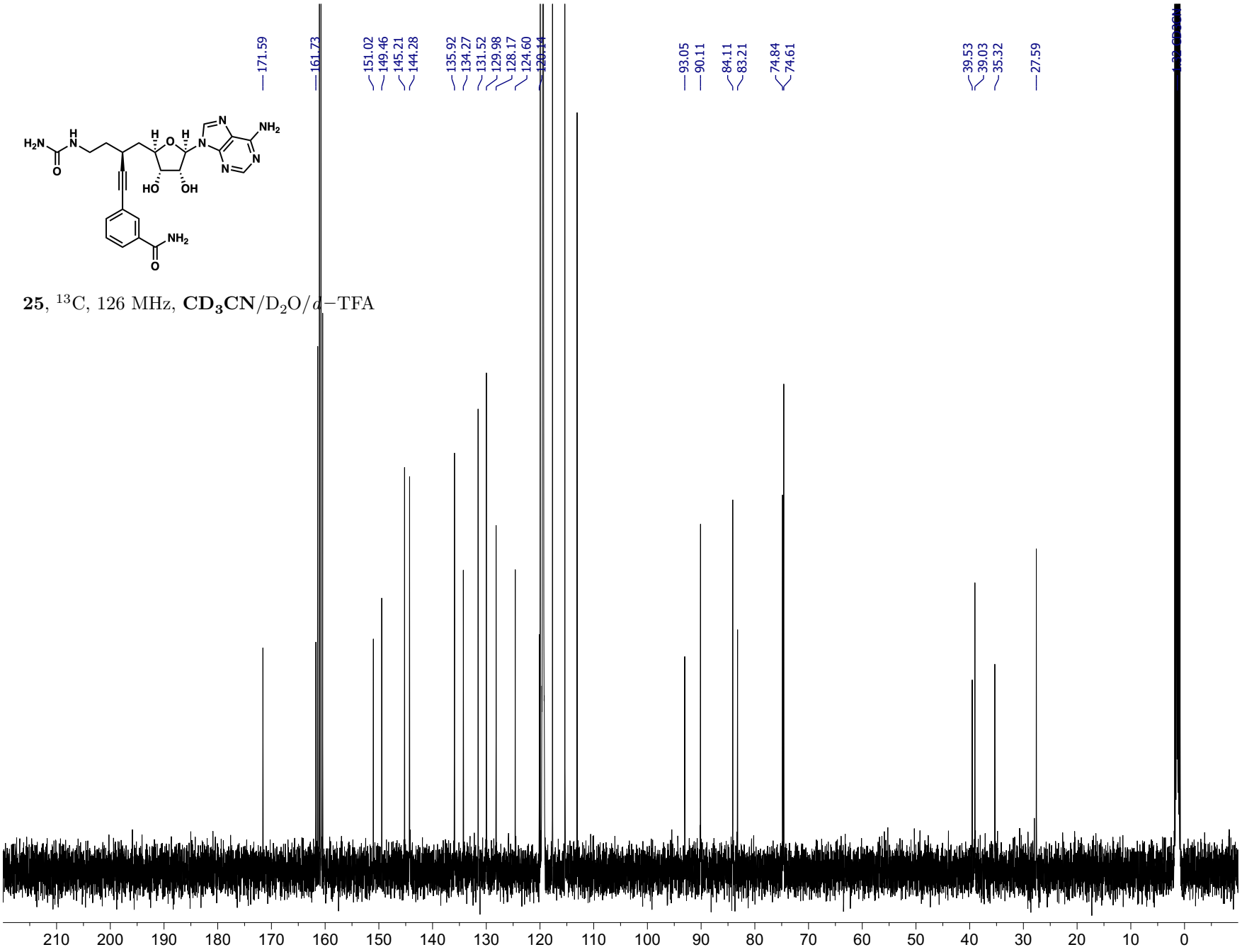
S58, ^{1}H, 600 MHz, CD_3OD



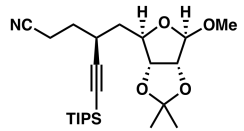
S58, ^{13}C, 126 MHz, CD_3OD



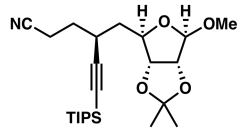
25, ^{1}H, 600 MHz, $CD_3CN/\mathbf{D_2O}/d-$TFA



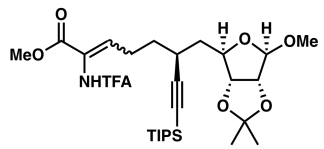
25, ^{13}C, 126 MHz, $\mathbf{CD_3CN}$/D_2O/*d*−TFA



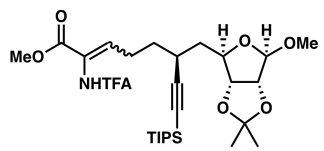
S59, ^{1}H, 500 MHz, $CDCl_3$



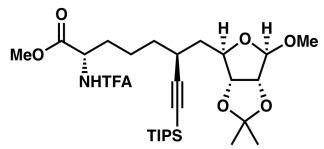
S59, ^{13}C, 100 MHz, $CDCl_3$



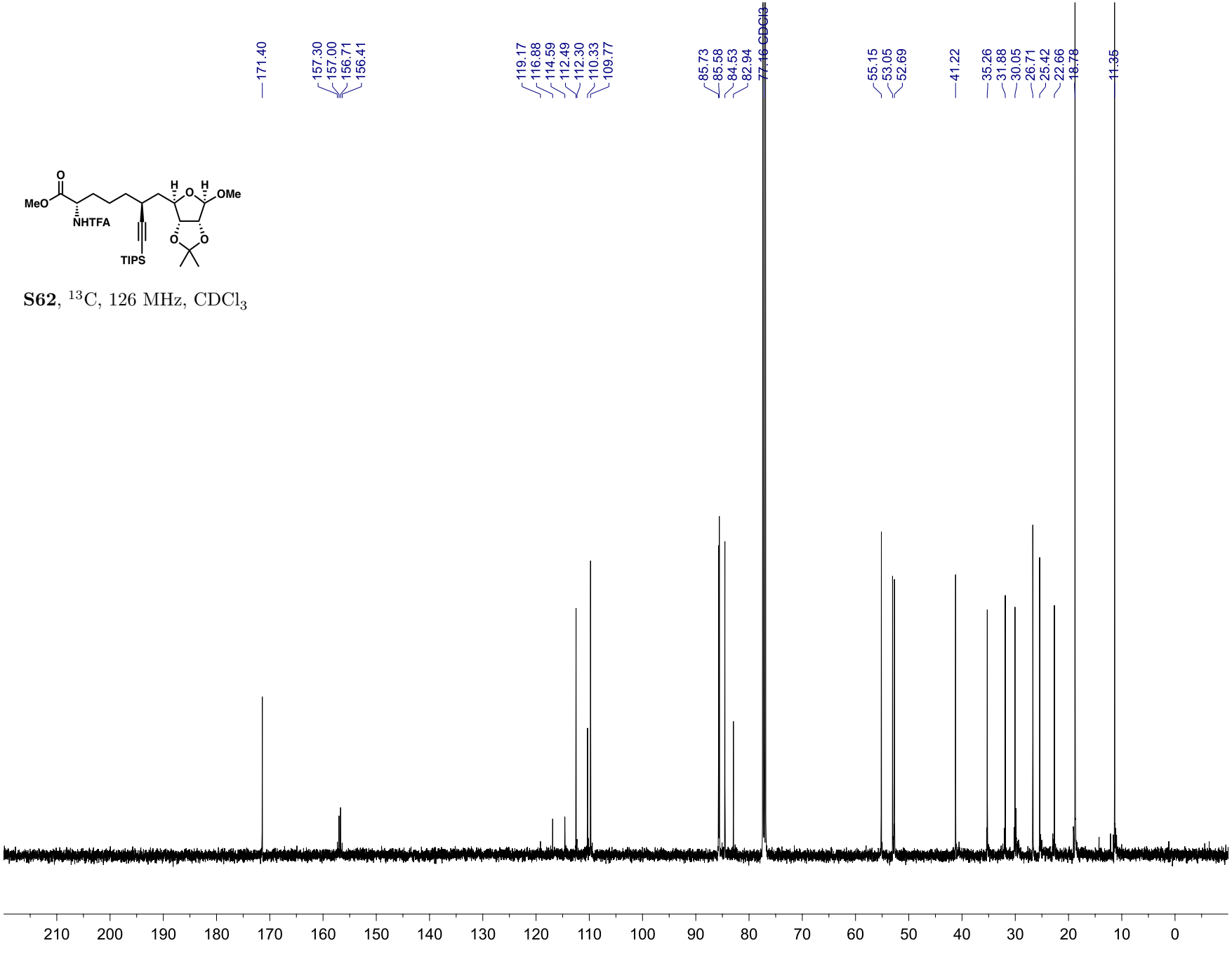
S61, ^{1}H, 500 MHz, $CDCl_3$



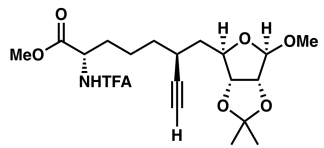
S61, ^{13}C, 126 MHz, $CDCl_3$



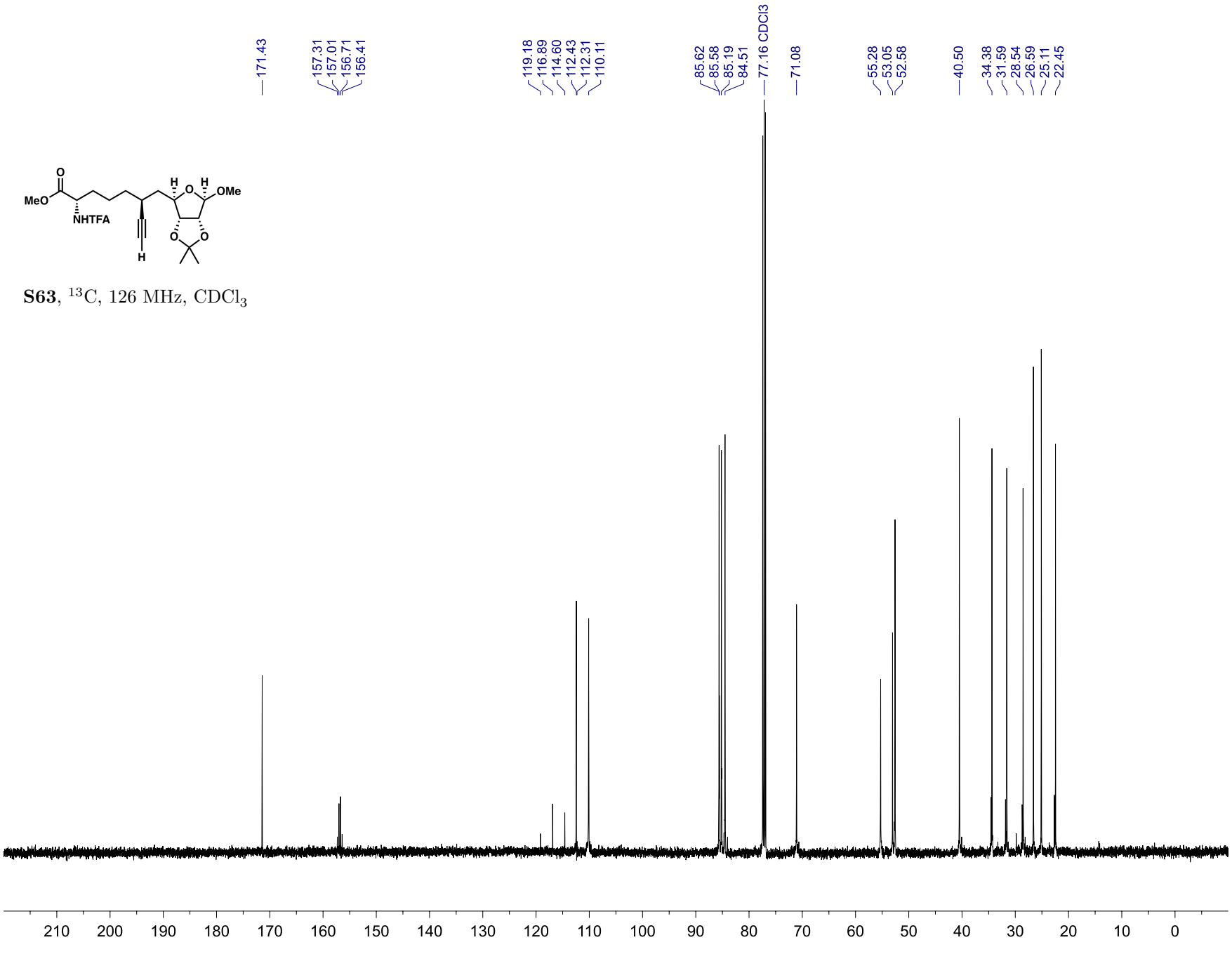
S62, ^{1}H, 500 MHz, $CDCl_3$



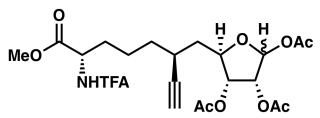
S62, ^{13}C, 126 MHz, $CDCl_3$



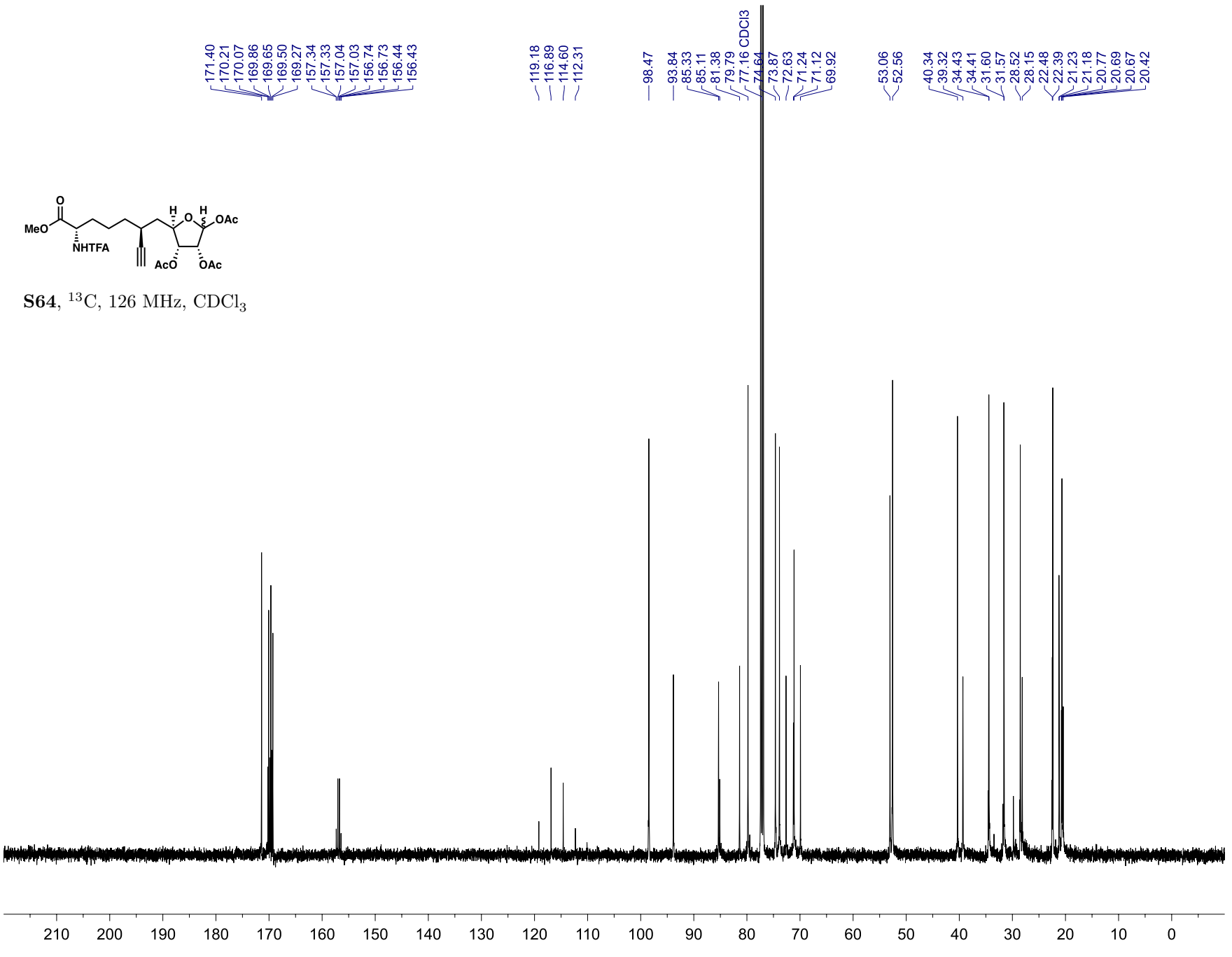
S63, ^{1}H, 500 MHz, $CDCl_3$



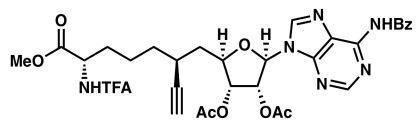
S63, ^{13}C, 126 MHz, $CDCl_3$



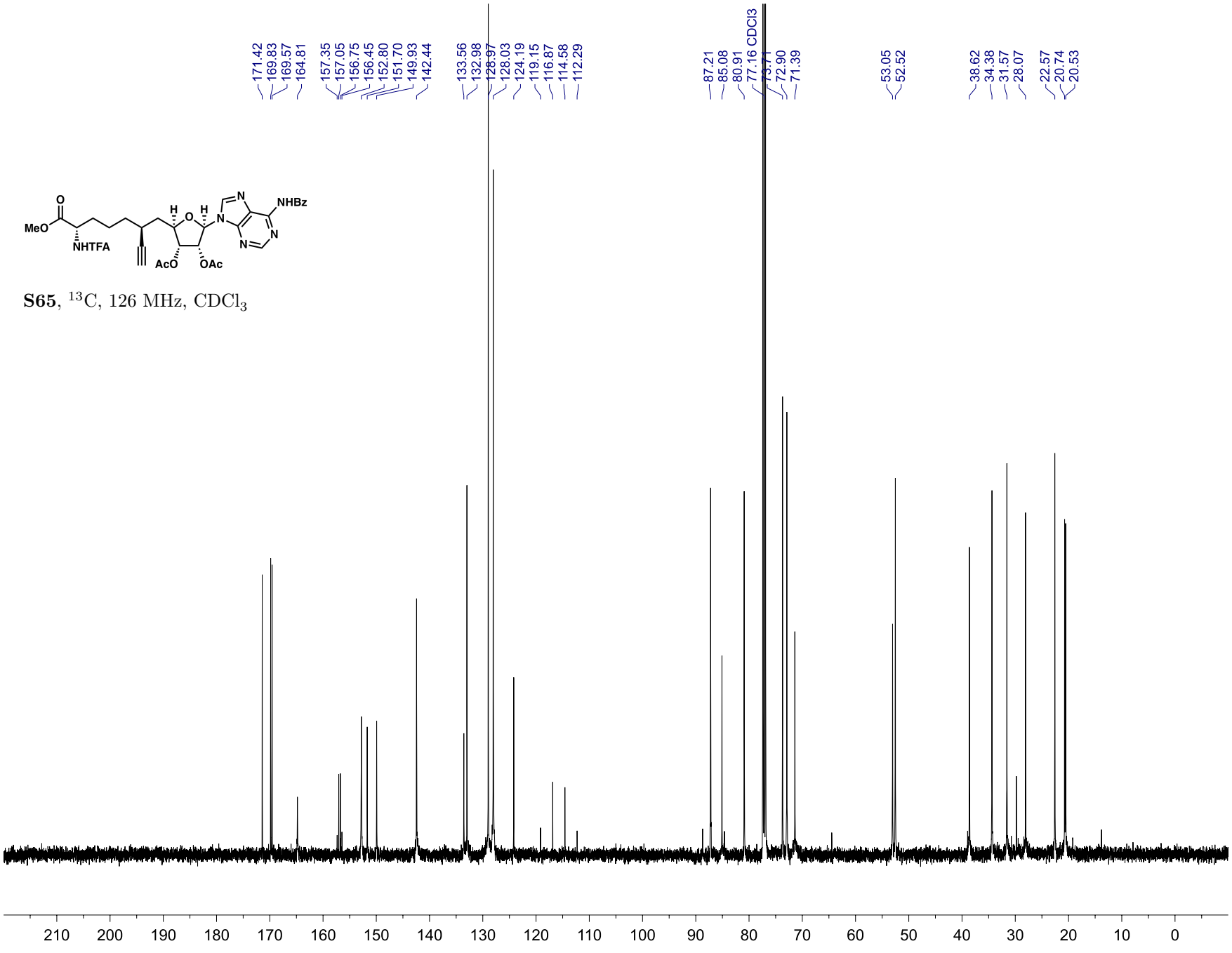
S64, ^{1}H, 500 MHz, $CDCl_3$



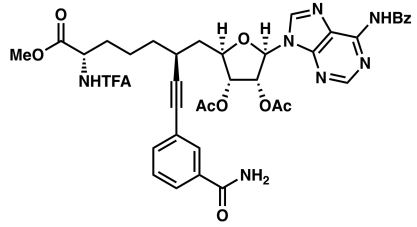
S64, ^{13}C, 126 MHz, $CDCl_3$



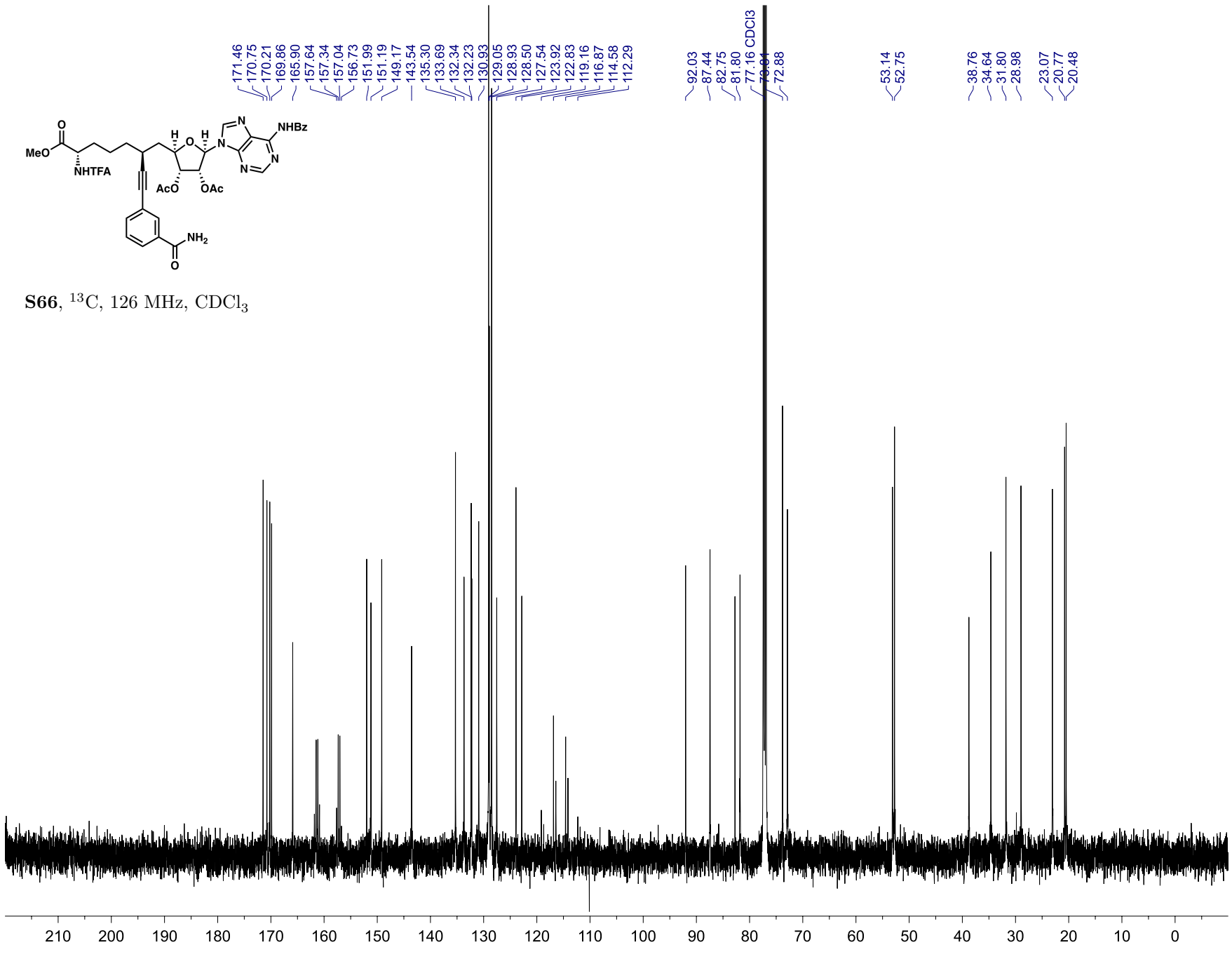
S65, ^{1}H, 600 MHz, $CDCl_3$



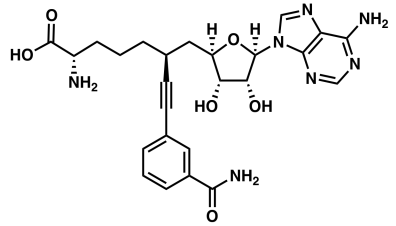
S65, ^{13}C, 126 MHz, $CDCl_3$



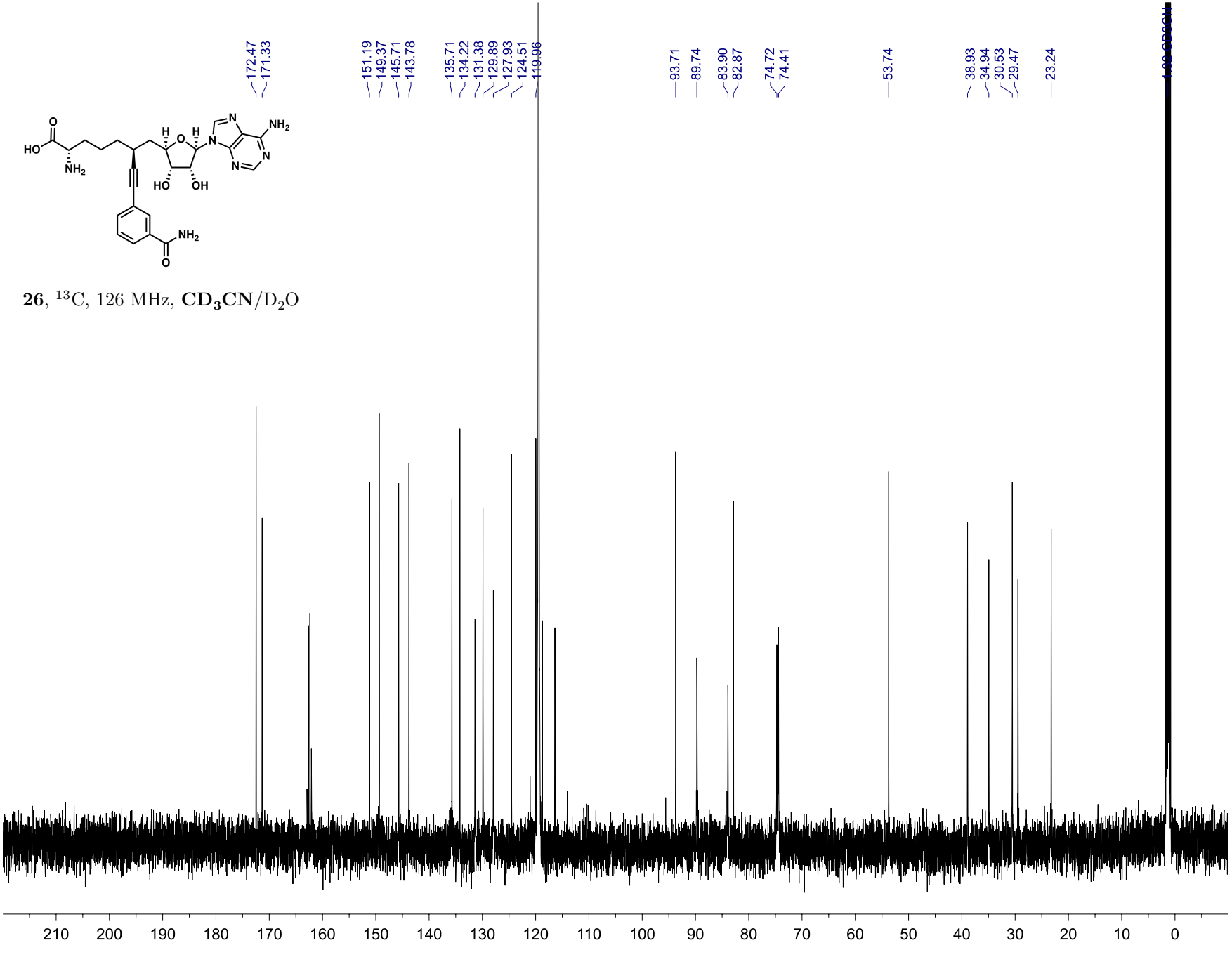
S66, ^{1}H, 500 MHz, $CDCl_3$



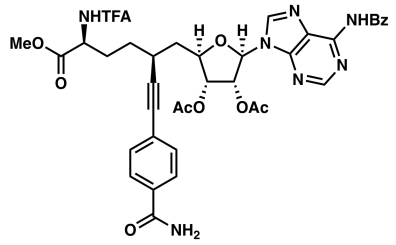
S66, ^{13}C, 126 MHz, $CDCl_3$



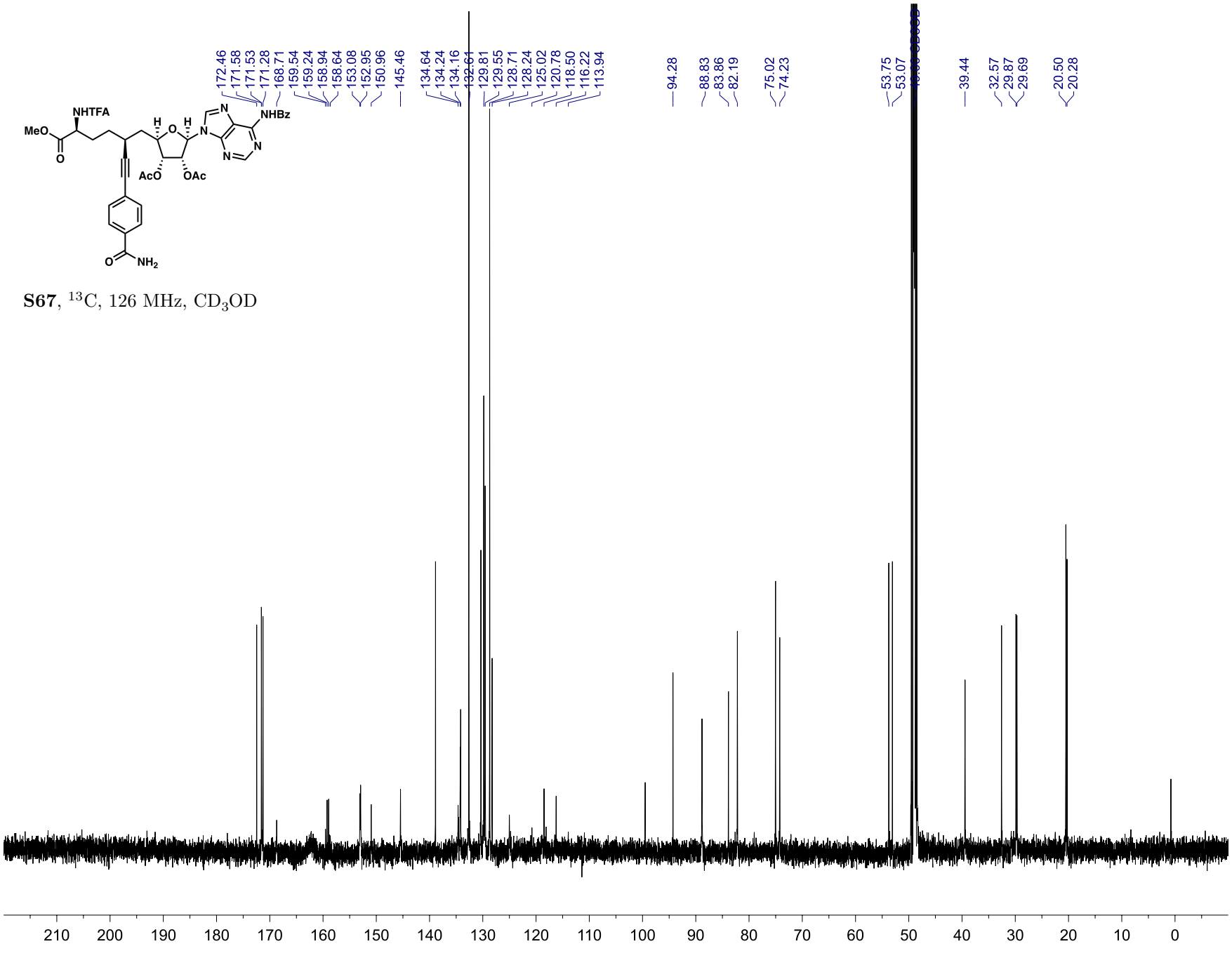
26, ^{1}H, 600 MHz, D_2O



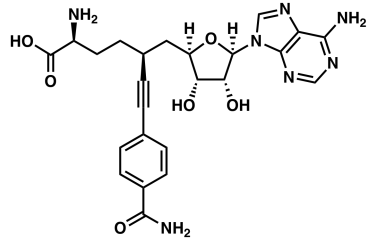
26, ^{13}C, 126 MHz, $\mathbf{CD_3CN}/D_2O$



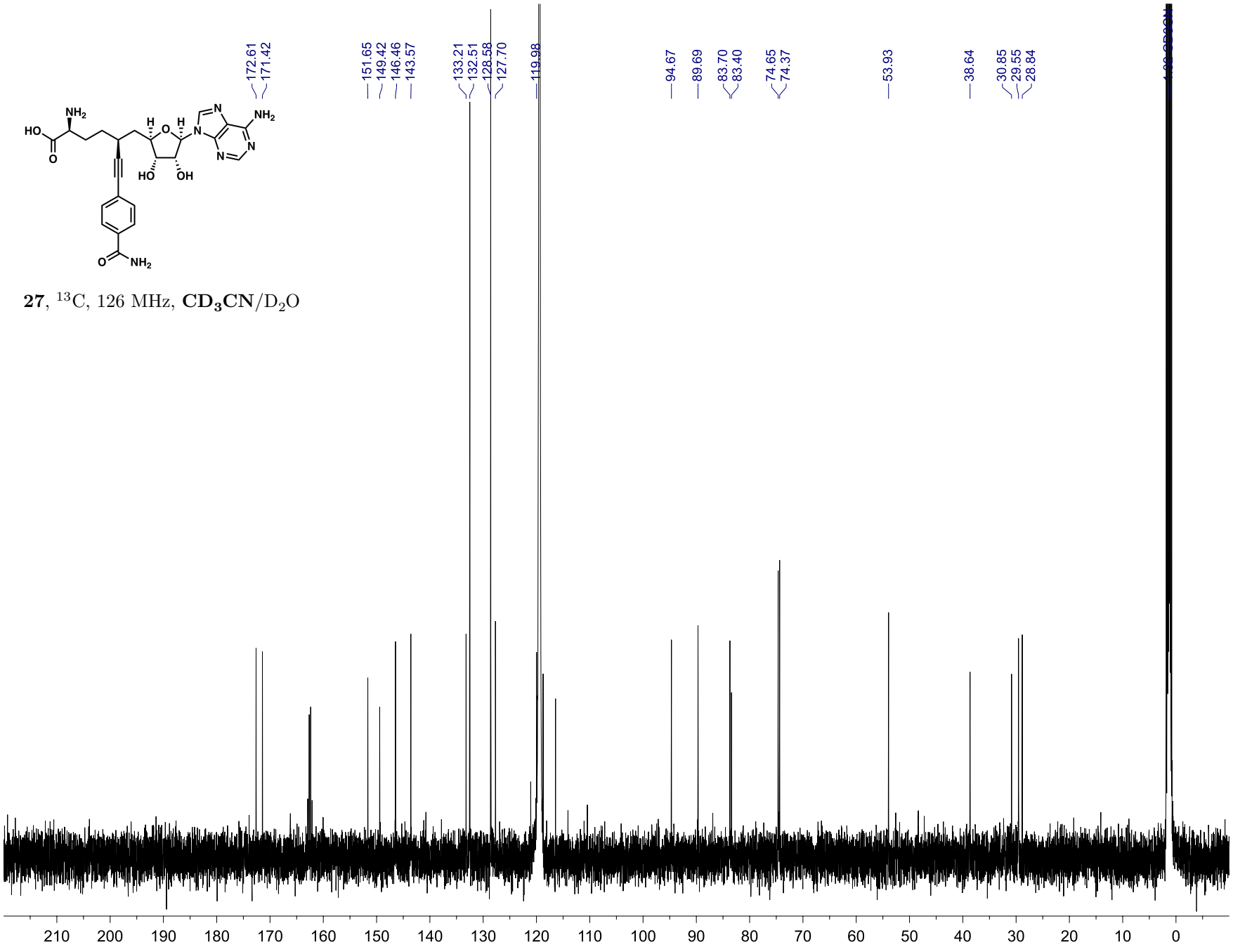
S67, ^{1}H, 500 MHz, CD_3OD



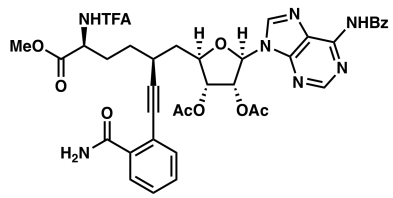
S67, ^{13}C, 126 MHz, CD_3OD



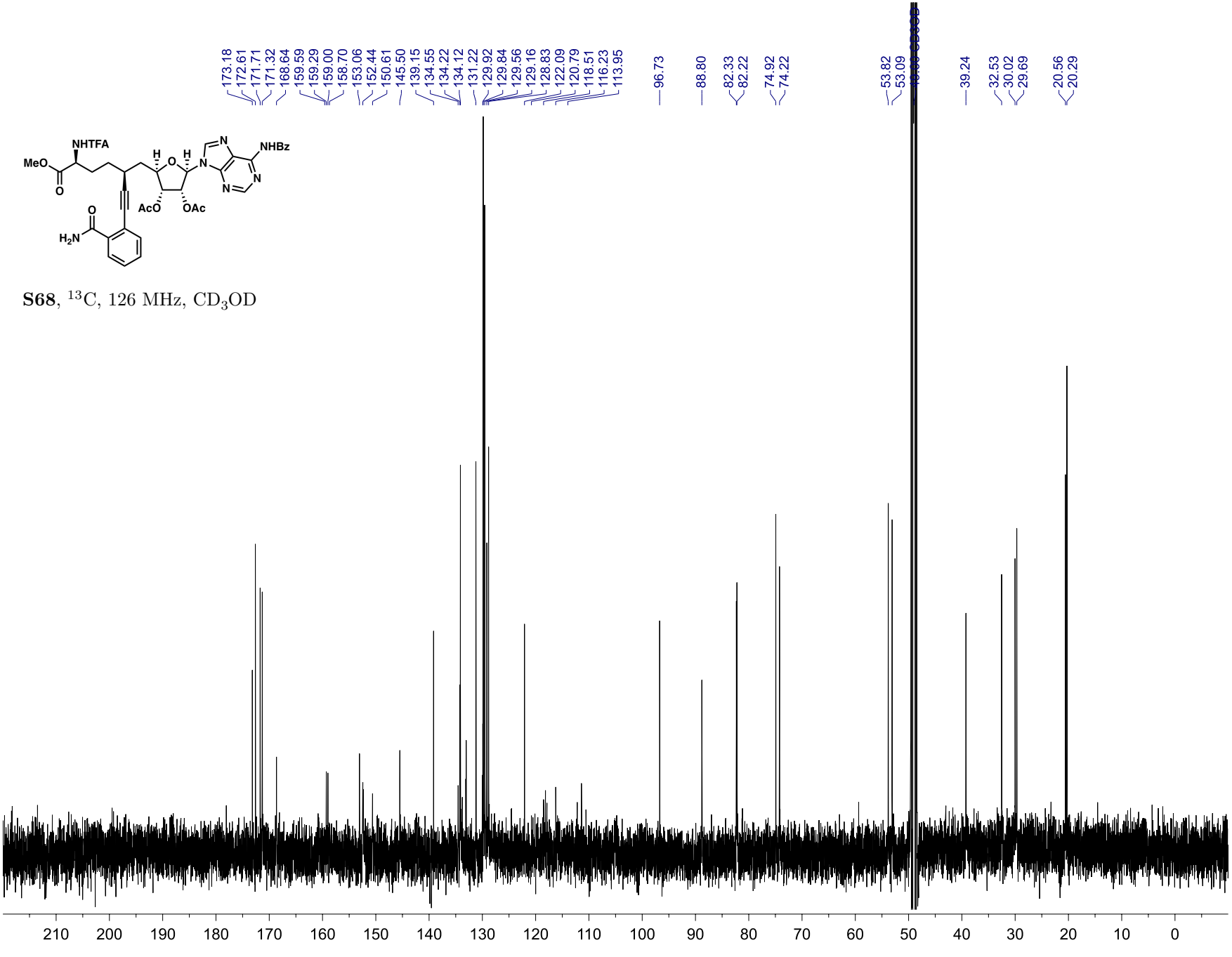
27, ^{1}H, 600 MHz, $\mathbf{CD_3CN}$/D_2O



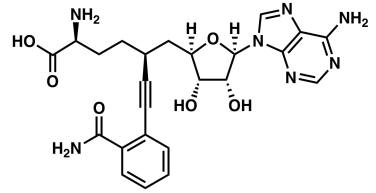
27, ^{13}C, 126 MHz, $\mathbf{CD_3CN}/D_2O$



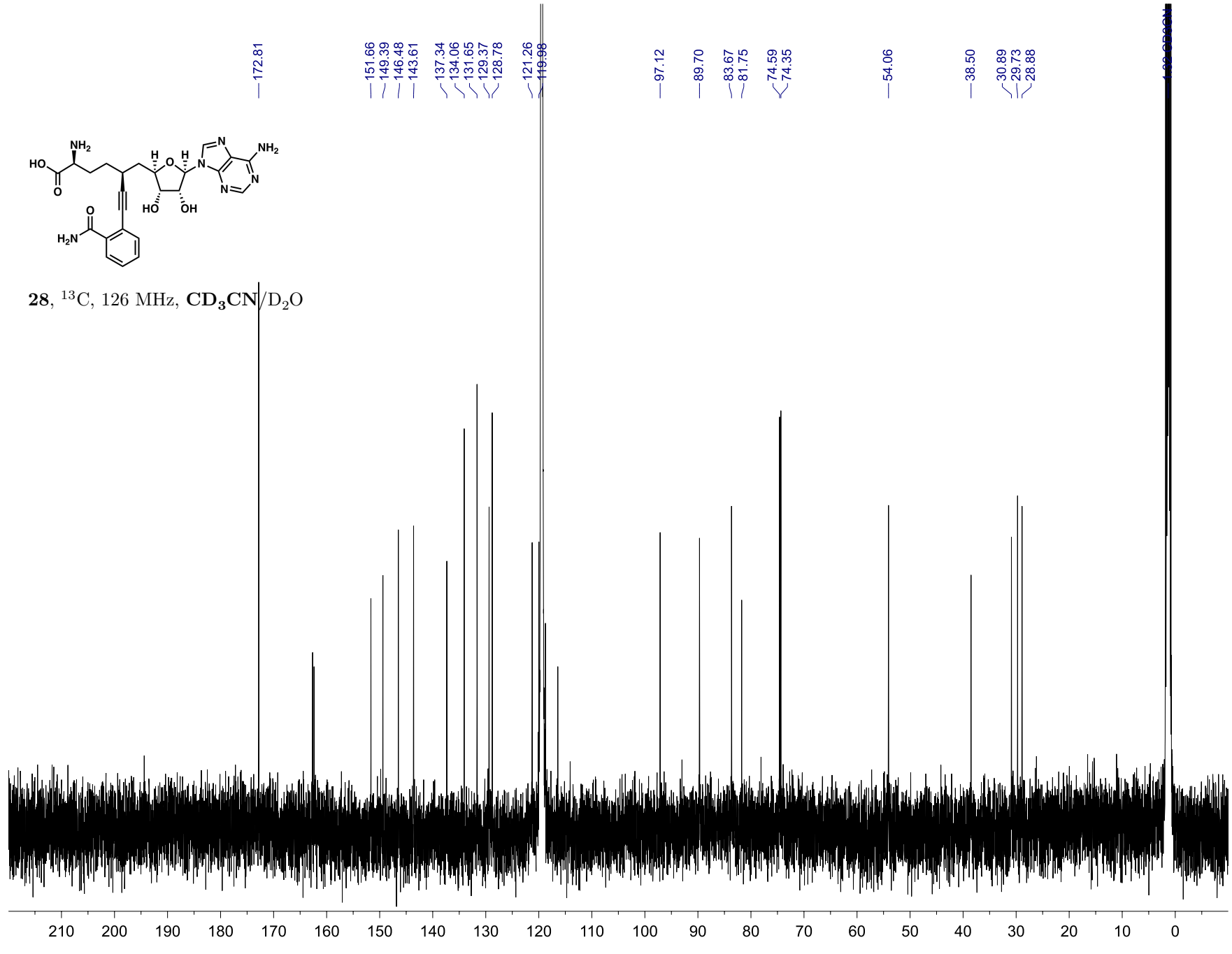
S68, ^{1}H, 600 MHz, CD_3OD



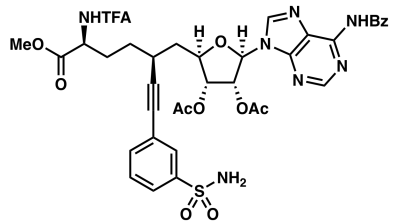
S68, ^{13}C, 126 MHz, CD_3OD



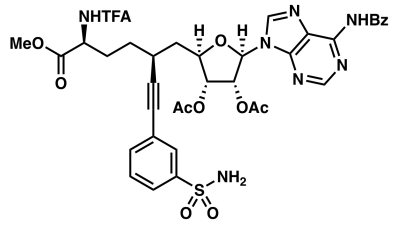
28, ^{1}H, 600 MHz, $\mathbf{CD_3CN}$/D_2O



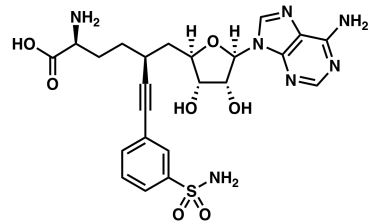
28, ^{13}C, 126 MHz, $\mathbf{CD_3CN}$/D_2O



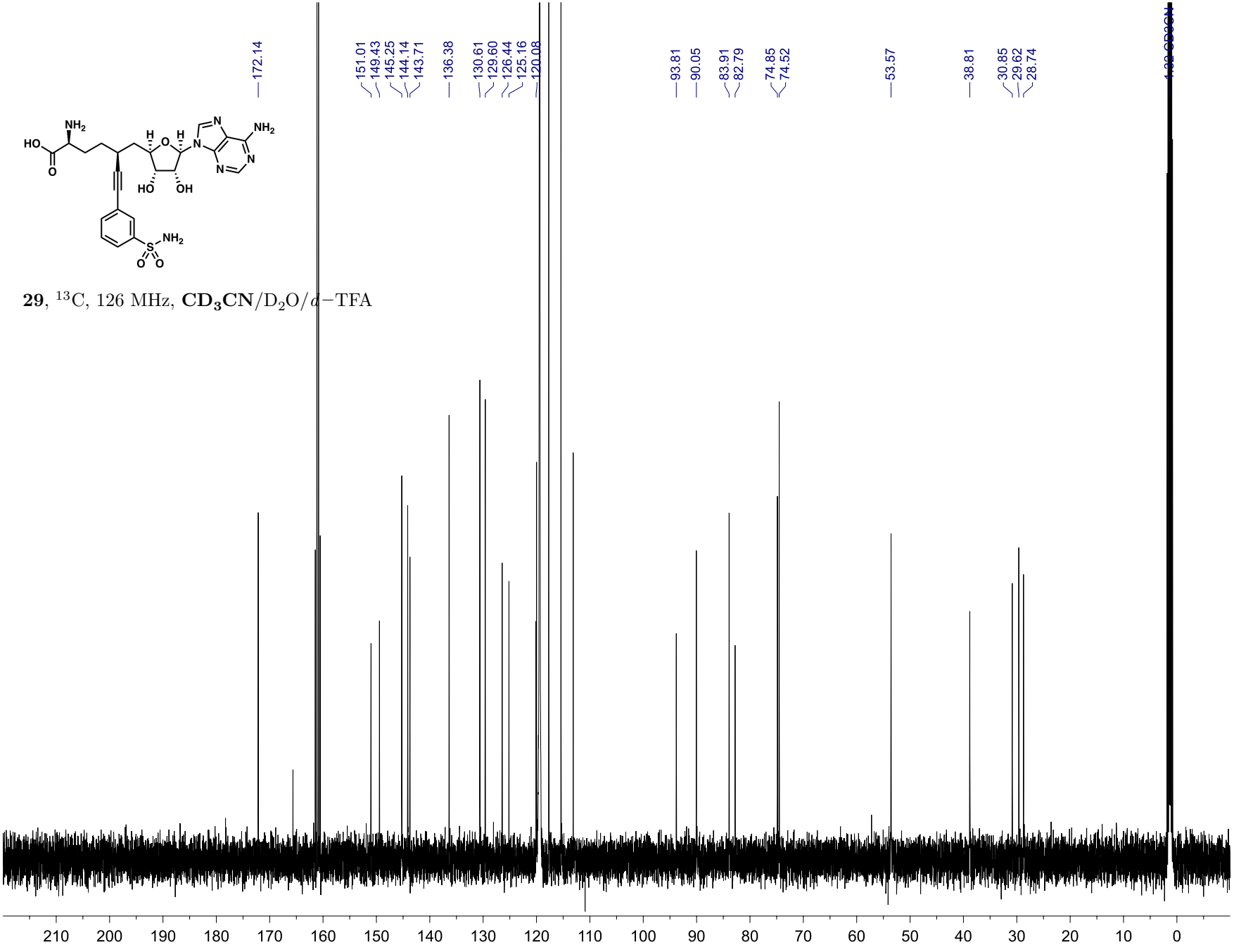
S69, ^{1}H, 600 MHz, $CDCl_3$



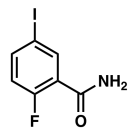
S69, ^{13}C, 126 MHz, $CDCl_3$



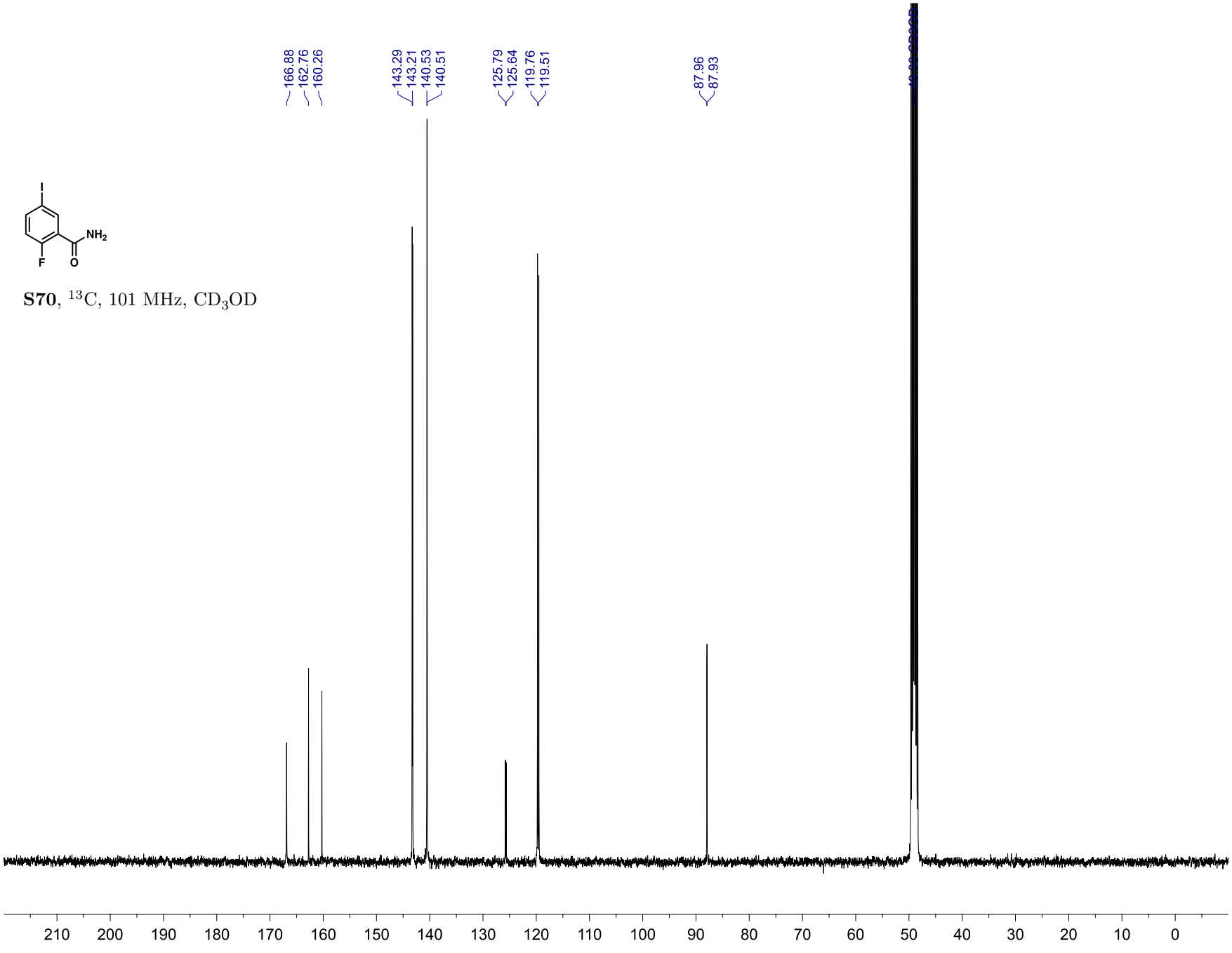
29, ^{1}H, 600 MHz, $\mathbf{CD_3CN}$/D_2O/d−TFA



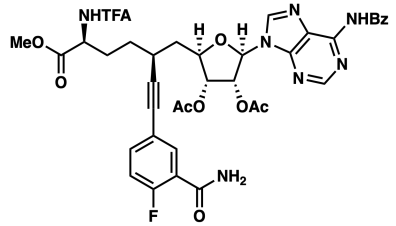
29, ^{13}C, 126 MHz, $\mathbf{CD_3CN}$/D_2O/*d*−TFA



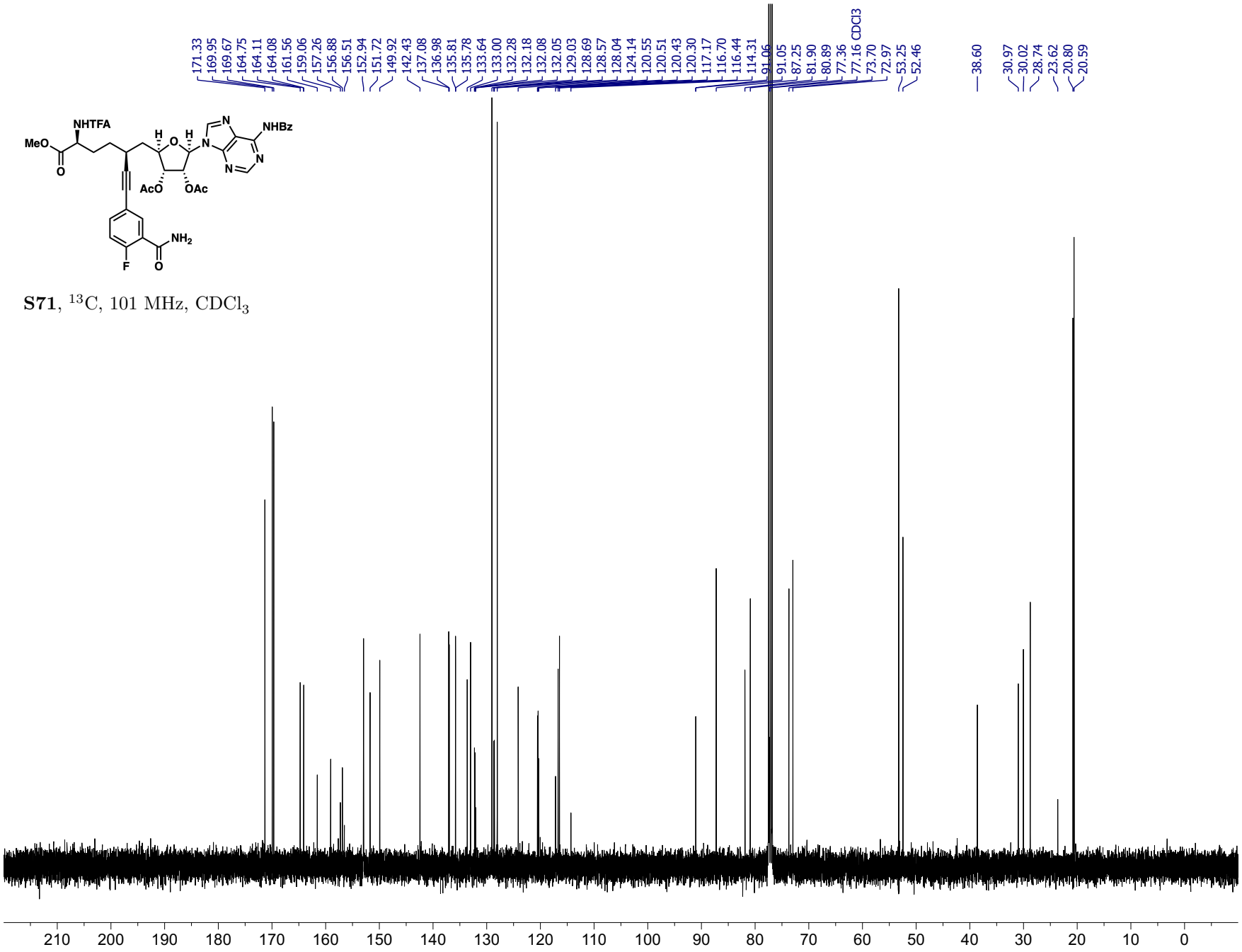
S70, ^{1}H, 500 MHz, CD_3OD



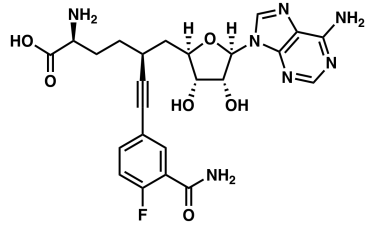
S70, ^{13}C, 101 MHz, CD_3OD



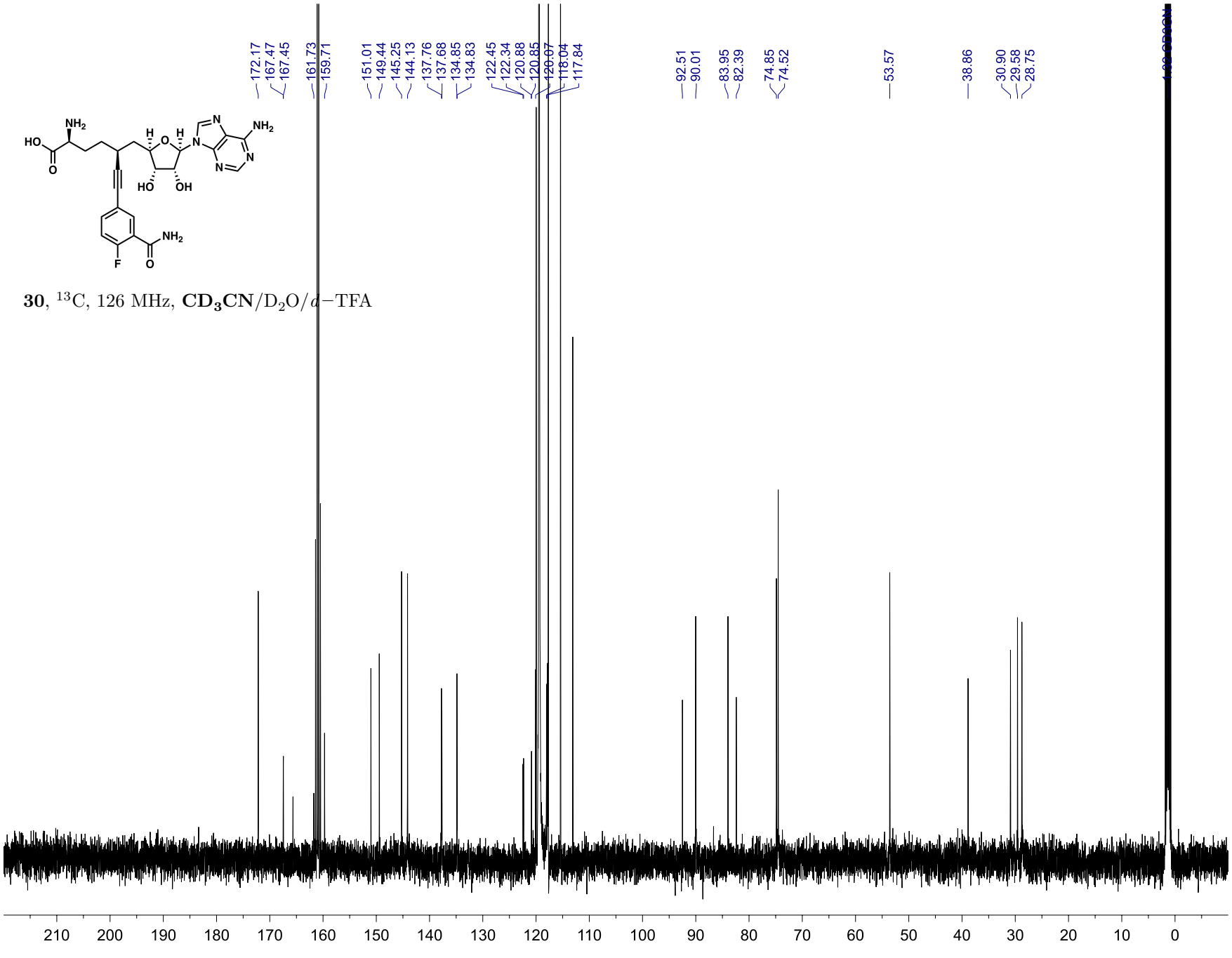
S71, ^{1}H, 600 MHz, $CDCl_3$



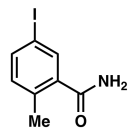
S71, ^{13}C, 101 MHz, $CDCl_3$



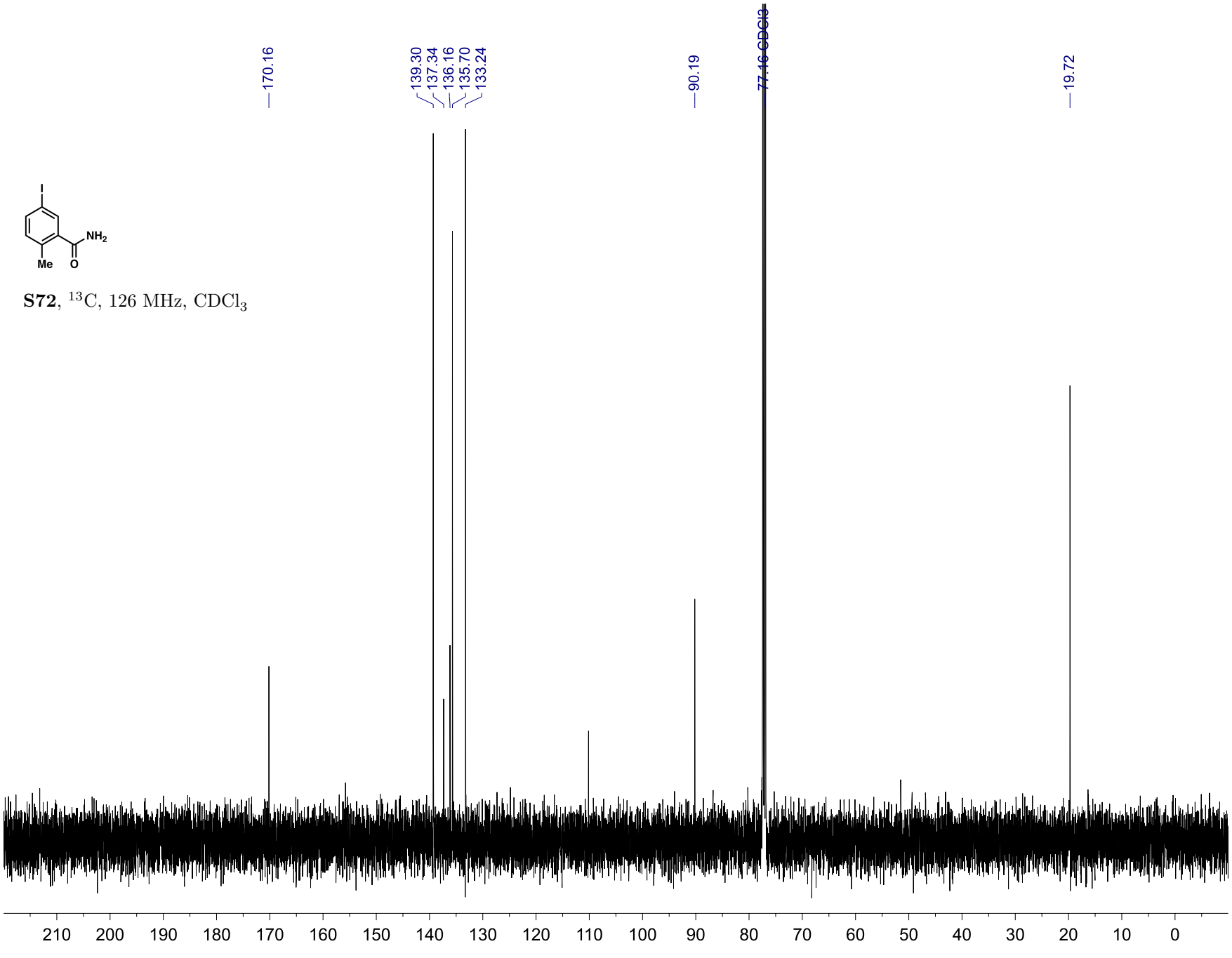
30, ^{1}H, 600 MHz, $\mathbf{CD_3CN}/D_2O/d-$TFA



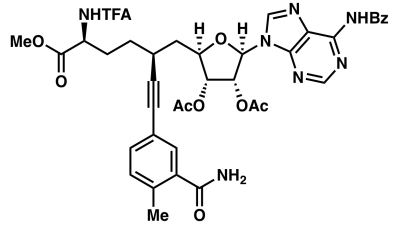
30, ^{13}C, 126 MHz, $\mathbf{CD_3CN}$/D_2O/*d*−TFA



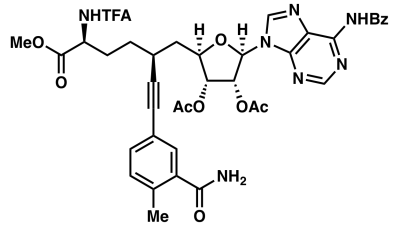
S72, ^{1}H, 600 MHz, $CDCl_3$



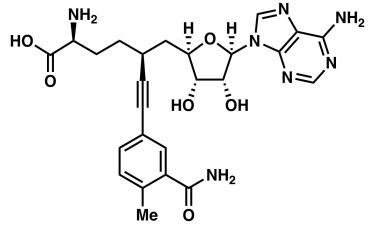
S72, ^{13}C, 126 MHz, $CDCl_3$



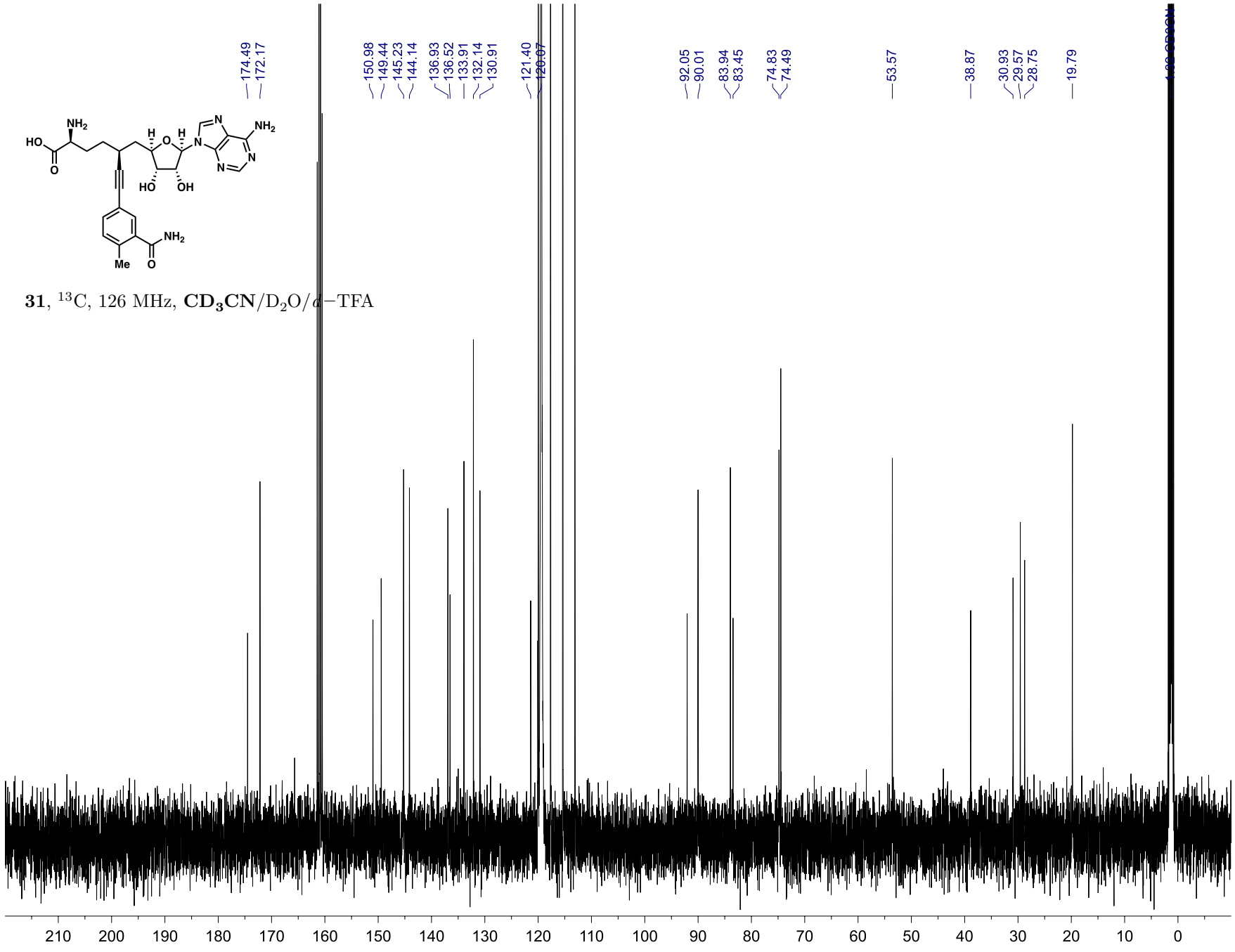
S73, ^{1}H, 500 MHz, $CDCl_3$



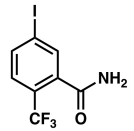
S73, ^{13}C, 126 MHz, $CDCl_3$



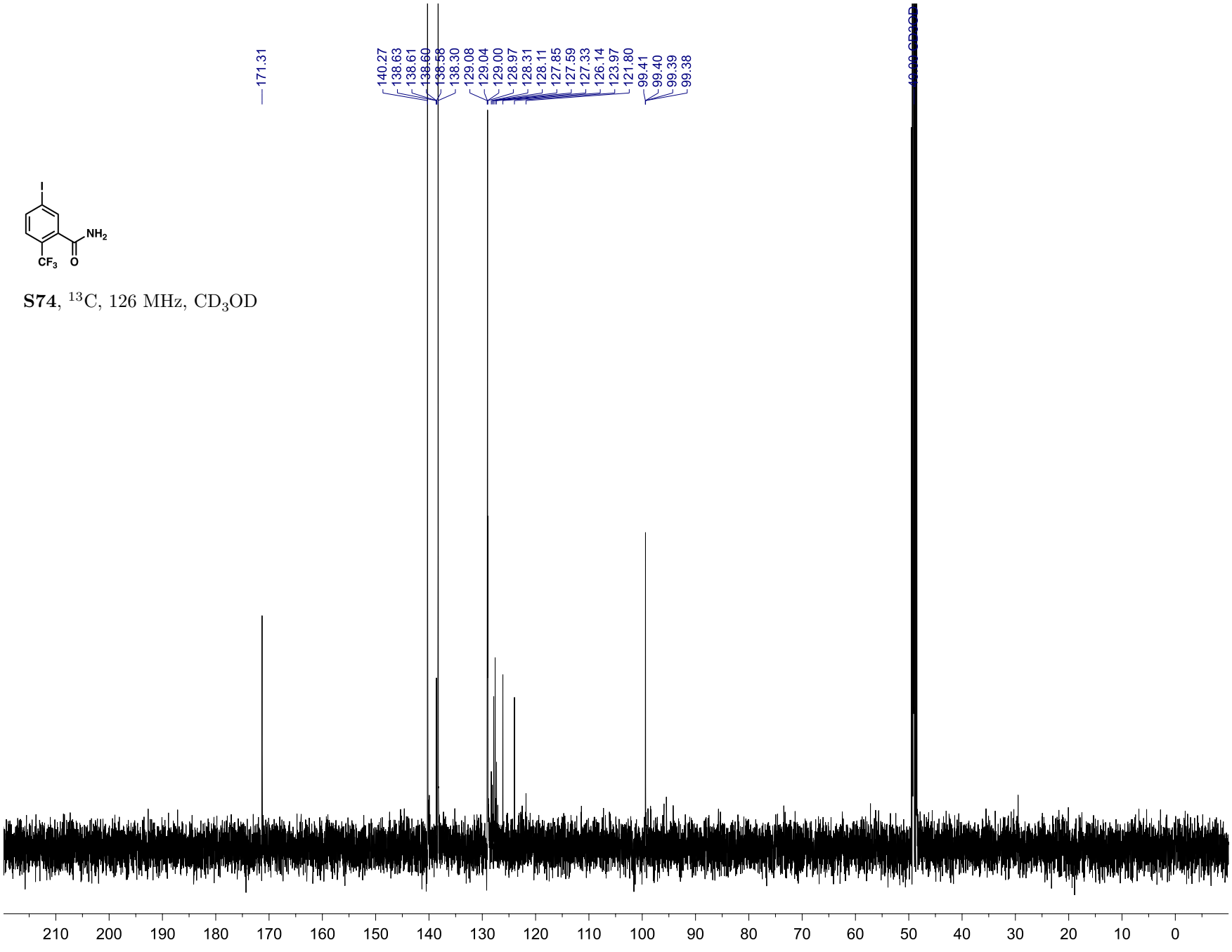
31, ^{1}H, 600 MHz, $\mathbf{CD_3CN}$/D_2O/*d*−TFA



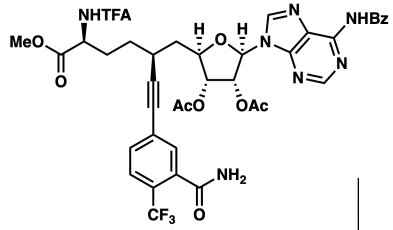
31, ^{13}C, 126 MHz, $\mathbf{CD_3CN}$/D_2O/α−TFA



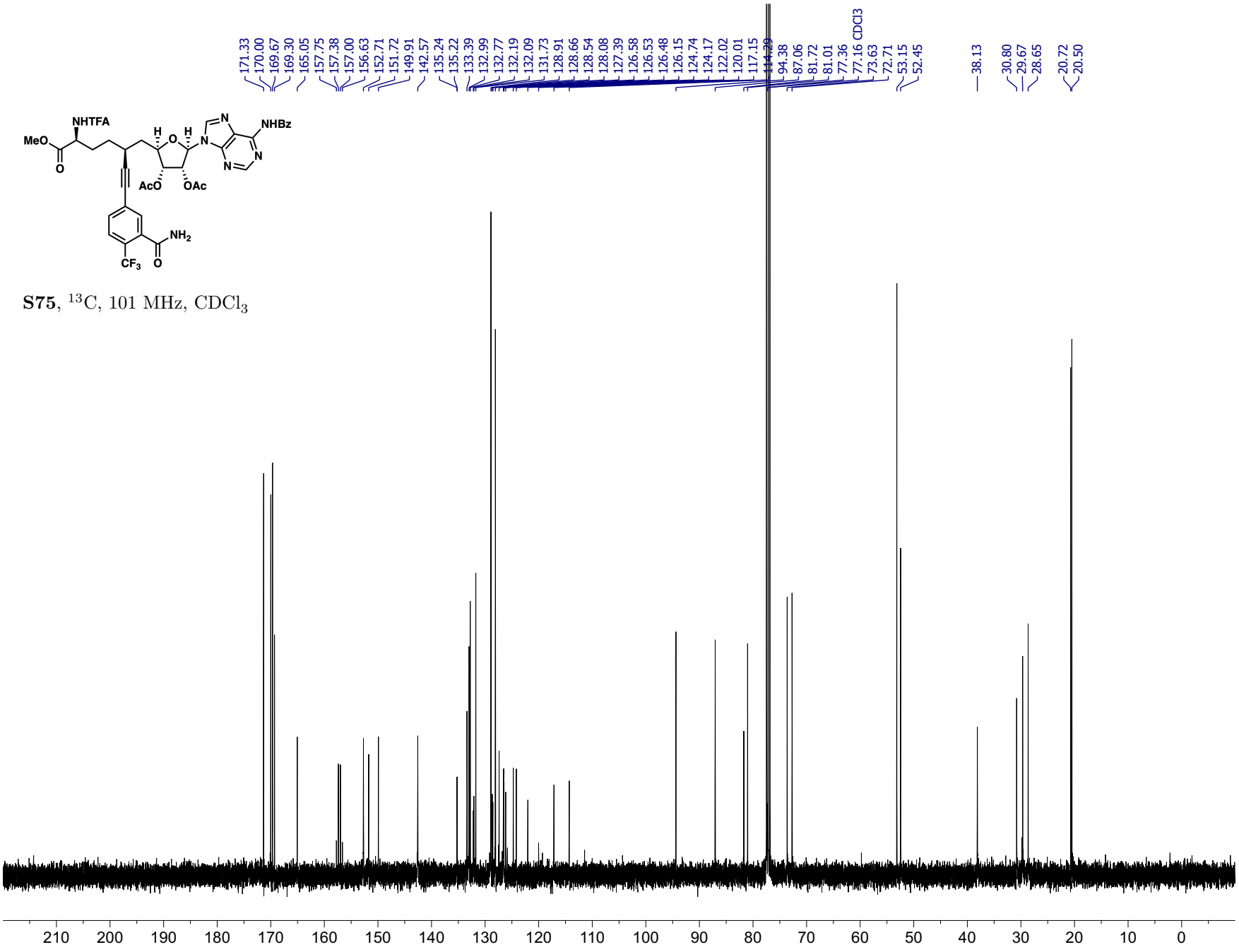
S74, ^{1}H, 500 MHz, CD_3OD



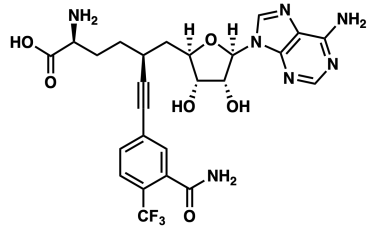
S74, ^{13}C, 126 MHz, CD_3OD



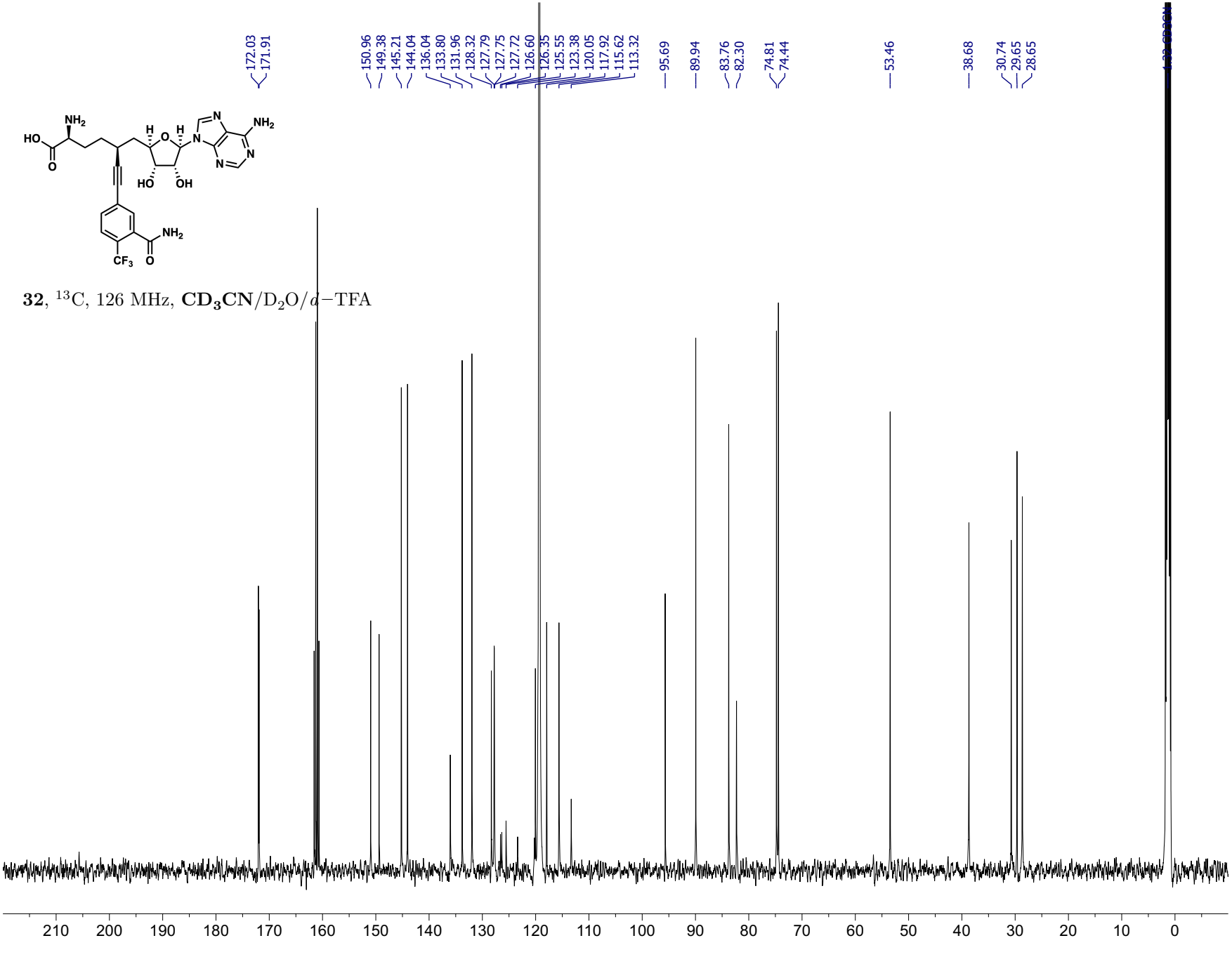
S75, ^{1}H, 500 MHz, $CDCl_3$



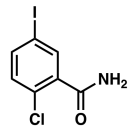
S75, ^{13}C, 101 MHz, $CDCl_3$



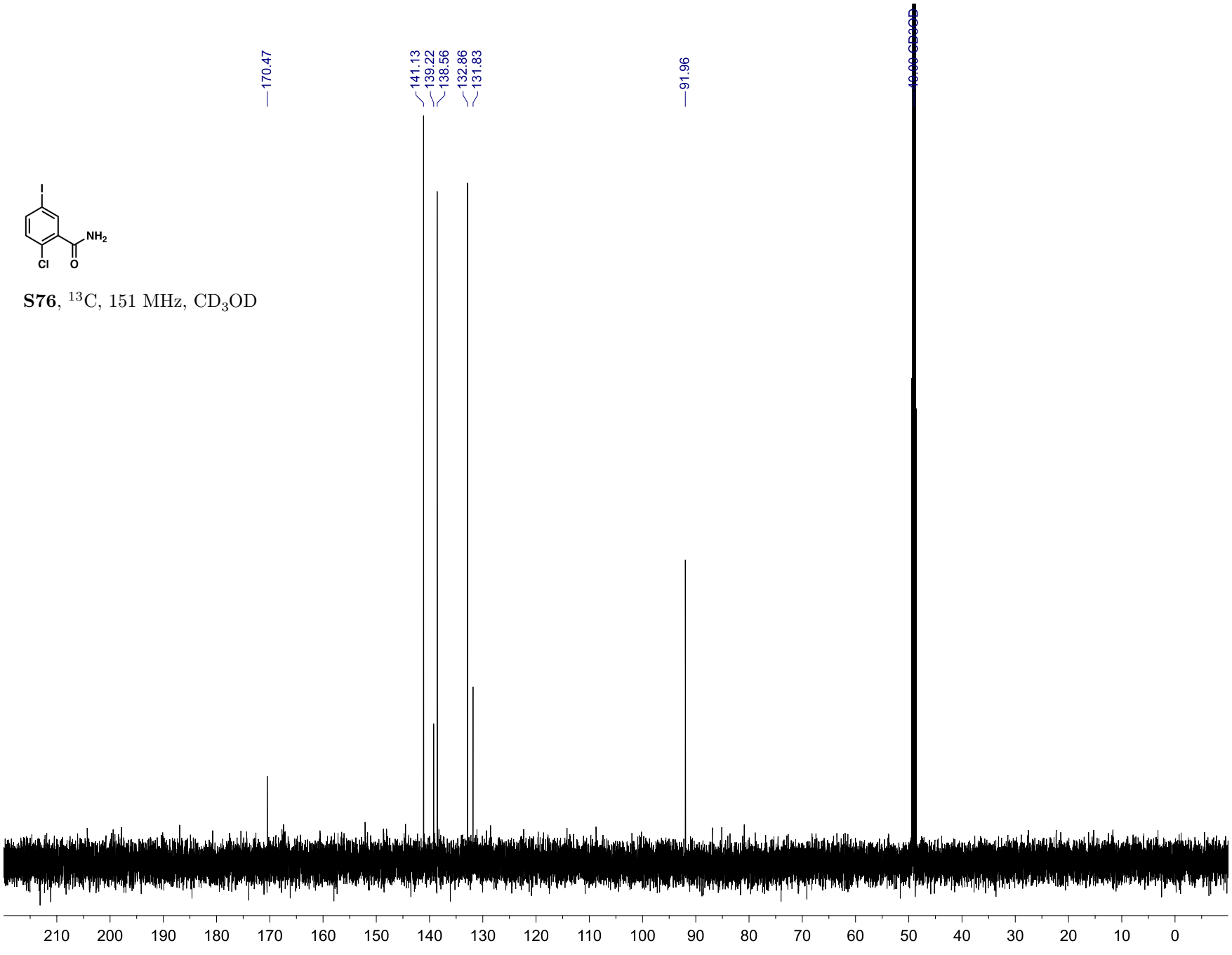
32, ^{1}H, 600 MHz, $CD_3CN/\mathbf{D_2O}/d-$TFA



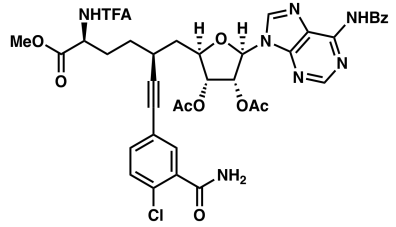
32, ^{13}C, 126 MHz, $\mathbf{CD_3CN}$/D_2O/*d*−TFA



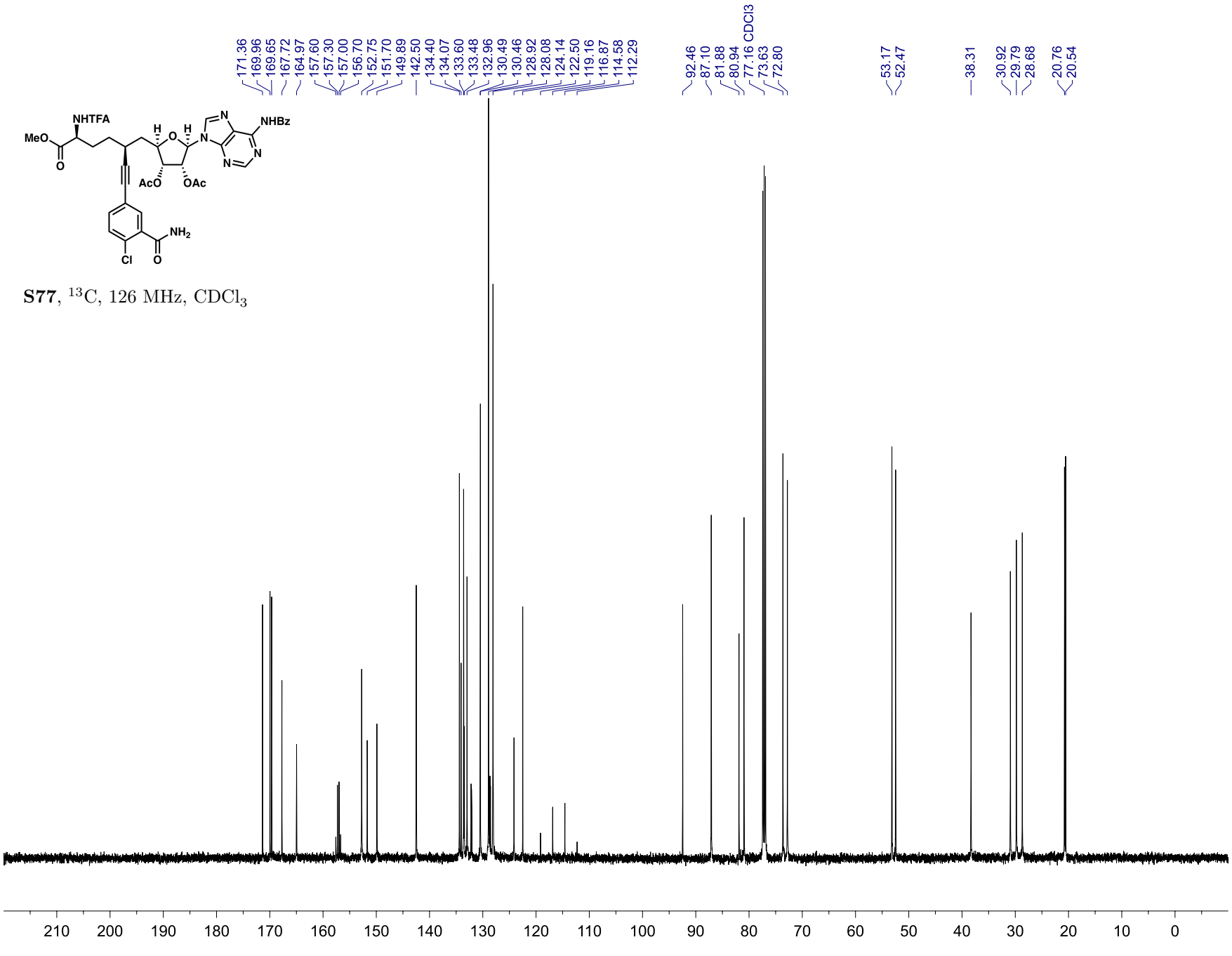
S76, ^{1}H, 500 MHz, CD_3OD



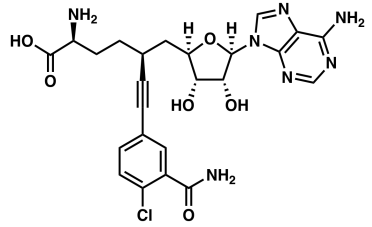
S76, ^{13}C, 151 MHz, CD_3OD



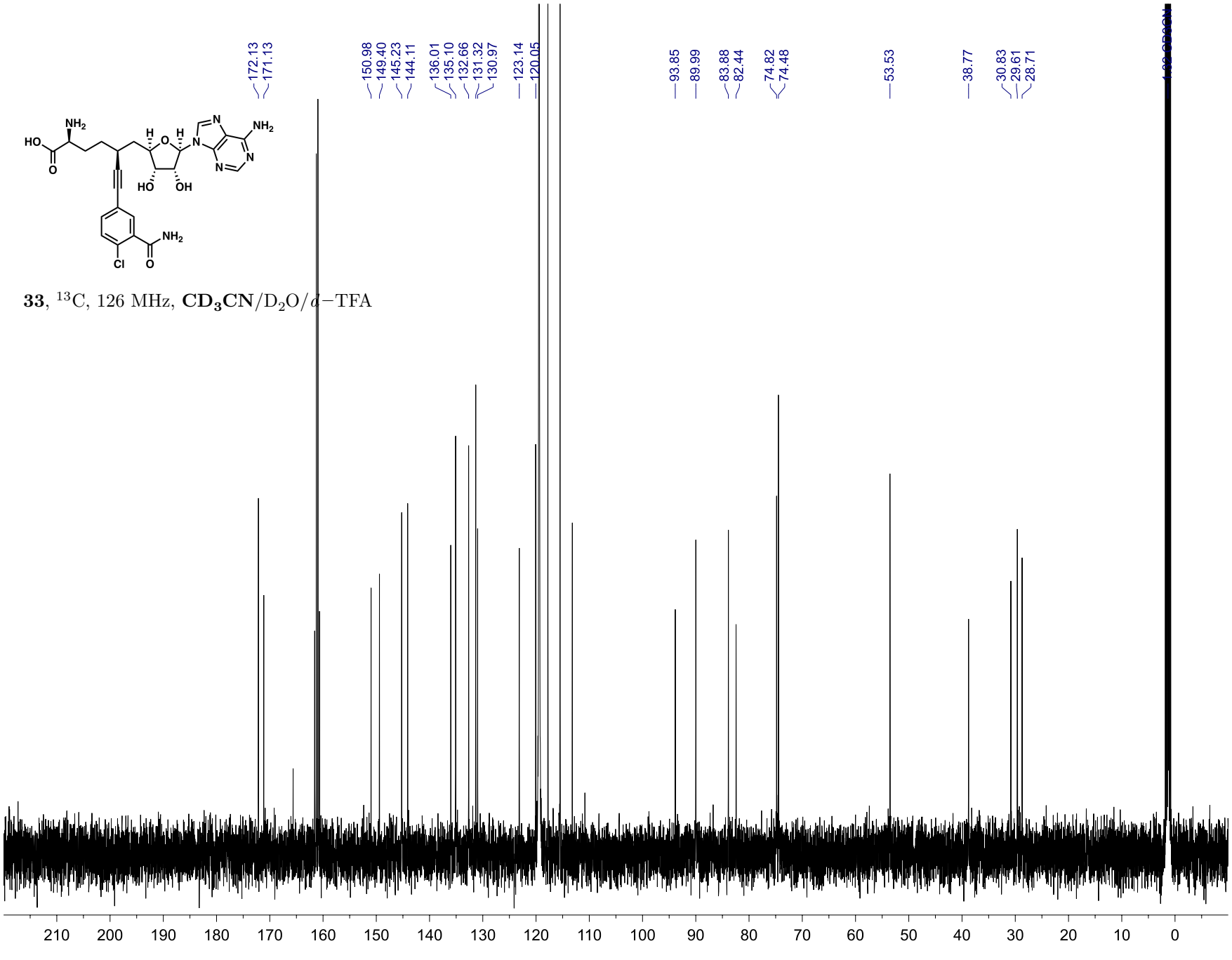
S77, ^{1}H, 600 MHz, $CDCl_3$



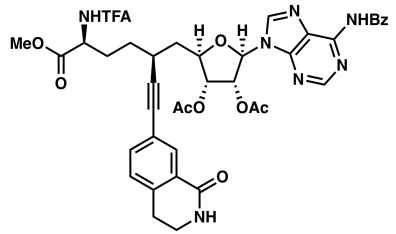
S77, ^{13}C, 126 MHz, $CDCl_3$



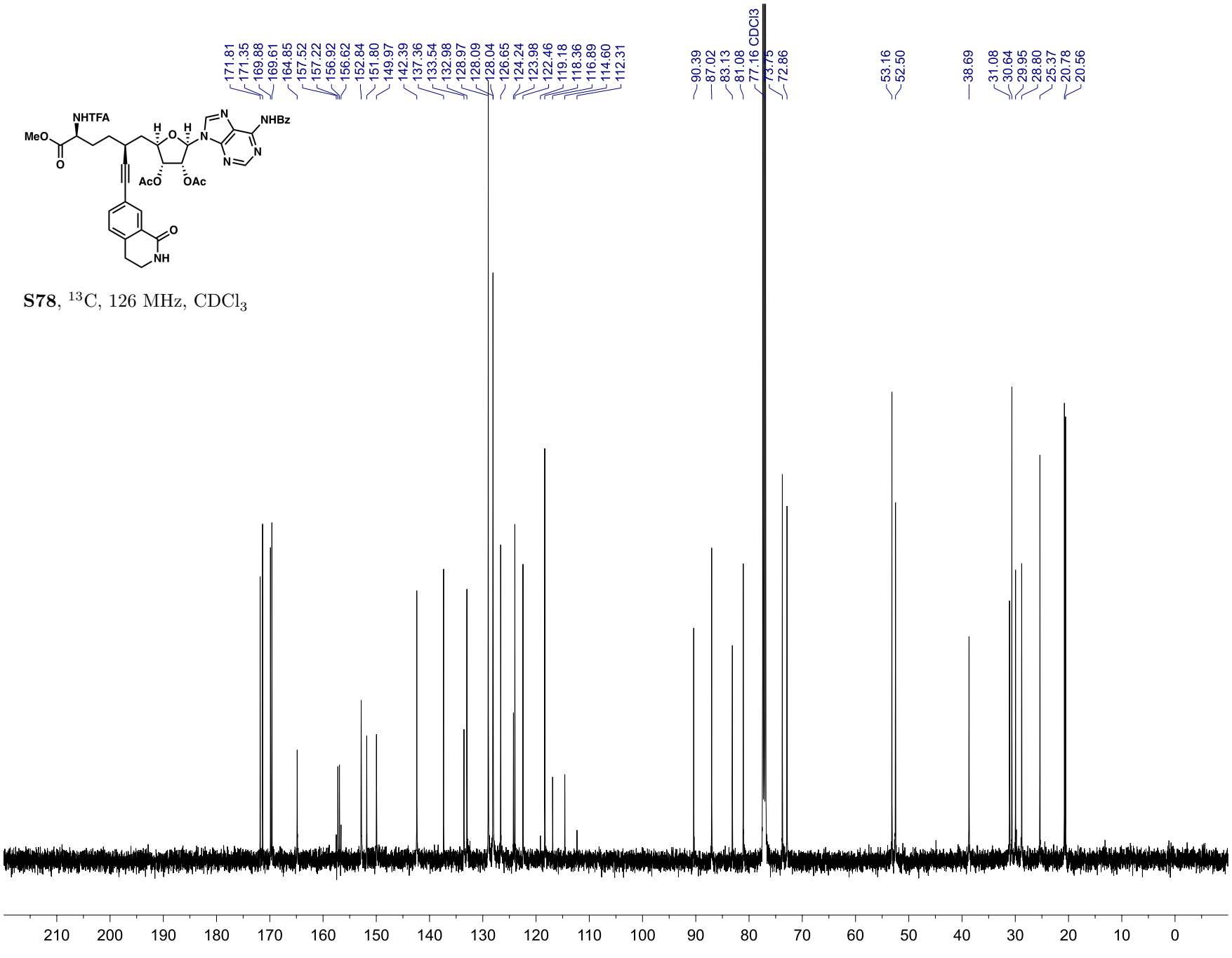
33, ^{1}H, 600 MHz, $\mathbf{CD_3CN}$/D_2O/*d*−TFA



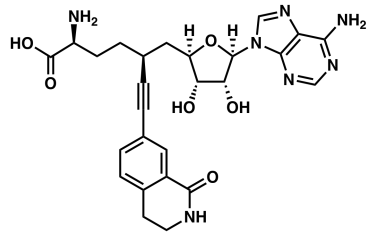
33, ^{13}C, 126 MHz, $\mathbf{CD_3CN}$/D_2O/*d*−TFA



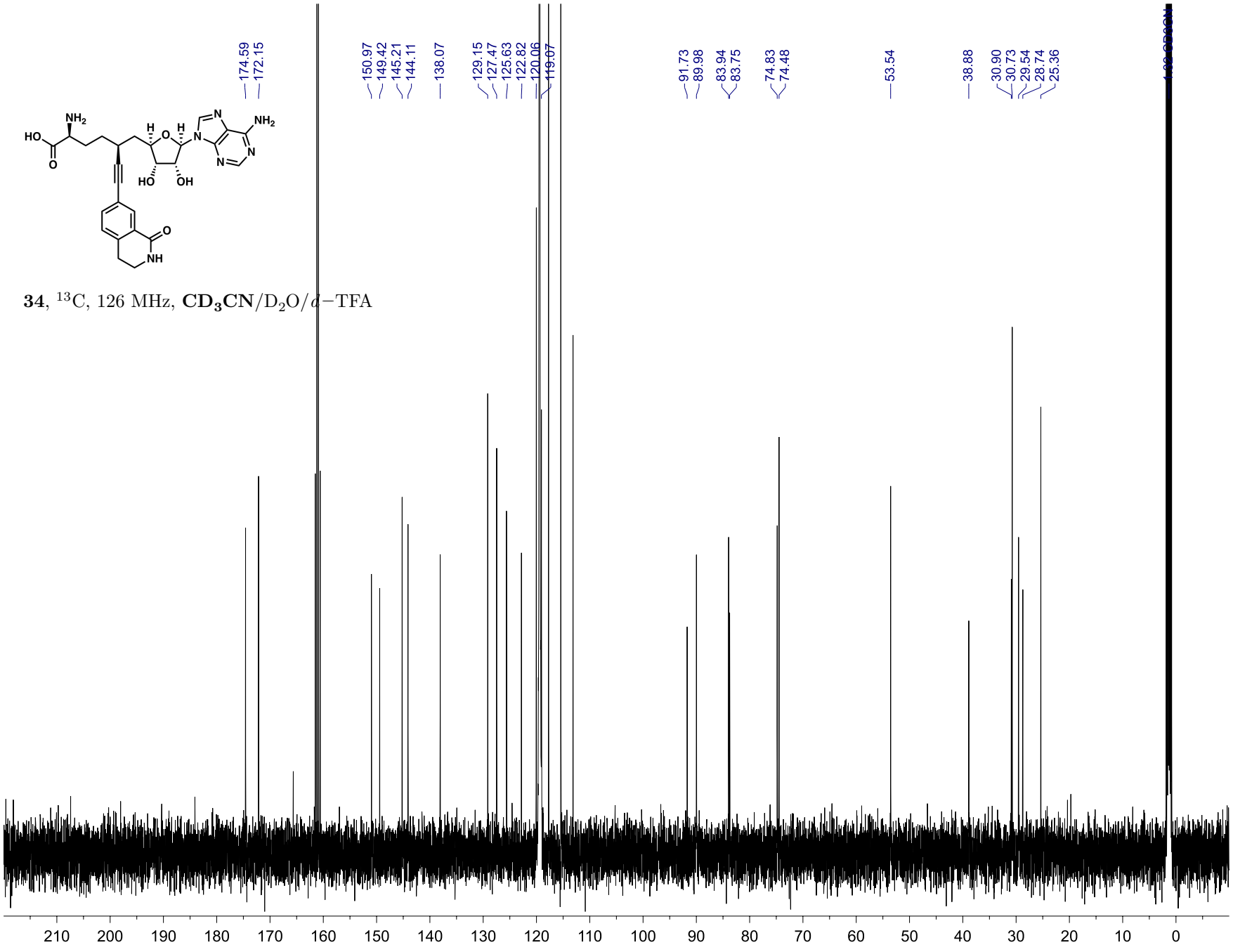
S78, ^{1}H, 600 MHz, $CDCl_3$



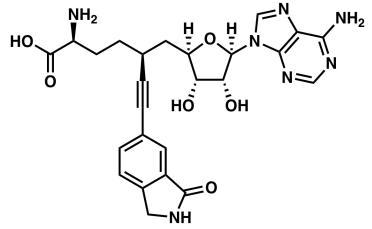
S78, ^{13}C, 126 MHz, $CDCl_3$



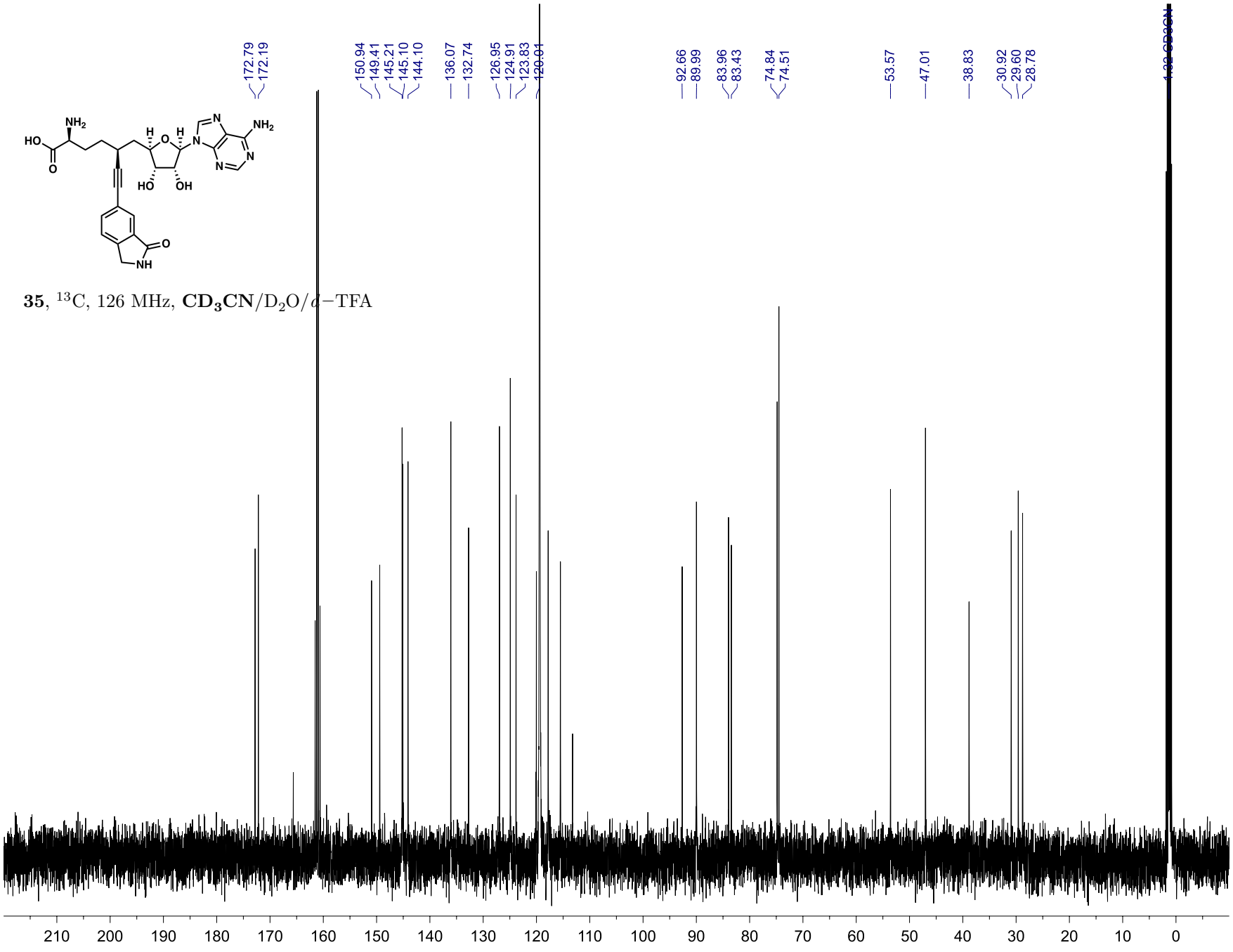
34, ^{1}H, 600 MHz, $\mathbf{CD_3CN}$/D_2O/*d*−TFA



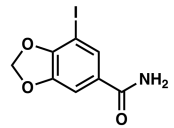
34, ^{13}C, 126 MHz, $\mathbf{CD_3CN}$/D_2O/*d*−TFA



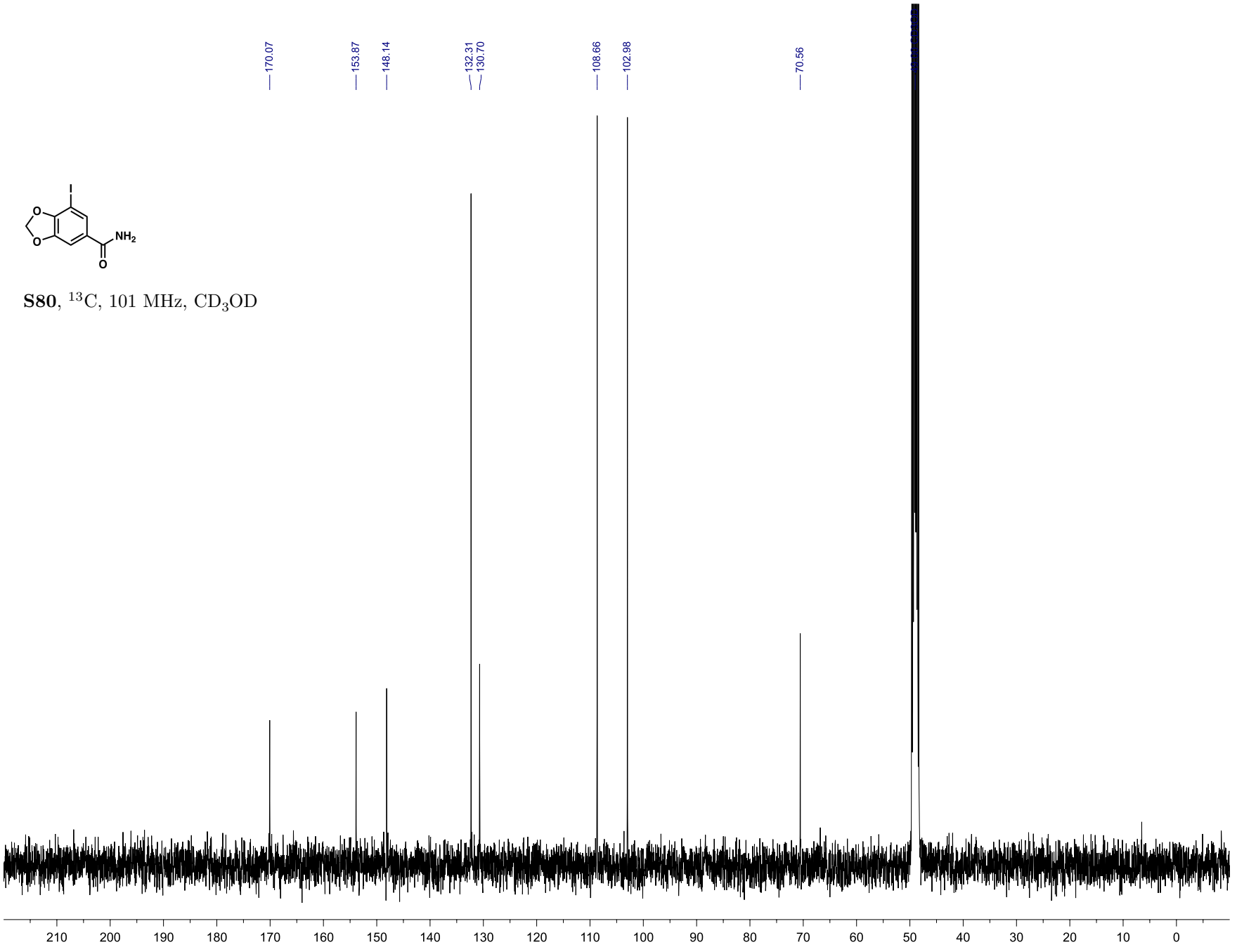
35, ^{1}H, 600 MHz, $\mathbf{CD_3CN}$/D_2O/*d*−TFA



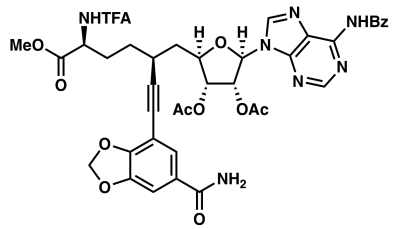
35, ^{13}C, 126 MHz, $\mathbf{CD_3CN}$/D_2O/*d*−TFA



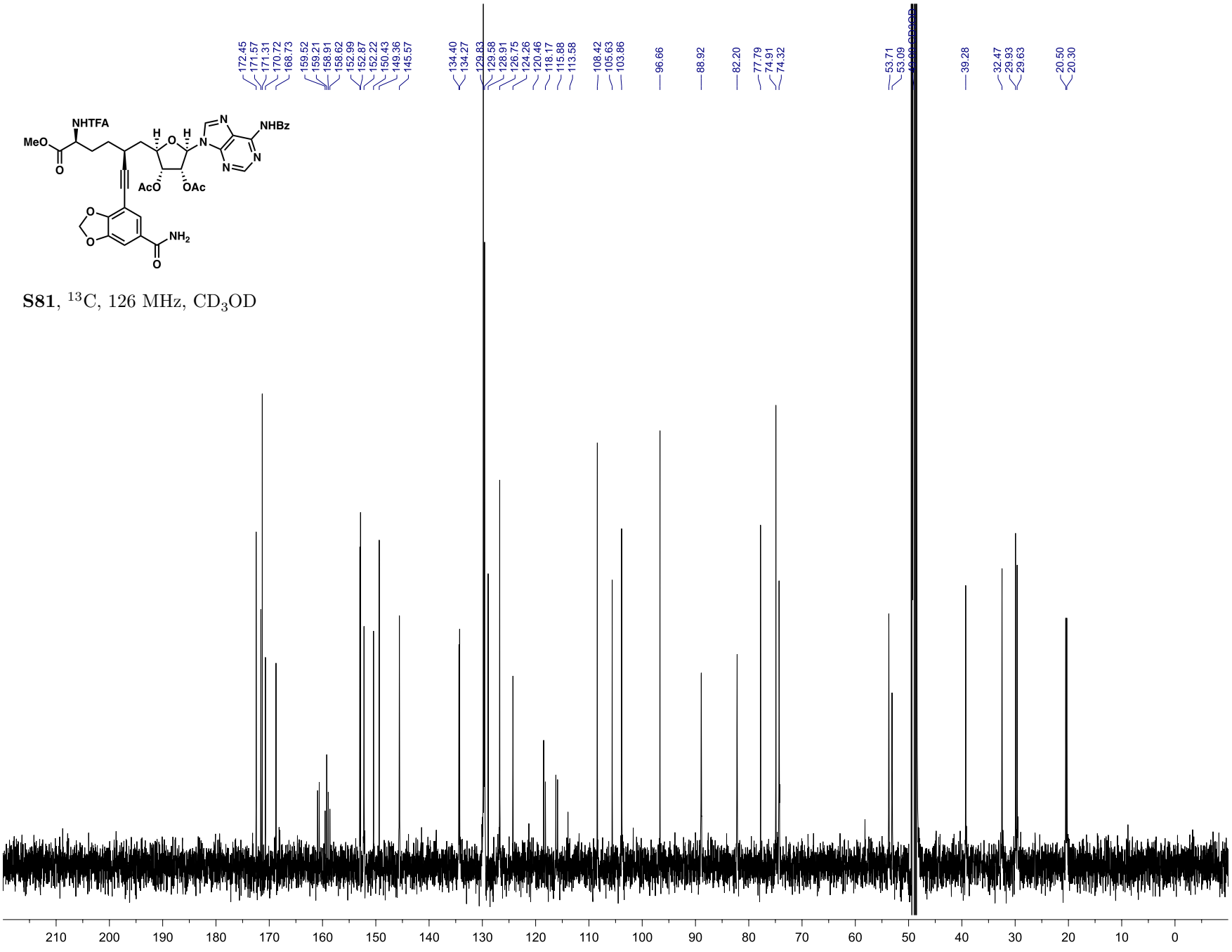
S80, ^{1}H, 500 MHz, CD_3OD



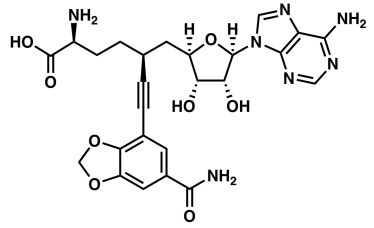
S80, ^{13}C, 101 MHz, CD_3OD



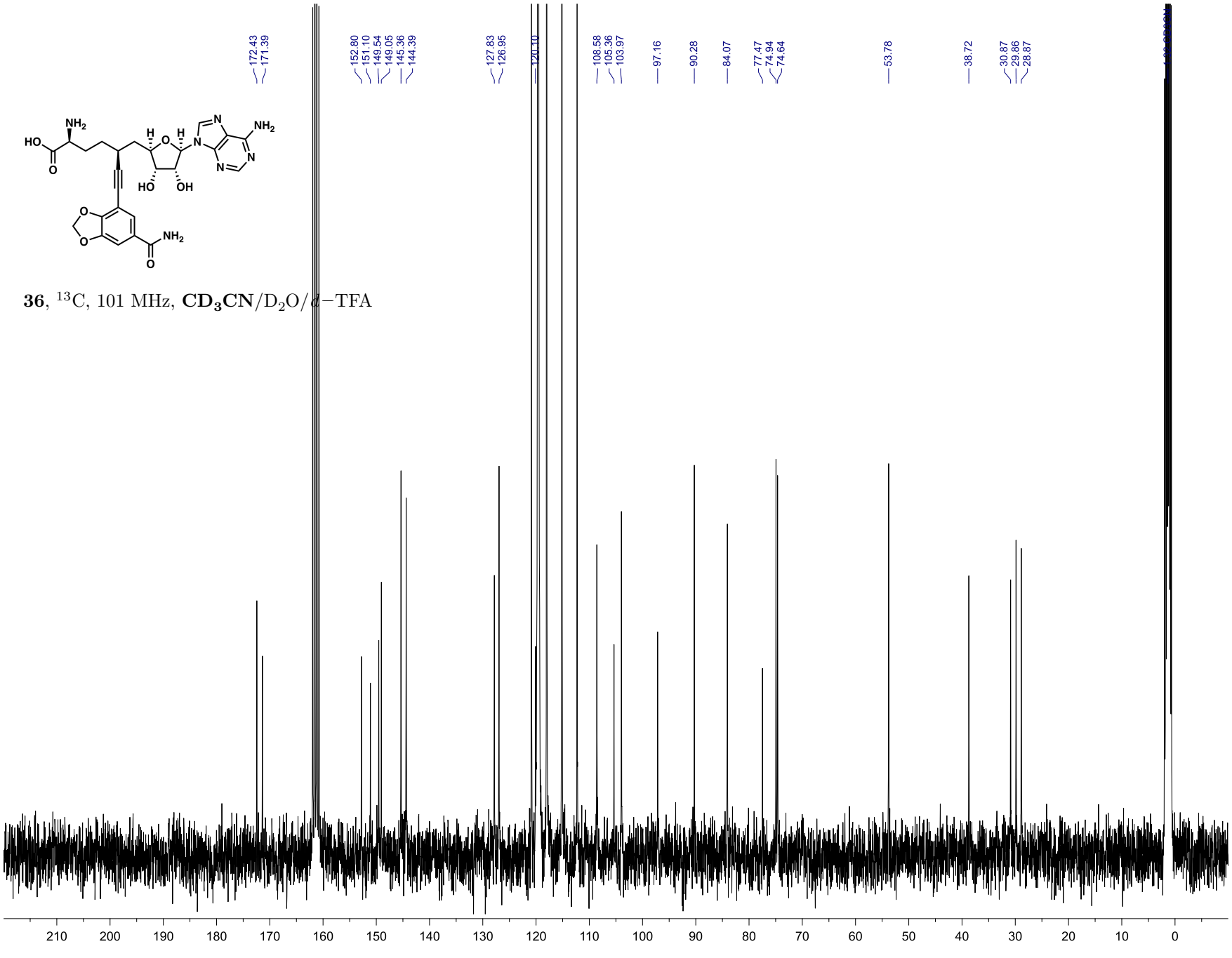
S81, ^{1}H, 500 MHz, CD_3OD



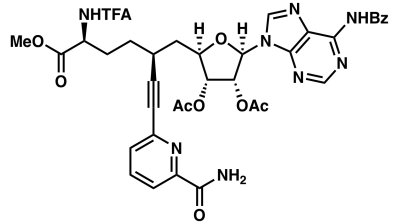
S81, ^{13}C, 126 MHz, CD_3OD



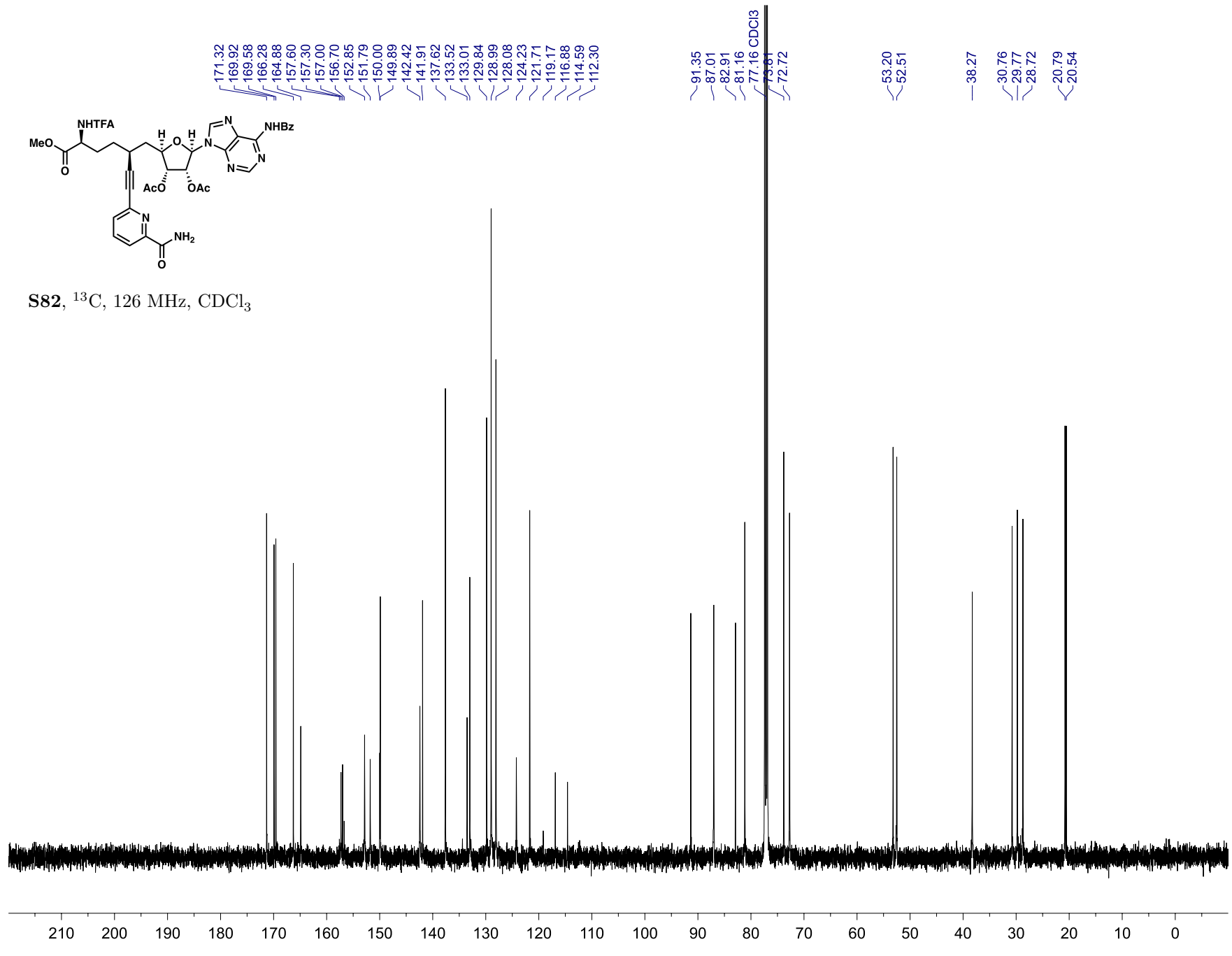
36, ^{1}H, 600 MHz, $\mathbf{CD_3CN}$/D_2O



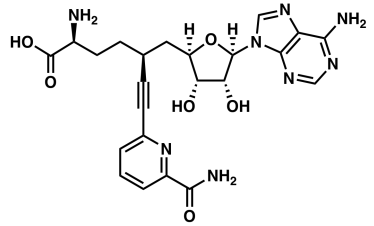
36, ^{13}C, 101 MHz, $\mathbf{CD_3CN}$/D_2O/α−TFA



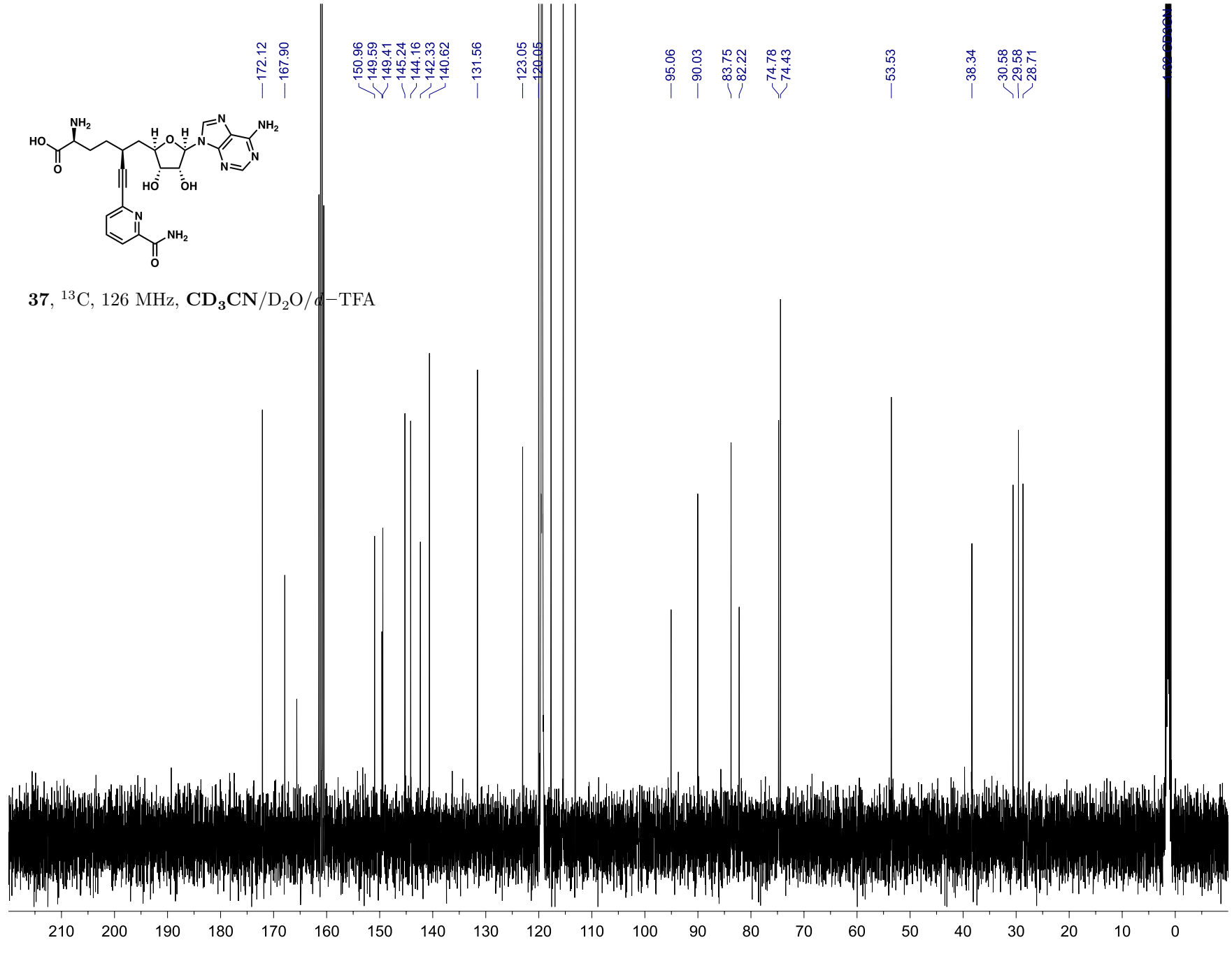
S82, ^{1}H, 600 MHz, $CDCl_3$



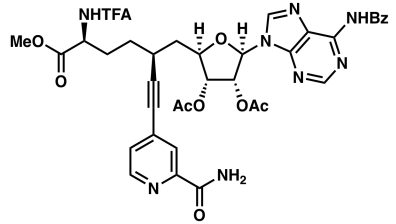
S82, ^{13}C, 126 MHz, $CDCl_3$



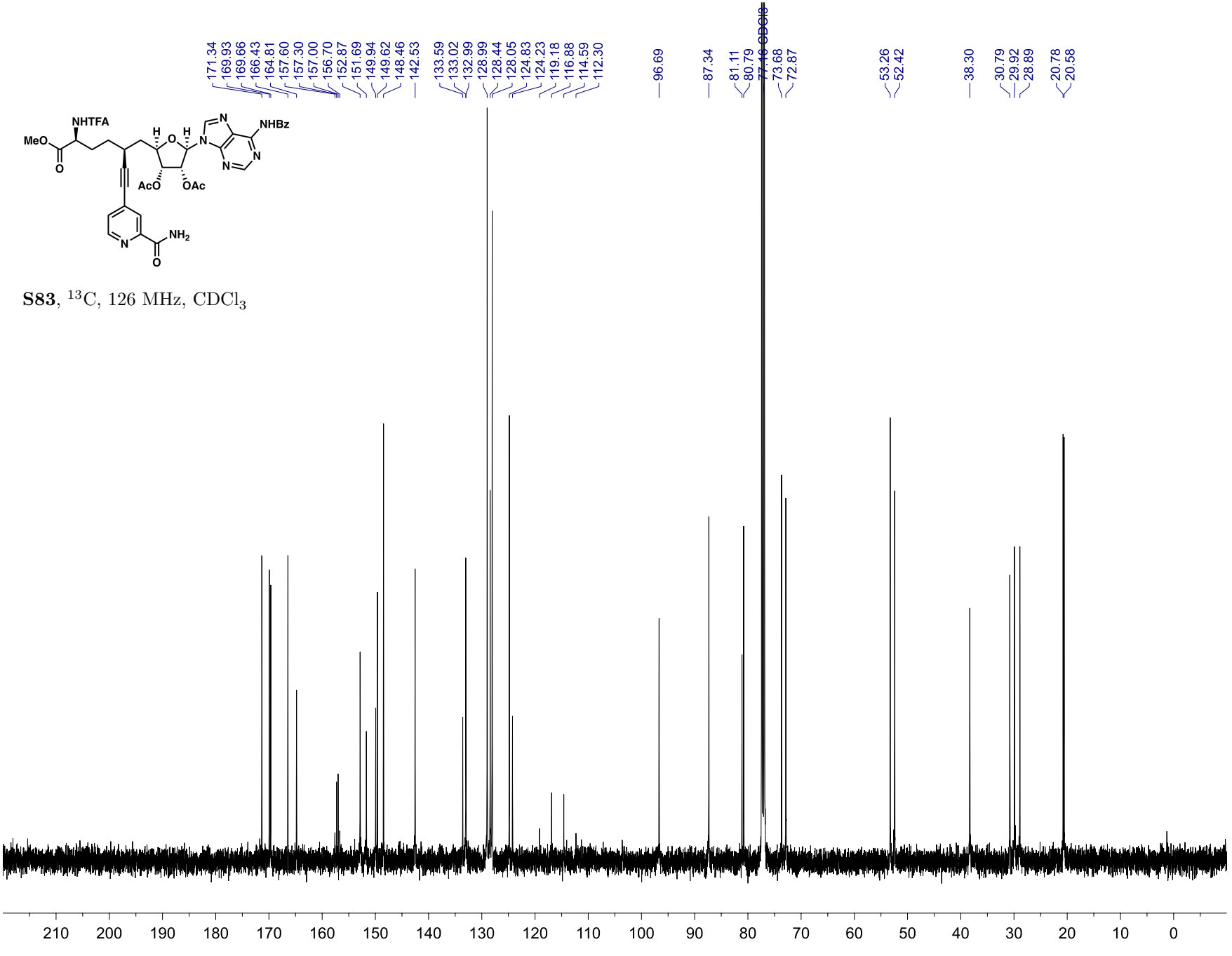
37, ^{1}H, 600 MHz, $\mathbf{CD_3CN}$/D_2O/*d*−TFA



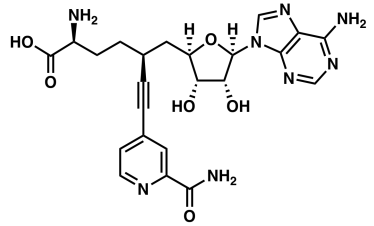
37, ^{13}C, 126 MHz, $\mathbf{CD_3CN}$/D_2O/$\mathbf{\mathit{c}}$−TFA



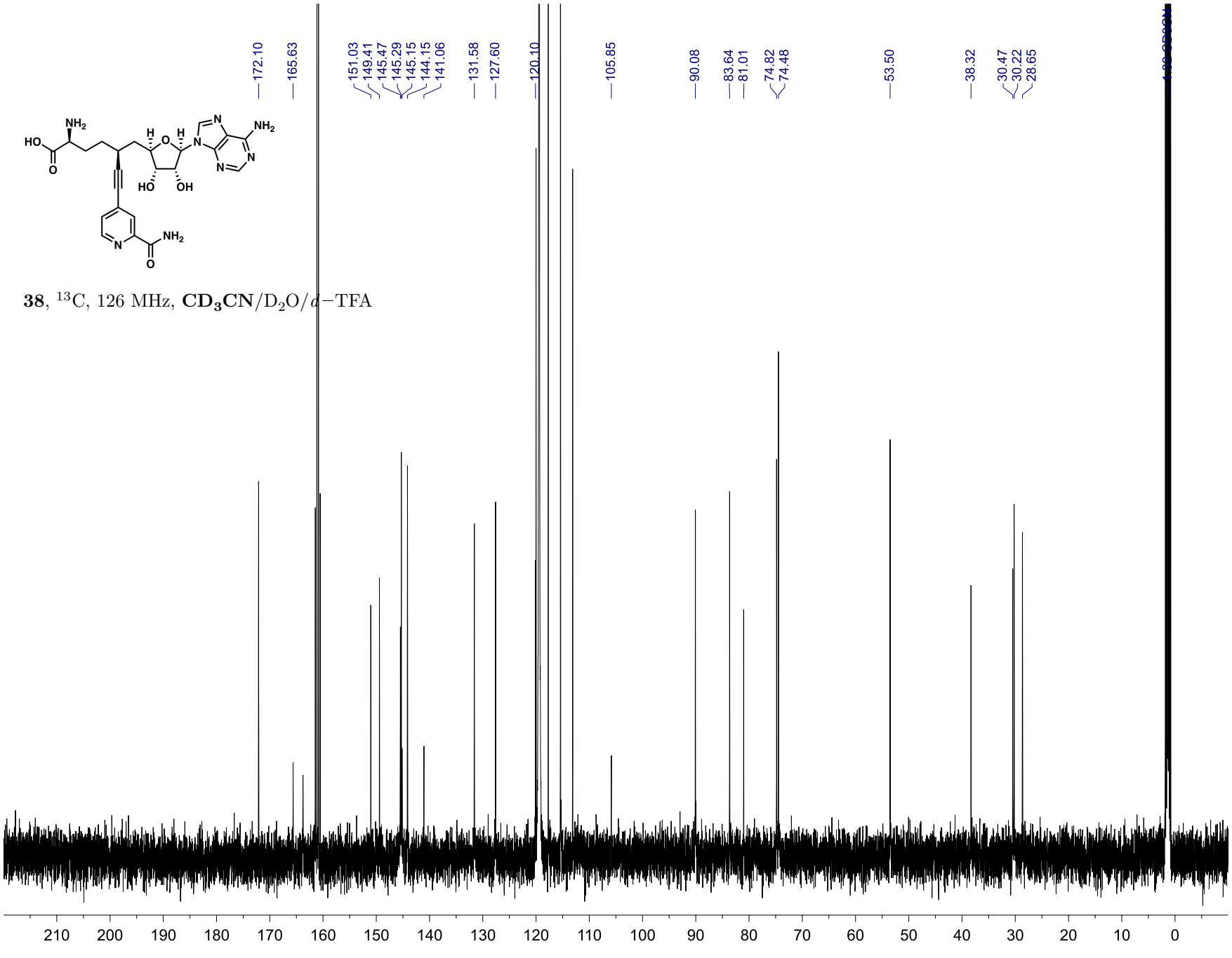
S83, ^{1}H, 600 MHz, $CDCl_3$



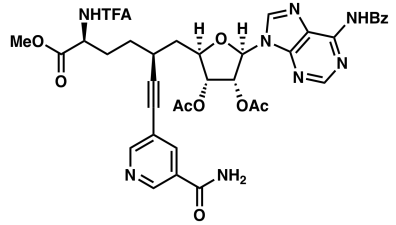
S83, ^{13}C, 126 MHz, $CDCl_3$



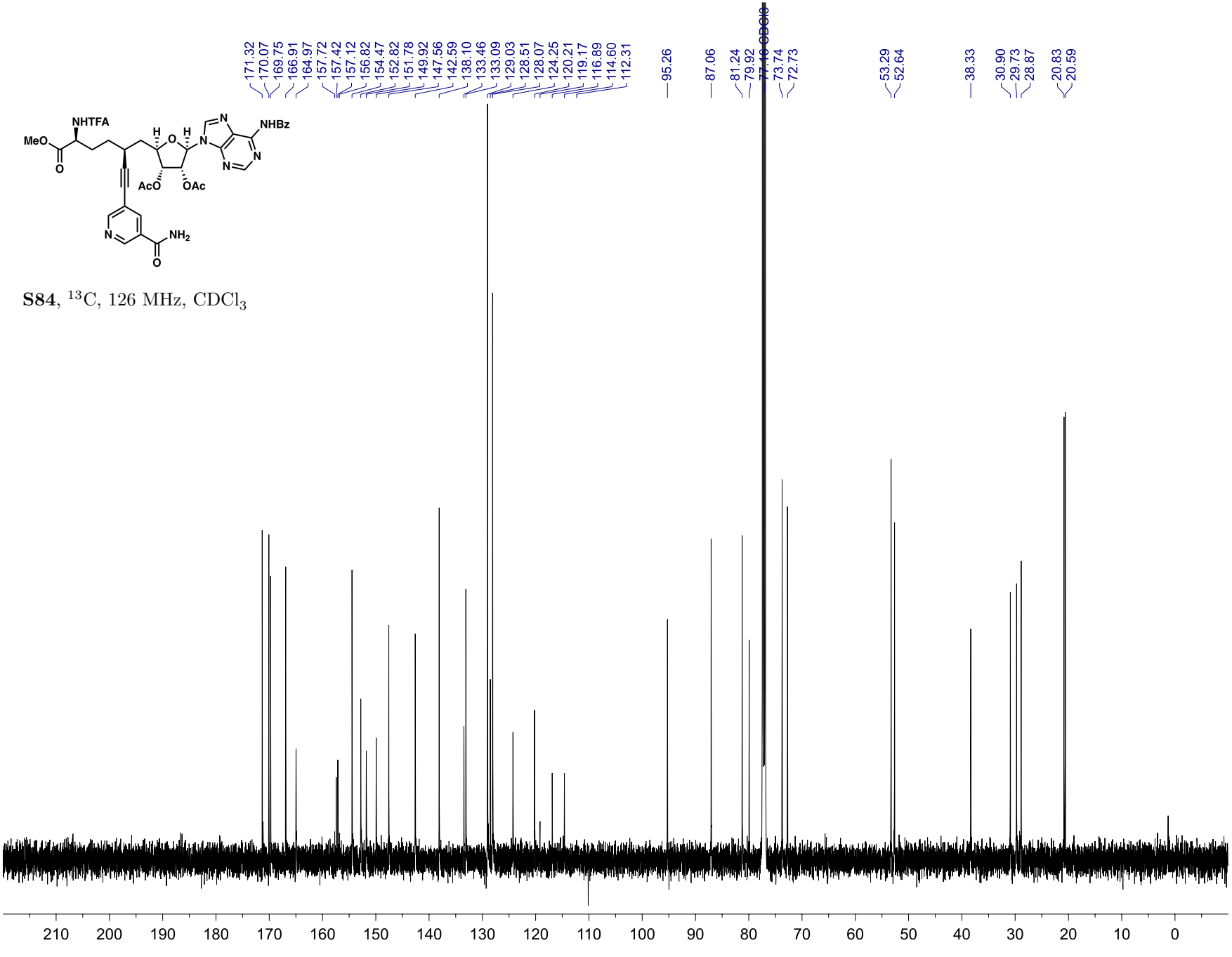
38, ^{1}H, 600 MHz, $\mathbf{CD_3CN}$/D_2O/*d*−TFA



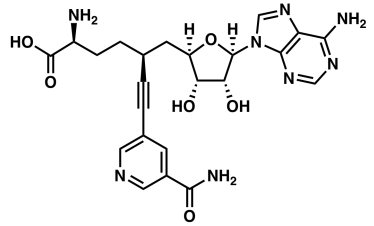
38, ^{13}C, 126 MHz, $\mathbf{CD_3CN}$/D_2O/*d*−TFA



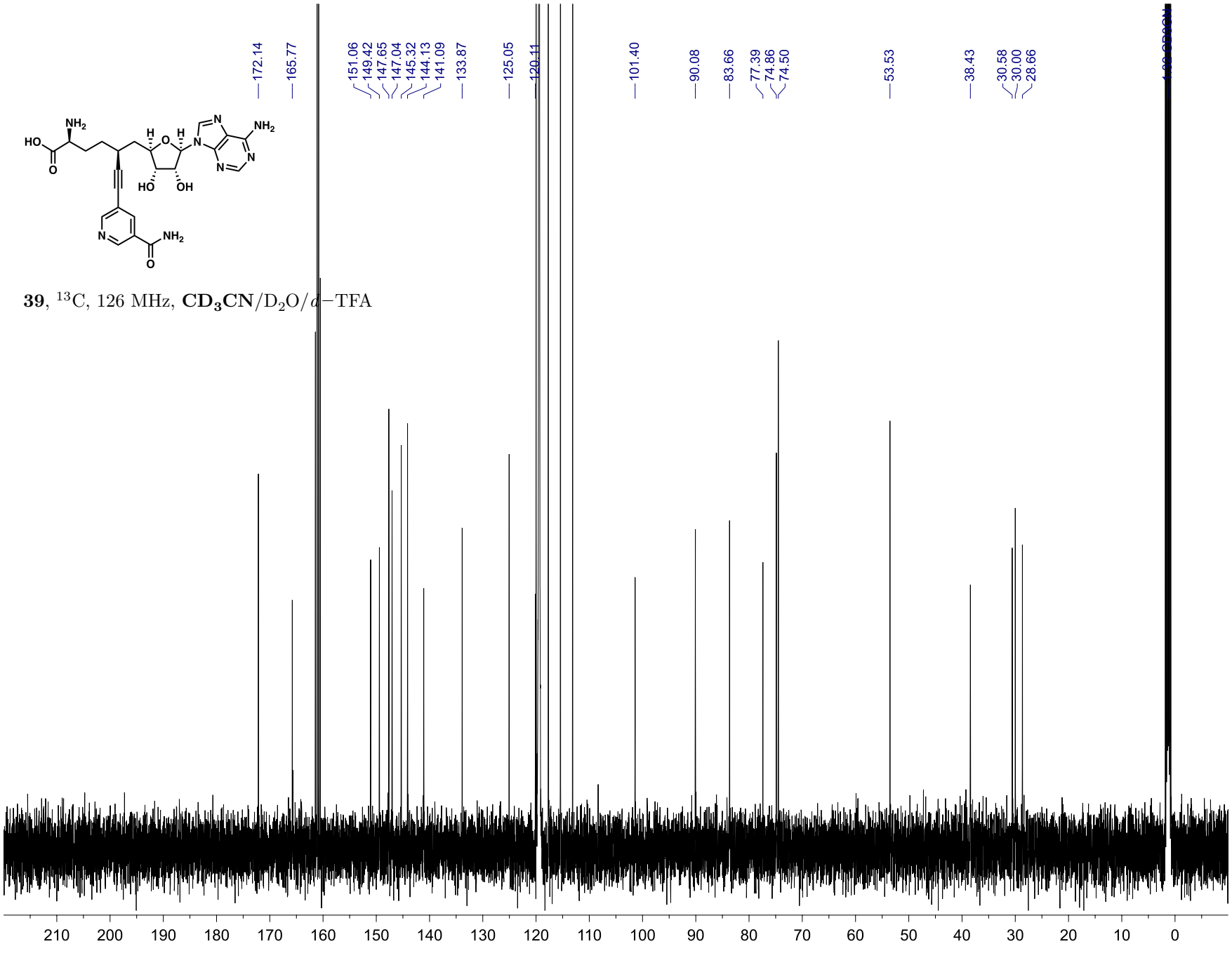
S84, ^{1}H, 600 MHz, $CDCl_3$



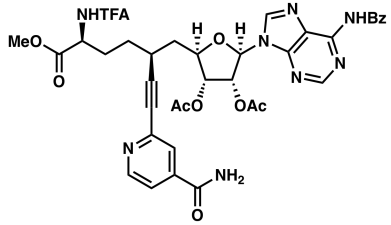
S84, ^{13}C, 126 MHz, $CDCl_3$



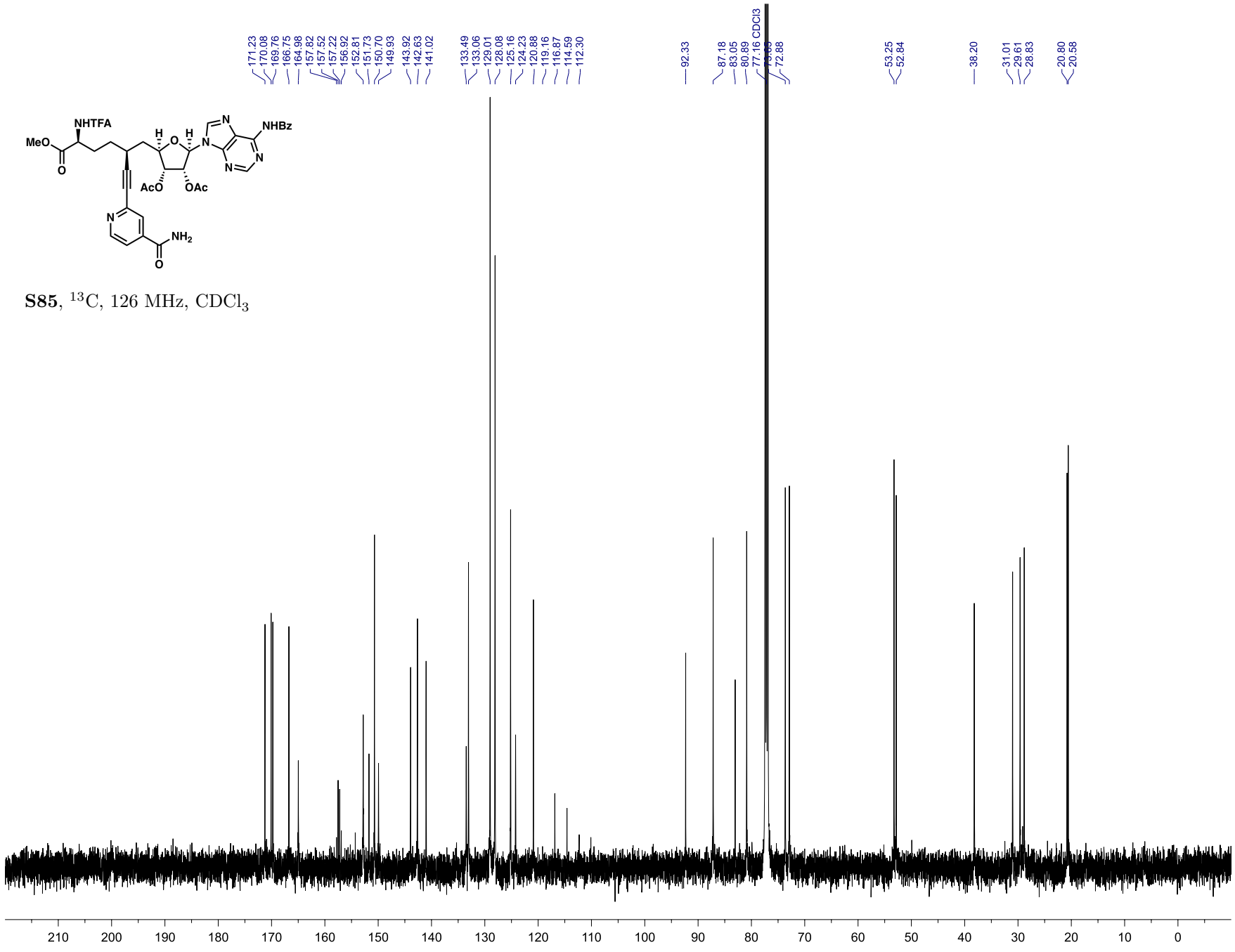
39, ^{1}H, 500 MHz, $\mathbf{CD_3CN}$/D_2O/*d*−TFA



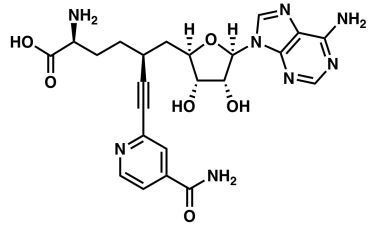
39, ^{13}C, 126 MHz, $\mathbf{CD_3CN}$/D_2O/*d*−TFA



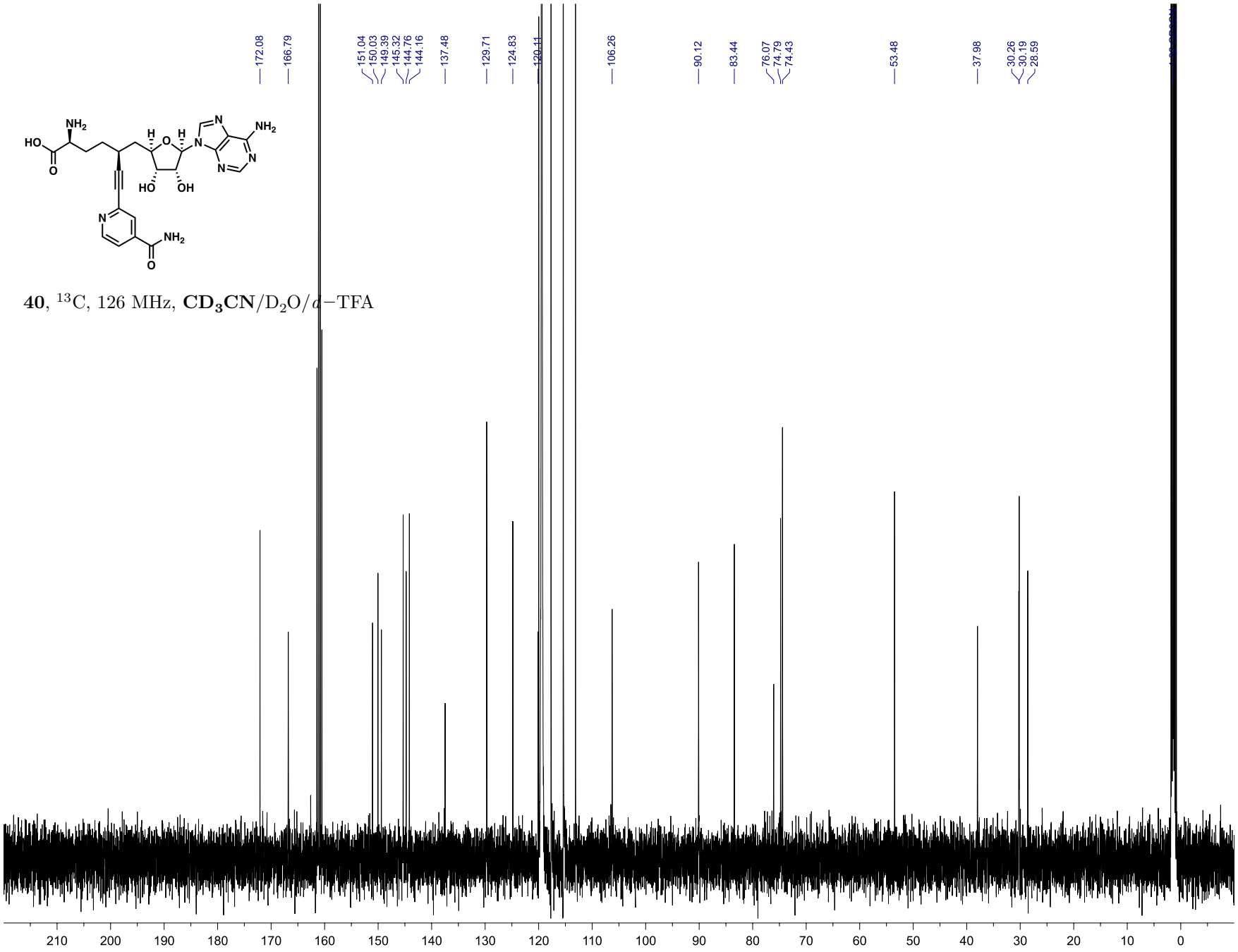
S85, ^{1}H, 600 MHz, $CDCl_3$



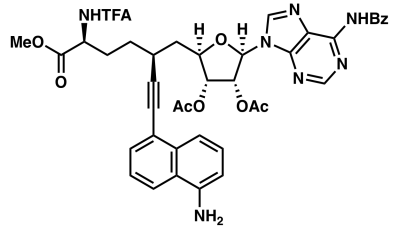
S85, ^{13}C, 126 MHz, $CDCl_3$



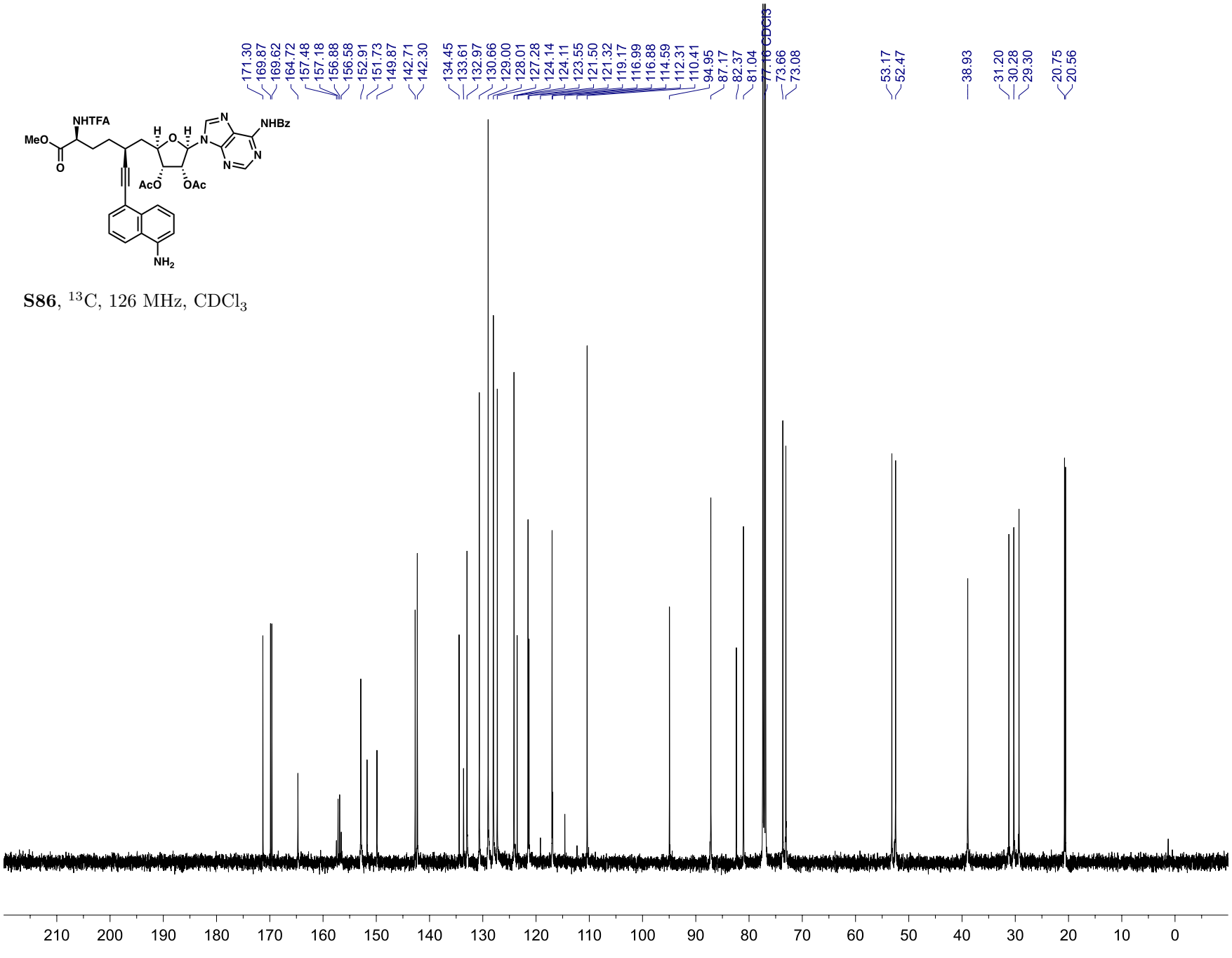
40, ^{1}H, 500 MHz, $\mathbf{CD_3CN}$/D_2O/*d*−TFA



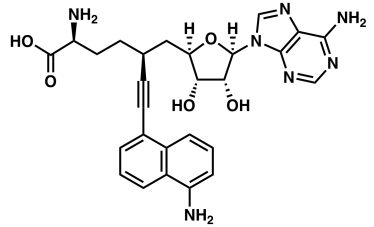
40, ^{13}C, 126 MHz, $\mathbf{CD_3CN}$/D_2O/*d*−TFA



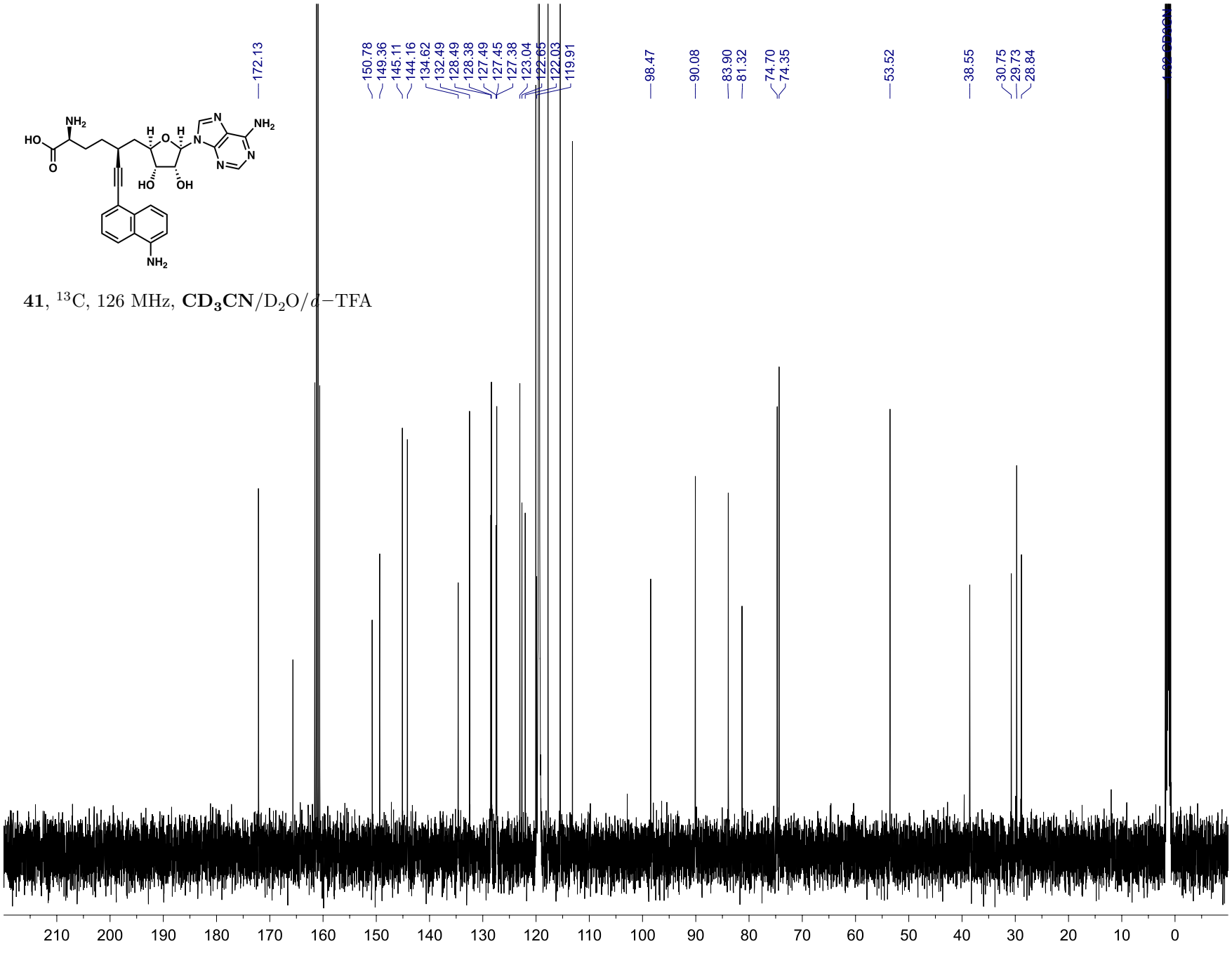
S86, ^{1}H, 600 MHz, $CDCl_3$



S86, ^{13}C, 126 MHz, $CDCl_3$



41, ^{1}H, 600 MHz, $\mathbf{CD_3CN}$/D_2O/*d*−TFA



41, ^{13}C, 126 MHz, $\mathbf{CD_3CN}$/D_2O/*d*−TFA