

Appendix III:

^{13}C NMR

Spectra

Of

Ligands

And

Complexes

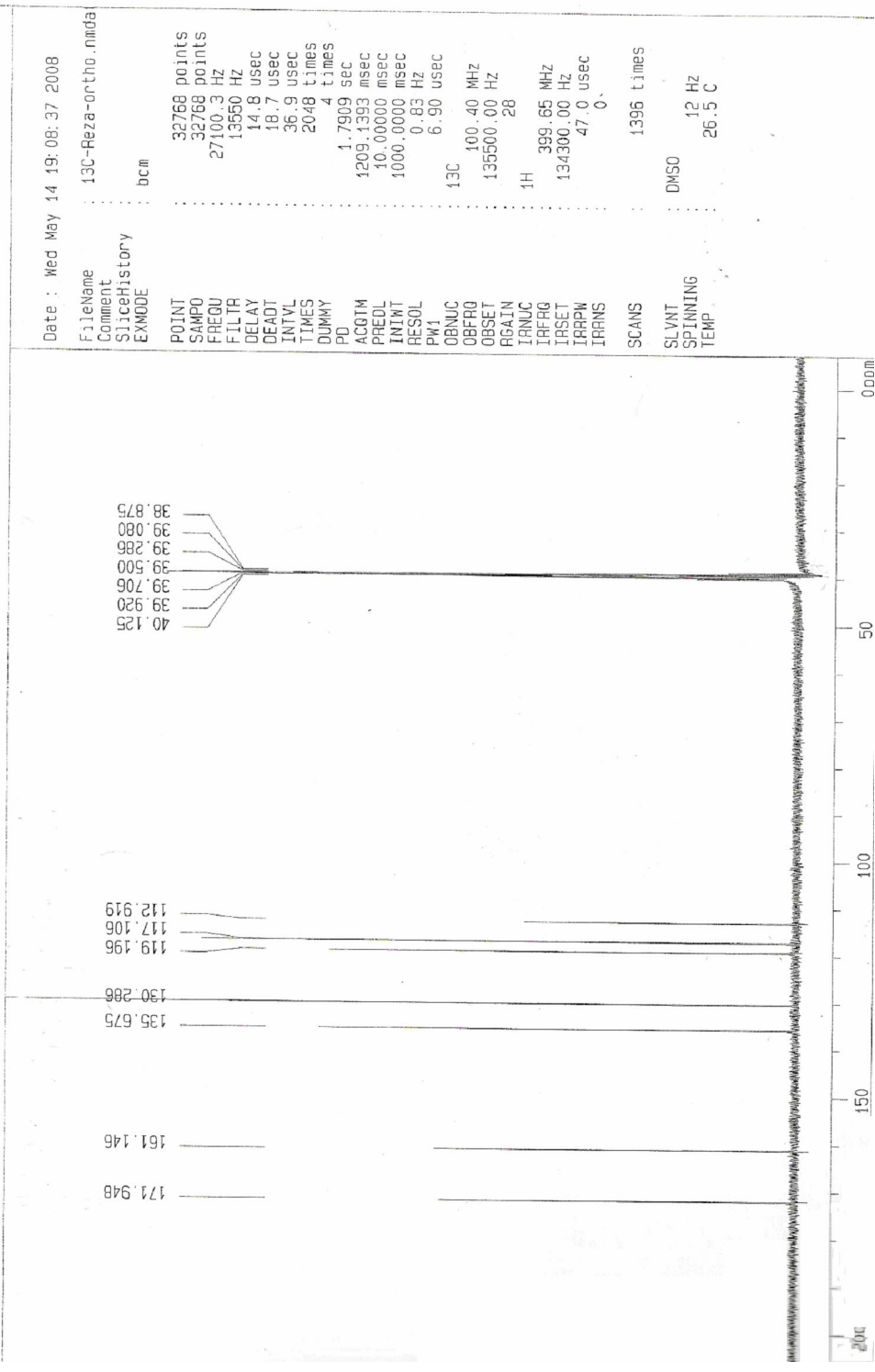


Figure 28. ¹³C NMR spectrum of o-hydroxybenzoic acid

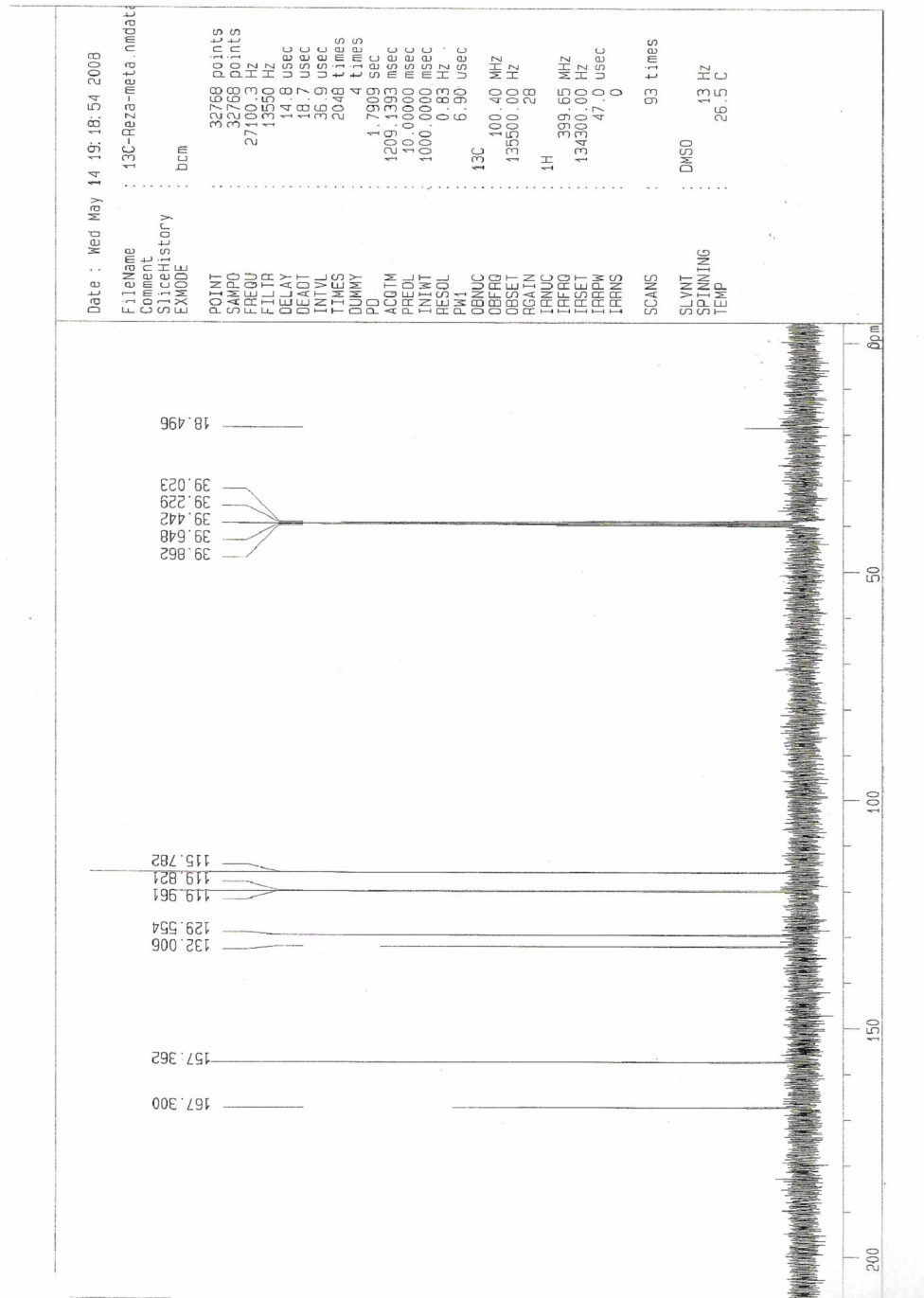


Figure 2 9. ¹³C NMR spectrum of m-hydroxybenzoic acid

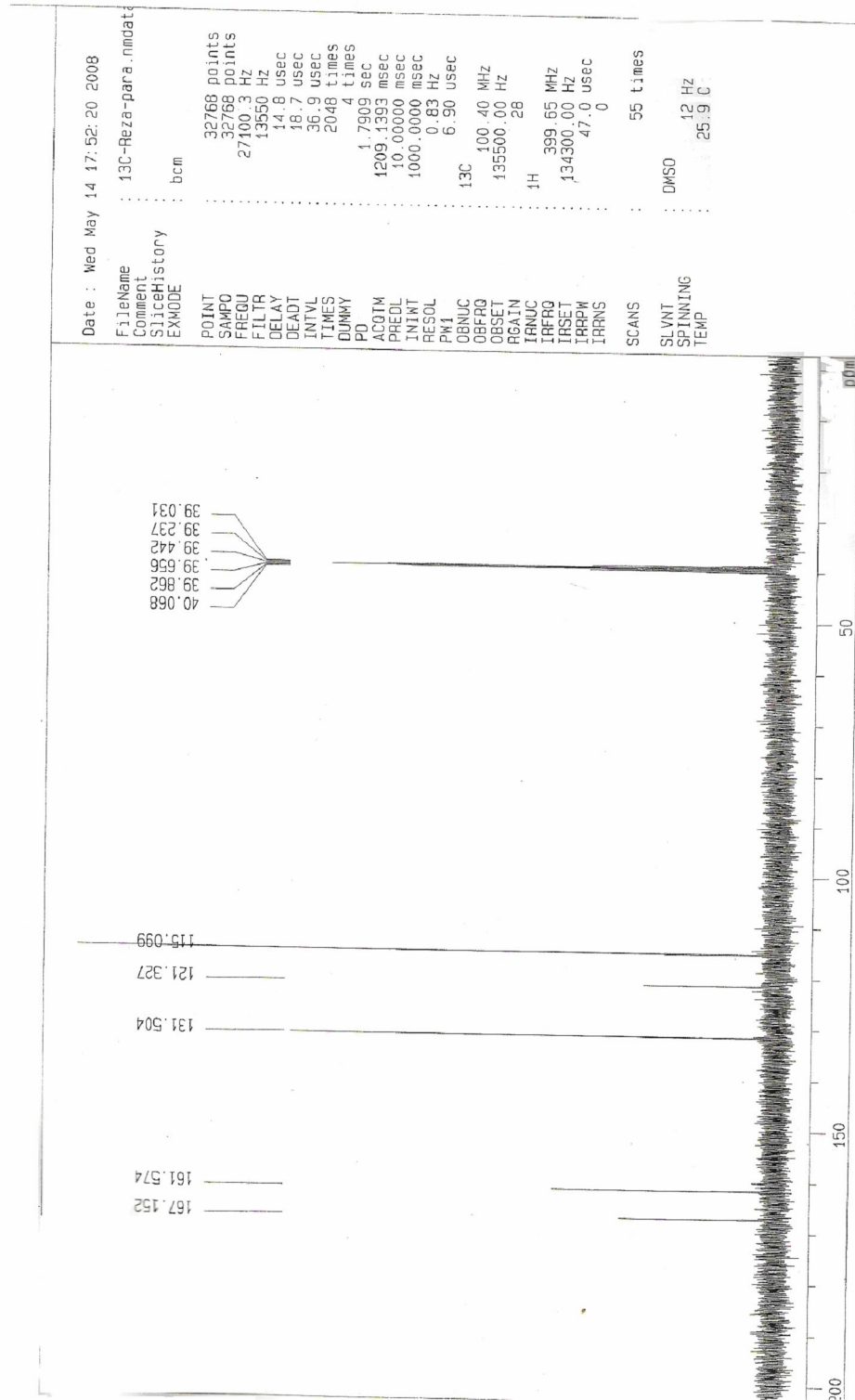


Figure 30. ¹³C NMR spectrum of p-hydroxybenzoic acid

1H Line

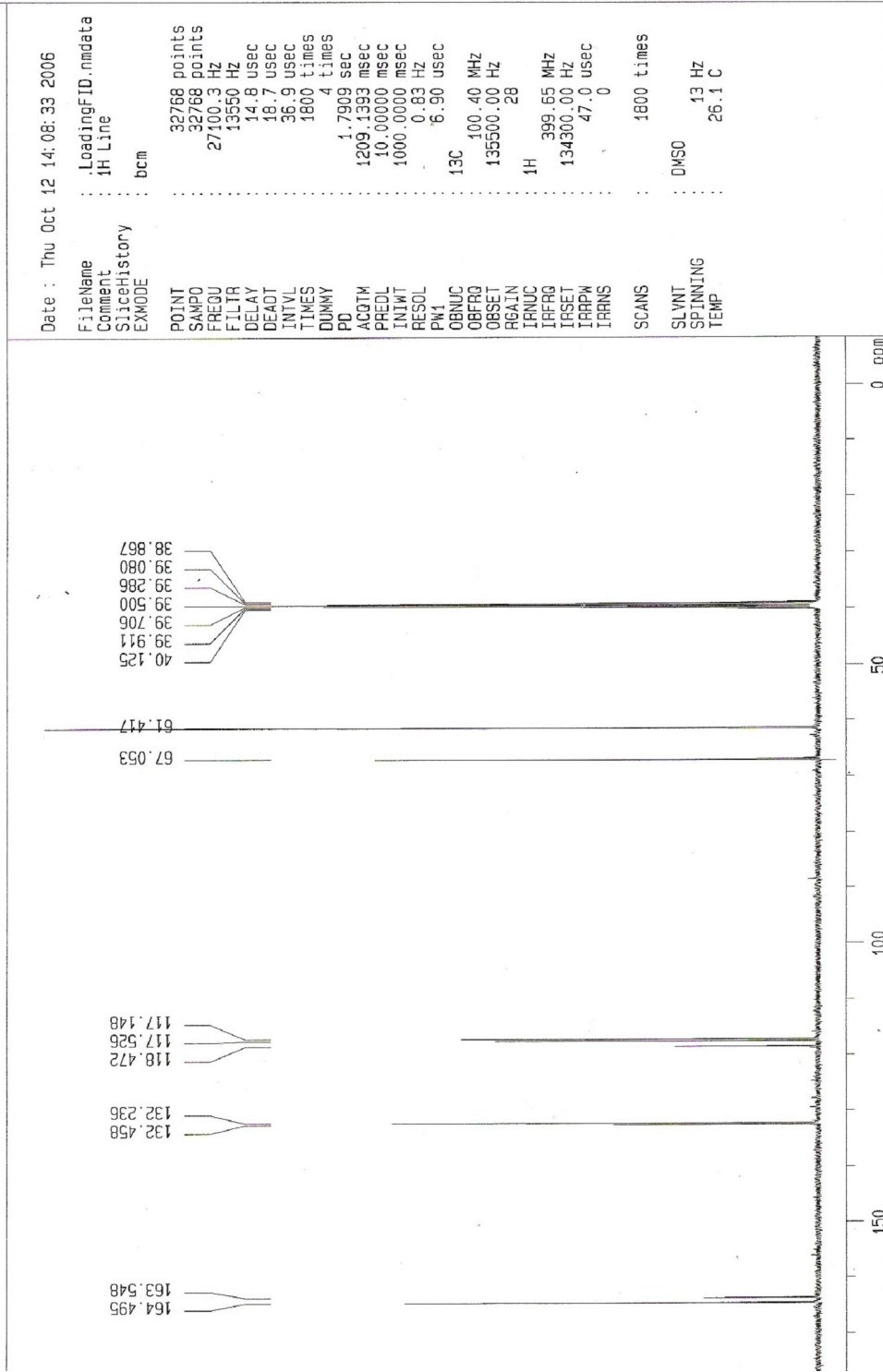


Figure 31. ¹³C NMR spectrum of [2-Salicylidenediminato-2-(hydroxymethyl)-1,3-dihydroxypropane] (saltris)

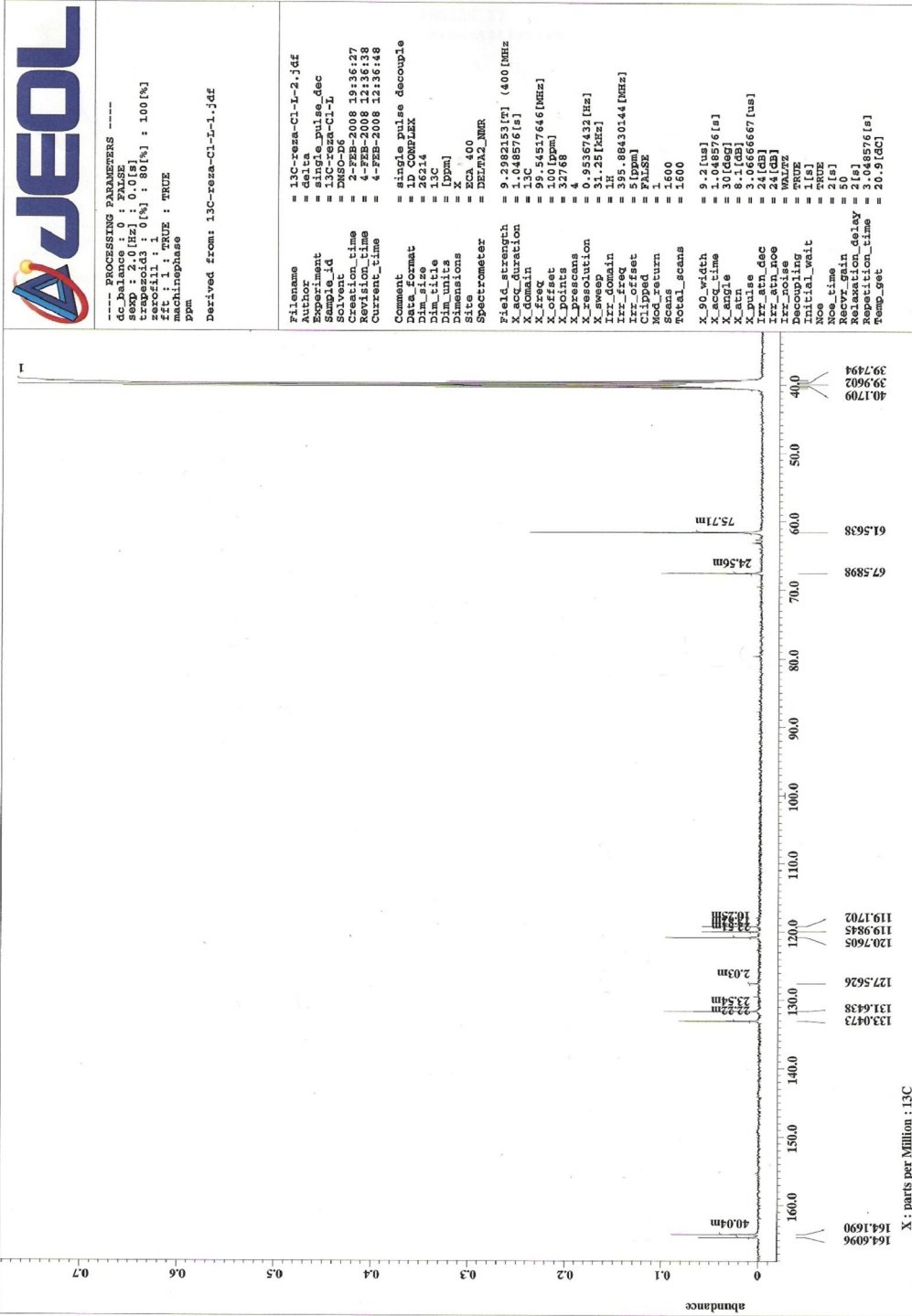


Figure 32. ¹³C NMR spectrum of 5-chloro [2-Salicylidenedimino-2-(hydroxymethyl)-1,3-dihydroxypropane] (saltris)



```

----- PROCESSING PARAMETERS -----
dc balance : 0 : FALSE
sexp : 2.0 [Hz] : 0.0 [s]
trapcisd3 : 0 [%] : 80 [%] : 100 [%]
sfc : 1 : TRUE
ft : 1 : TRUE : TRUE
machinephase
ppm
  
```

Derived from: 13C-reza-br-lig-3.jdf

```

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Filename = 13C-reza-br-lig-4.jdf
Author = delta
Experiment = single_pulse_dec
Sample_id = 13C-reza-br-lig
Date_1 = 20-FEB-2008 21:04:22
Date_2 = 20-FEB-2008 21:04:22
Creation_time = 4-FEB-2008 12:36:11
Revision_time = 4-FEB-2008 12:36:19
Current_time =
Comment = single pulse decouple
Data_format = 1D COMP.DX
Dir_name = 26214
Dim_size = 13C
Dim_title =
Dim_units = [ppm]
Dimensions = X, 400
Spectrometer = DELTA2_NMR

Field_strength = 9.2892153 [T] (400 [MHz]
X_acq_duration = 1.048576 [s]
X_center = 125.762 [MHz]
X_freq = 99.54517646 [MHz]
X_offset = 100 [ppm]
X_points = 32768
X_prescans = 4
X_resolution = 4.95367432 [Hz]
X_resolution_ppm = 3.25 [ppm]
Irr_domain = 1K
Irr_freq = 395.88430144 [MHz]
Irr_offset = 5 [ppm]
Clipped = FALSE
Scan_return = 1600
Total_scans = 1600

X_90_width = 9.2 [us]
X_acq_time = 30.048576 [s]
X_gate = 8.1 [dB]
X_atn = 3.06666667 [us]
Irr_atn_dec = 24 [dB]
Irr_atn_pwr = 24 [dB]
Decoupling = TRUE
Initial_wait = 1 [s]
Noe = TRUE
Noe_time = 2 [s]
Relaxation_delay = 0 [s]
Repetition_time = 3.048576 [s]
Temp_get = 21.2 [dC]
  
```

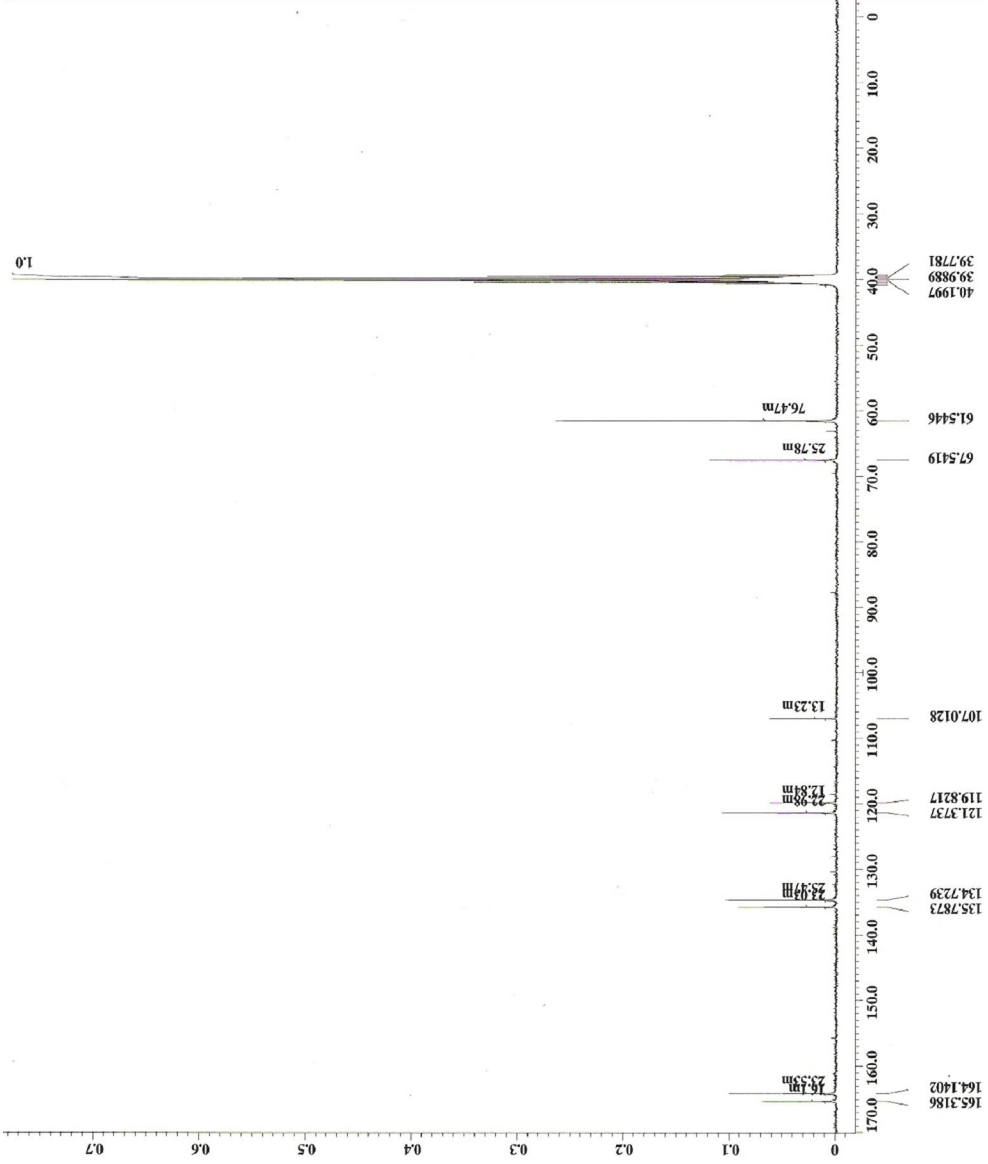


Figure 33. ¹³C NMR spectrum of 5-bromo [2-Salicylidenedimino-2-(hydroxymethyl)-1,3-dihydroxypropane]

dihydroxypropane]k

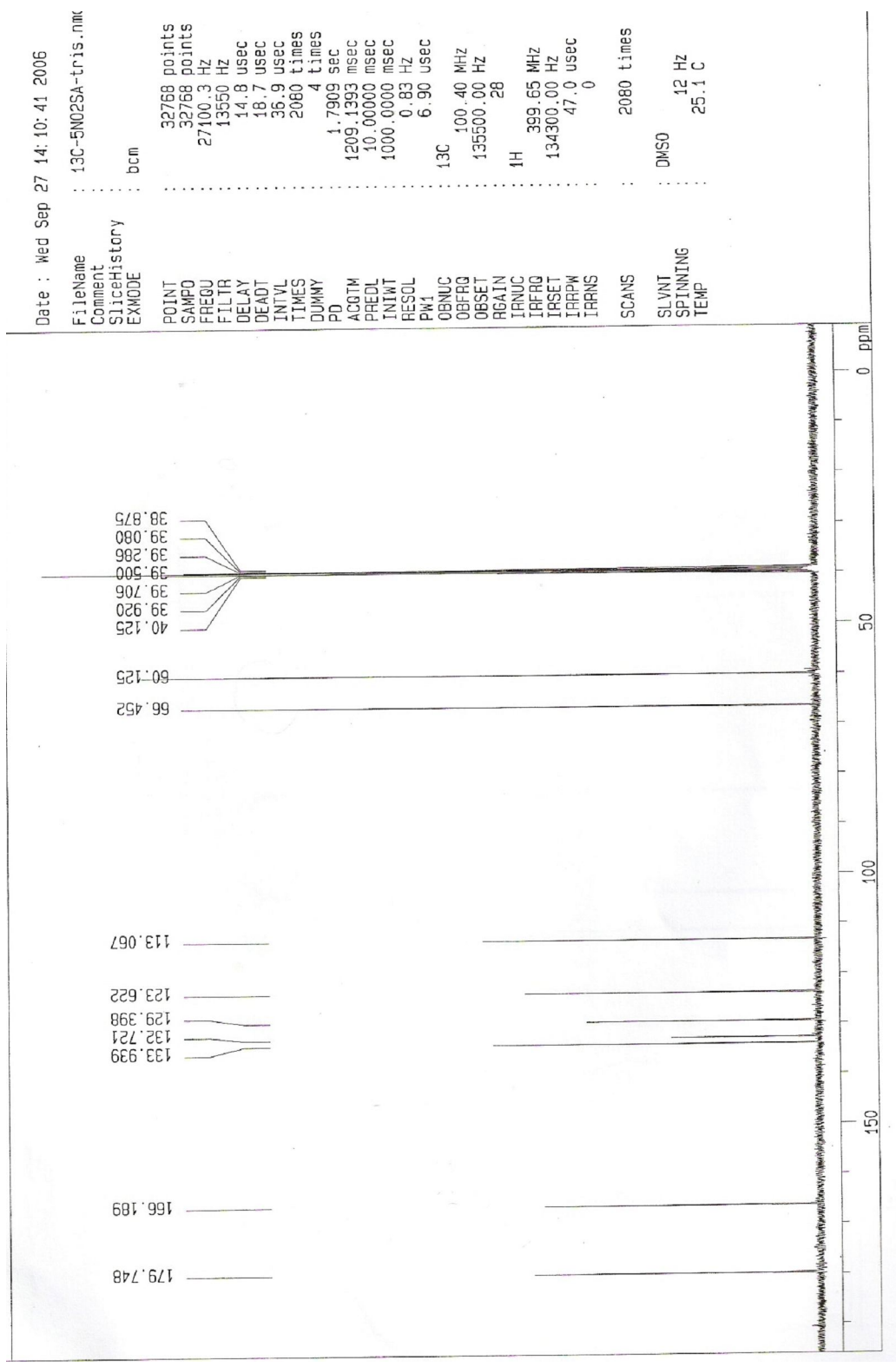


Figure 34 . ¹³C NMR spectrum of 5-nitro saltris ligand



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 dc_pulse : 0.000000
 exp : 2.0 [Hz] : 0.0 [s]
 trapacid3 : 0 [%] : 80 [%] : 100 [%]
 error1 : 0.000000
 machine : TRUE
 machinephase :
 ppm :
 Derived from: 13c-reza-23-07-07-1.jdf

Filename = 13c-reza-23-07-07-3.j
 Author = delia.pulse_dec
 Comment = 13c-reza-23-07-07
 Sample_id = CHLOROFORM-D
 Solvent = CHLOROFORM-D
 Creation_time = 24-JUL-2007 08:47:57
 Acquisition_time = 24-JUL-2007 08:50:27
 Current_time = 24-JUL-2007 08:50:27
 Comment = single pulse decoupla
 Data_format = DELTA2_NMR
 Dim_title = 13C
 Dim_units = [ppm]
 Dimensions = XCA 400
 Spectrometer = DELTA2_NMR
 Field_strength = 9.2982153 [T] (400 [MHz]
 X_acq_duration = 1.0485776 [s]
 X_freq = 13C
 X_offset = 99.54517646 [MHz]
 X_points = 100 [ppm]
 X_resolution = 27768
 X_sweep = 0.96367432 [Hz]
 X_domain = 31.25 [MHz]
 Irr_domain = IR 88430144 [MHz]
 Irr_offset = 51 [ppm]
 Clipped = TRUE
 Mod_return = 1
 Scans = 5073
 Total_scans = 5073
 X_90_width = 8.75 [us]
 X_acq_time = 1.0485776 [s]
 X_pulse = 2.91666667 [us]
 X_pulse = 2.91666667 [us]
 X_pulse = 2.91666667 [us]
 Irr_atn_dec = 24.75 [dB]
 Irr_atn_dec = 24.75 [dB]
 Decoupling = TRUE
 Initial_wait = [s]
 Noe = TRUE
 Noe = TRUE
 Servo_gain = 56
 Relaxation_delay = 2 [s]
 Repetition_time = 3.0485776 [s]
 Temp_get = 20.2 [C]

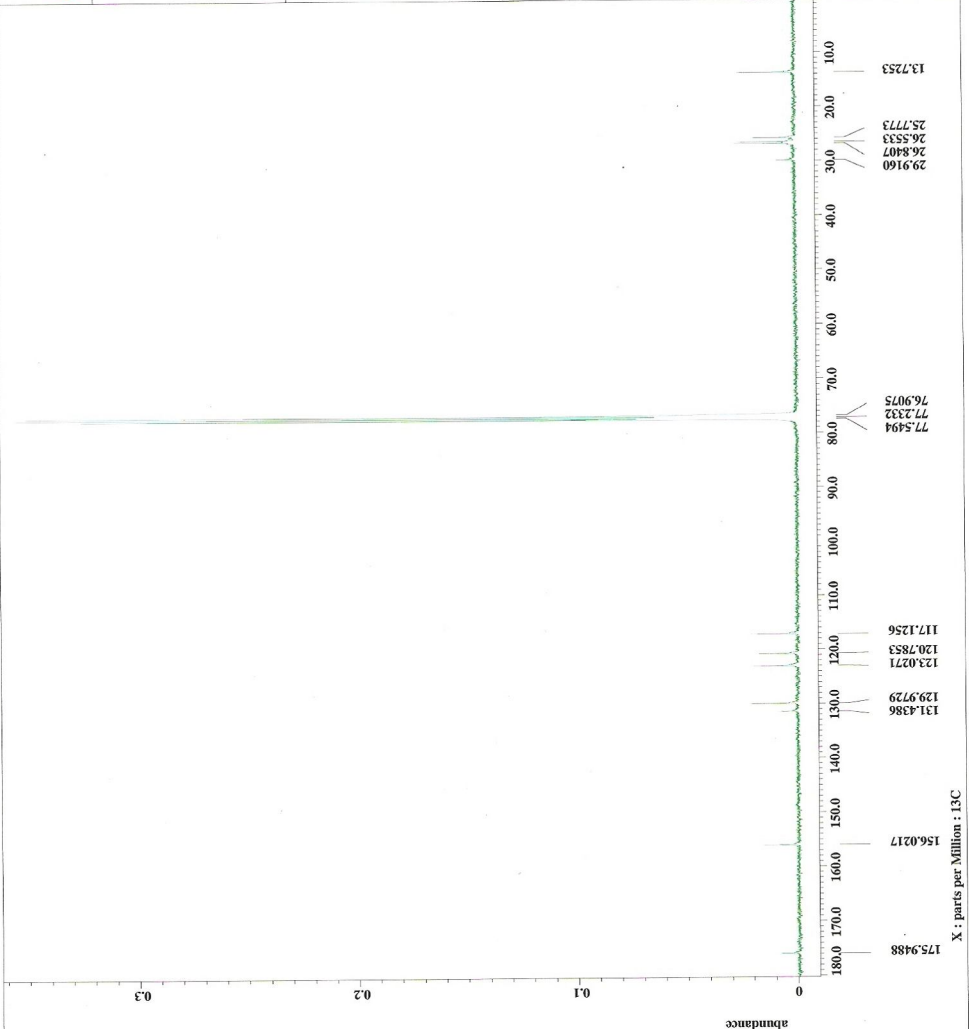


Figure 36. ¹³C NMR spectrum of dibutyltin(IV) bis(m-hydroxybenzoate)



```

--- PROCESSING PARAMETERS ---
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f2 0 : 0 [Hz]
t2 0 : 0 [s]
t2rho1d3 : 0 [%] : 80 [%] : 100 [%]
zerofill : 1
ft : 1 : TRUE : TRUE
sh phase
ppm
  
```

Derived from: 13C-reza-1-1.jdf

```

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Experiment    = single_pulse_dec
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Solvent       = PYRIDINE-D5
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Exp_time      = 3-JUL-2007 09:36:24
Current_time  = 3-JUL-2007 09:37:29
Comment       = single pulse decouple
Data_format   = ID COMPLEX
Pulse_prog    = zgpg30
Dim1          = 13C
Dim2          = [ppm]
Dimensions    = X
Site          = ECA 400
Spectrometer  = DELTA2_NMR
Field_strength = 9.2982153 [T] (400 [MHz]
X_acq_duration = 1.048576 [s]
X_domain       = 13C
X_freq         = 99.54517646 [MHz]
X_p1          = 10 [ppm]
X_p2          = 327.68
X_prescans    = 4
X_resolution  = 0.95367432 [Hz]
X_sweep       = 31.25 [kHz]
X_start       = 130.0
X_stop        = 395.88430144 [MHz]
Irr_freq      = 5 [ppm]
Irr_offset    = FALSE
Clipped       = 1
Mod_return    = 1
Sens          = 240
Total_scans   = 240
X_90_width   = 8.75 [us]
X_acq_time    = 1.048576 [s]
X_angle       = 90 [deg]
X_p1          = 10 [ppm]
X_p2          = 2.91666667 [us]
Irr_atn_dec   = 24.79 [dB]
Irr_atn_noc   = 24.79 [dB]
Irr_noise     = WALTZ
Irr_noise2    = WALTZ
Irr_noise3    = WALTZ
Initial_wait  = 1 [s]
Noe_time      = TRUE
Noe_time      = 2 [s]
Recvr_gain    = 22
Recvr_delay   = 3.01
Repetition_time = 3.048576 [s]
Temp_set      = 20.8 [dC]
  
```

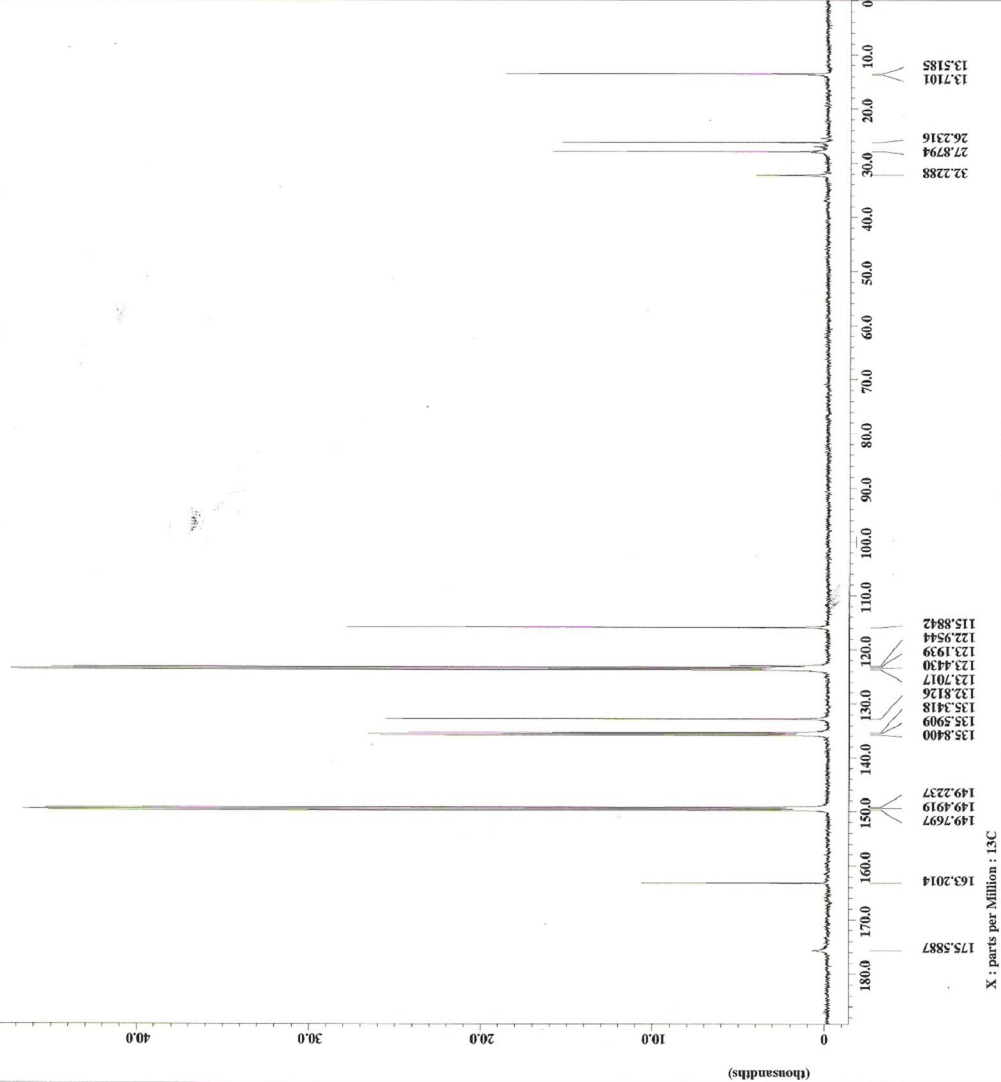


Figure 37 . ¹³C NMR spectrum of dibutyltin(IV) bis(p-hydroxybenzoate)

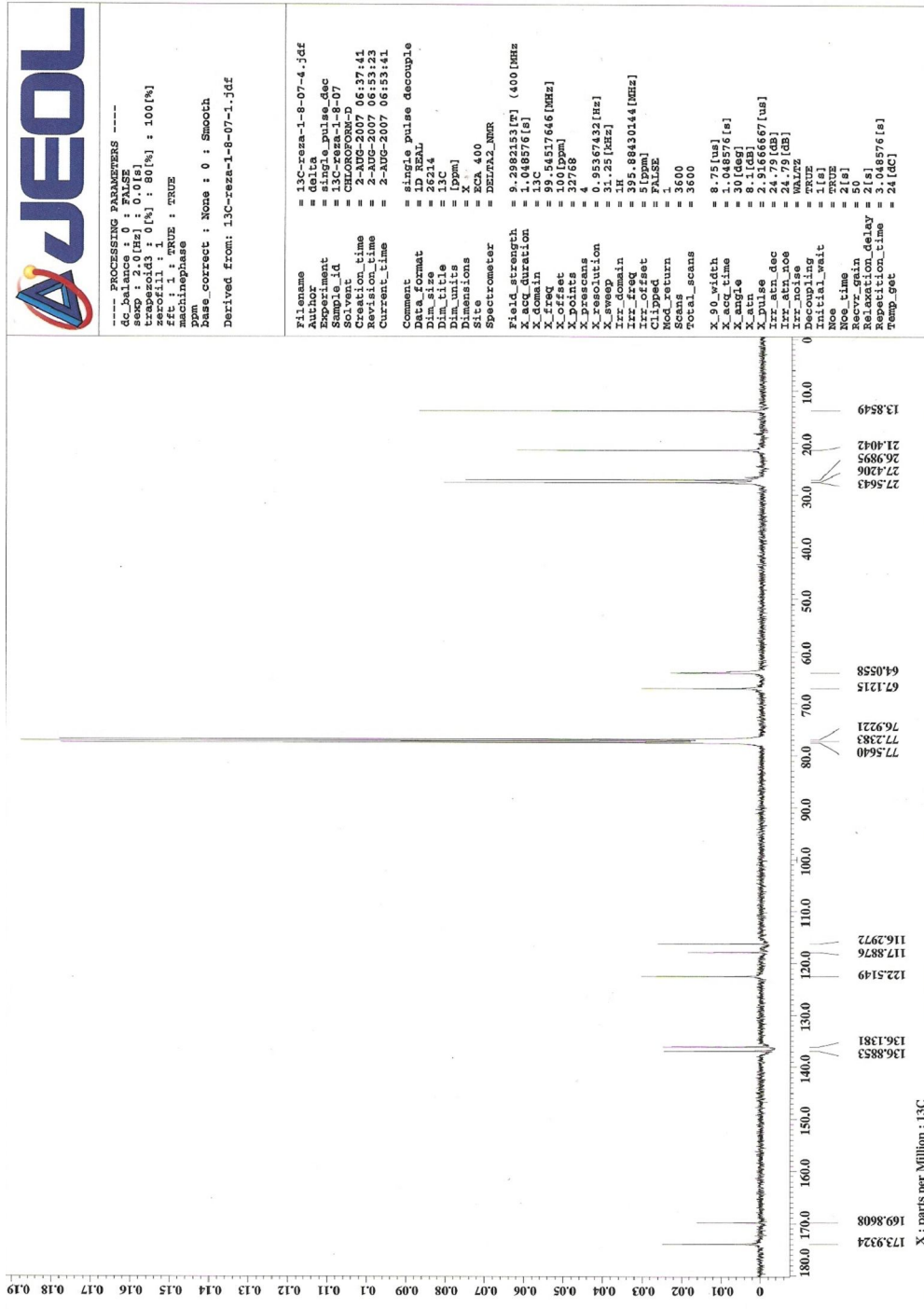


Figure 38 . ¹³C NMR spectrum of dibutyltin(IV) [2-Salicylidenedimino-2-(hydroxymethyl)-1,3-dihydroxypropane]

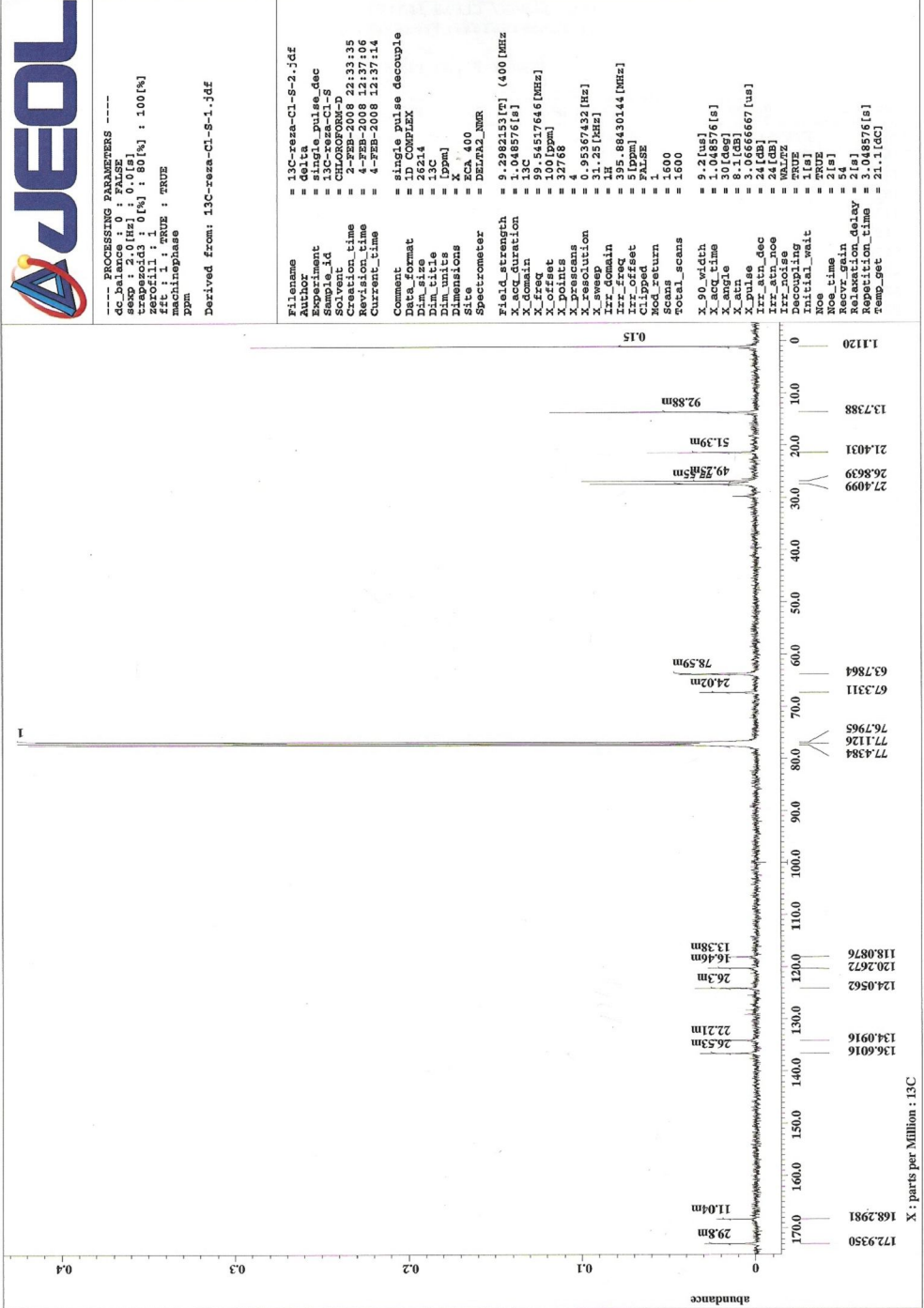


Figure 39. ¹³C NMR spectrum of dibutyltin(IV) 5-chloro [2-Salicylidenedimino-2-(hydroxymethyl)-1,3-dihydroxypropane]

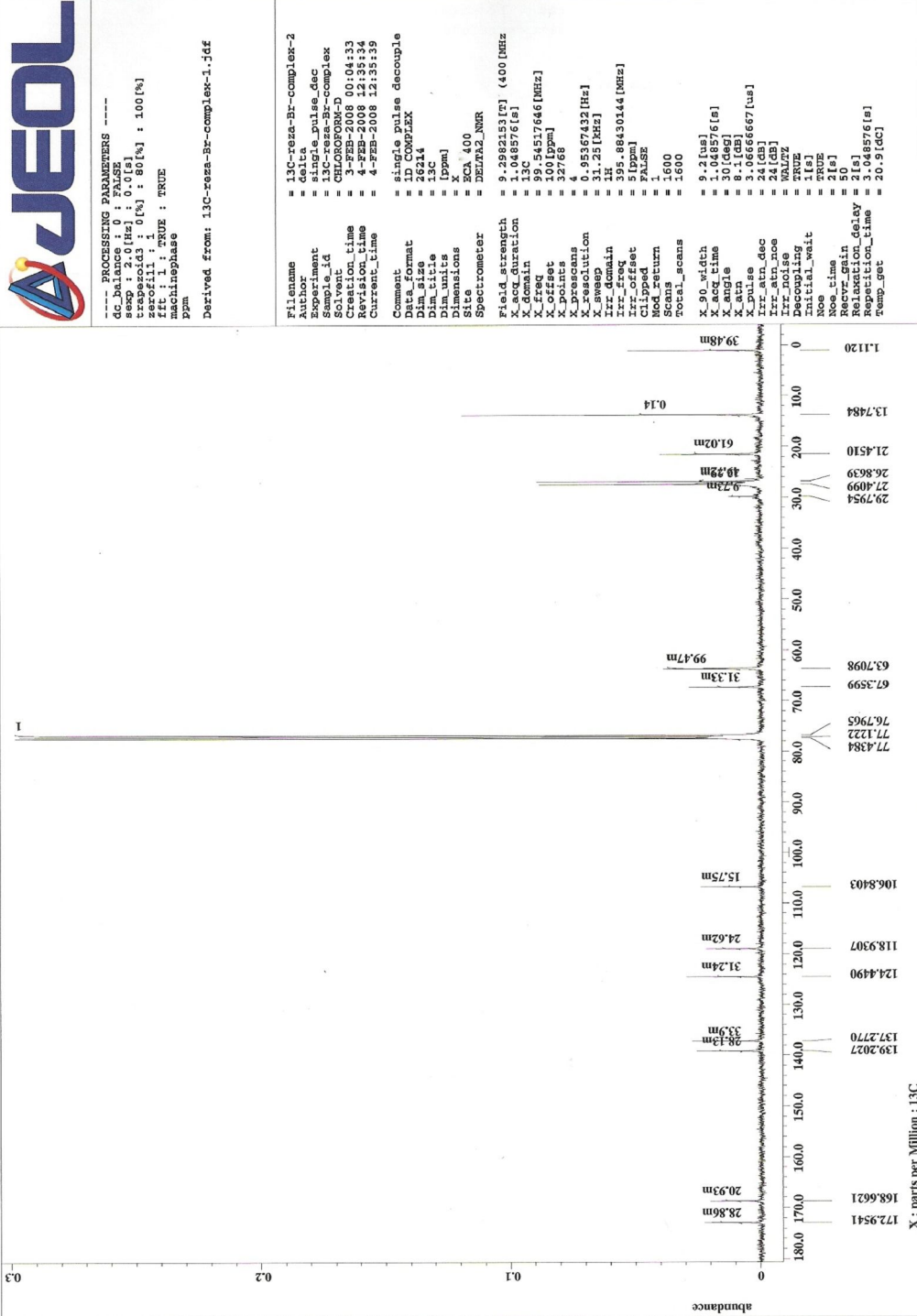


Figure 40. ¹³C NMR spectrum of dibutyltin(IV) 5-bromo [2-Salicylidenedimino-2-(hydroxymethyl)-1,3-dihydroxypropane]