

ALCALÓIDES INDÓLICOS DE *Aspidosperma spruceanum*
(APOCYNACEAE)

VOLUME 2

VILMA BRAGAS DE OLIVEIRA

UNIVERSIDADE ESTADUAL DO NORTE FLUMINENSE DARCY
RIBEIRO

CAMPOS DOS GOYTACAZES – RJ
DEZEMBRO – 2008

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“Tese apresentada ao Centro de Ciências e
Tecnologias Agropecuárias da Universidade
Estadual do Norte Fluminense Darcy Ribeiro,
como parte das exigências para obtenção do
título de doutor em Produção Vegetal”

Orientador: Prof. Ivo José Curcino Vieira

CAMPOS DOS GOYTACAZES – RJ
DEZEMBRO – 2008

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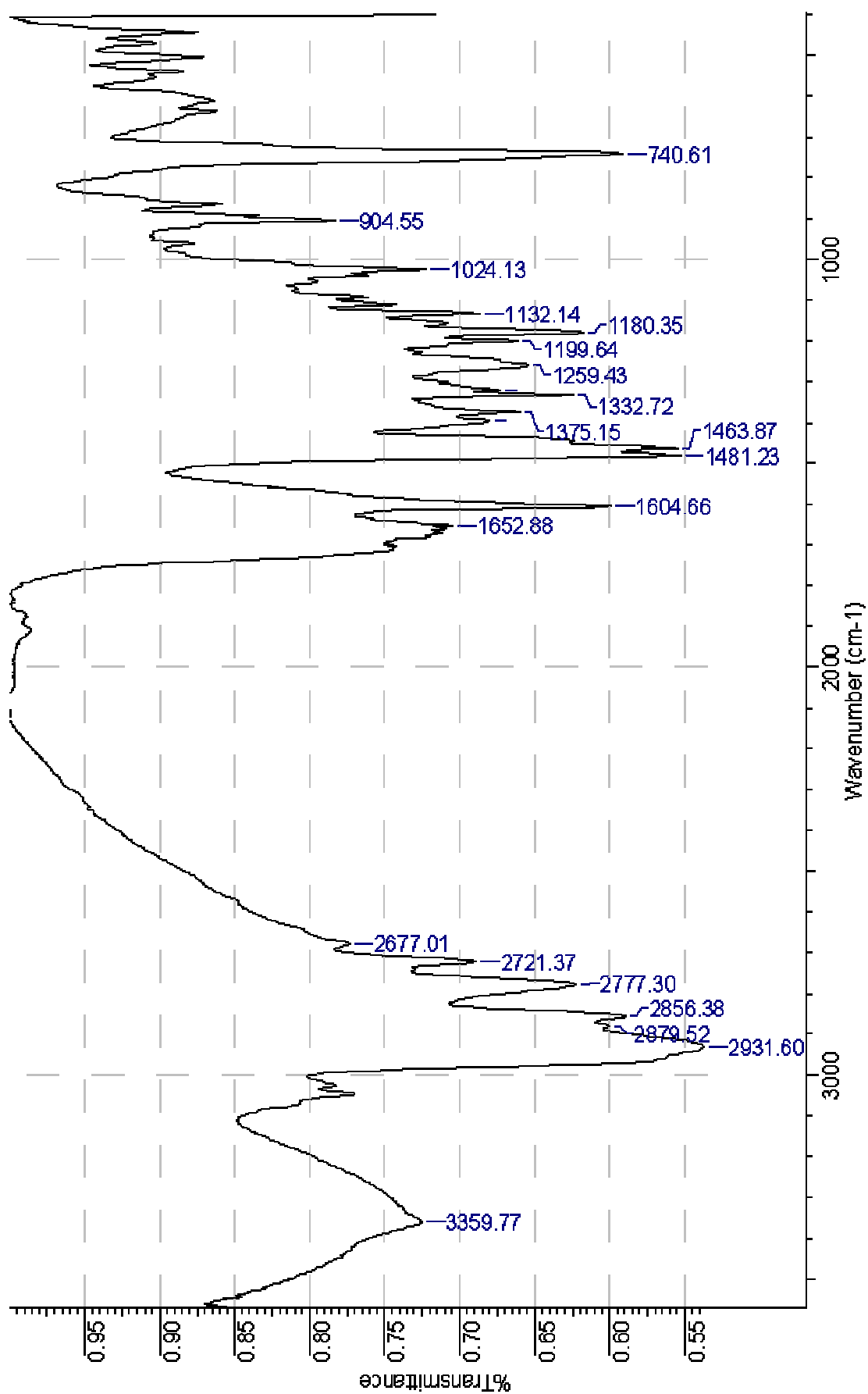
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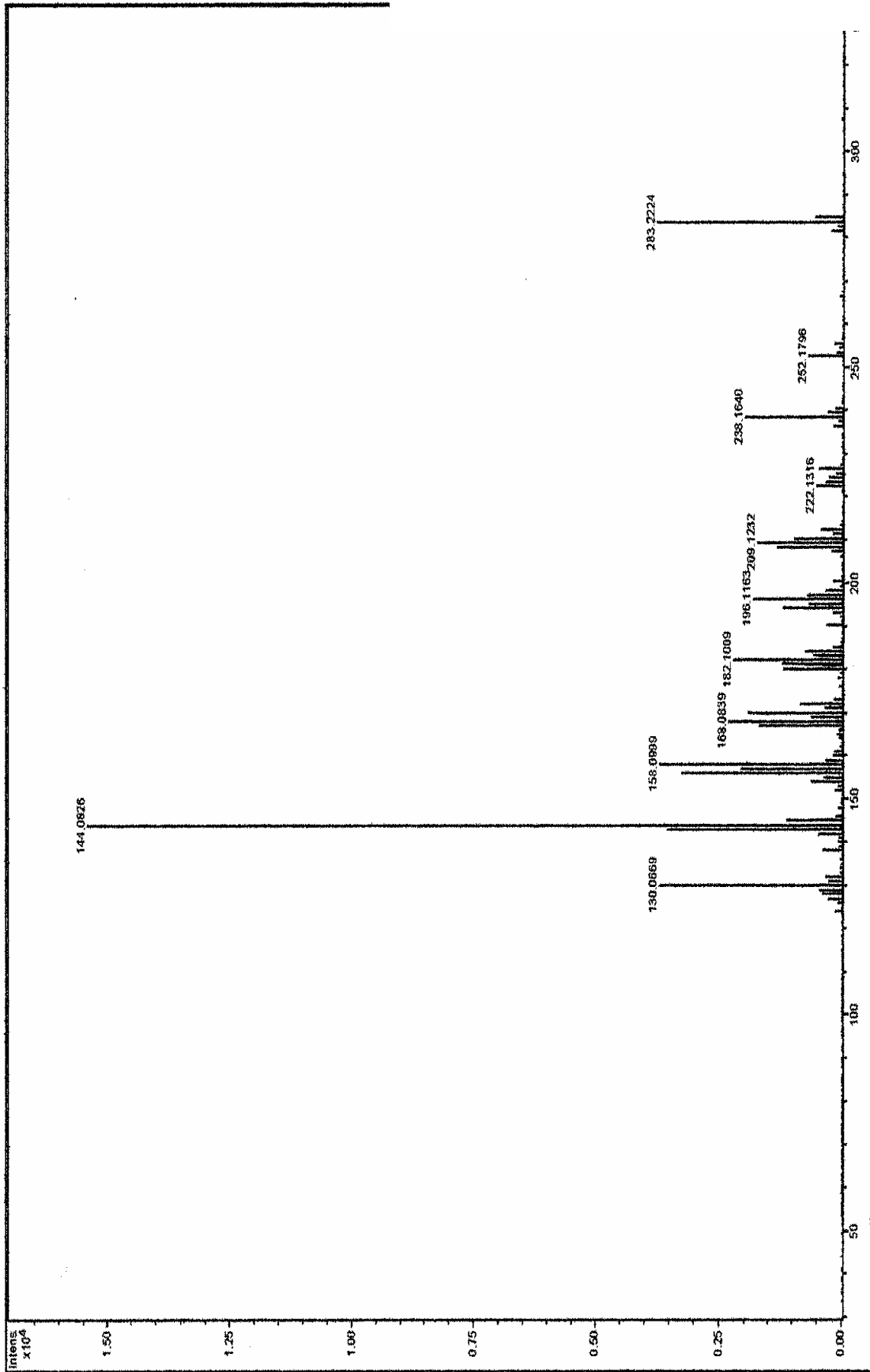
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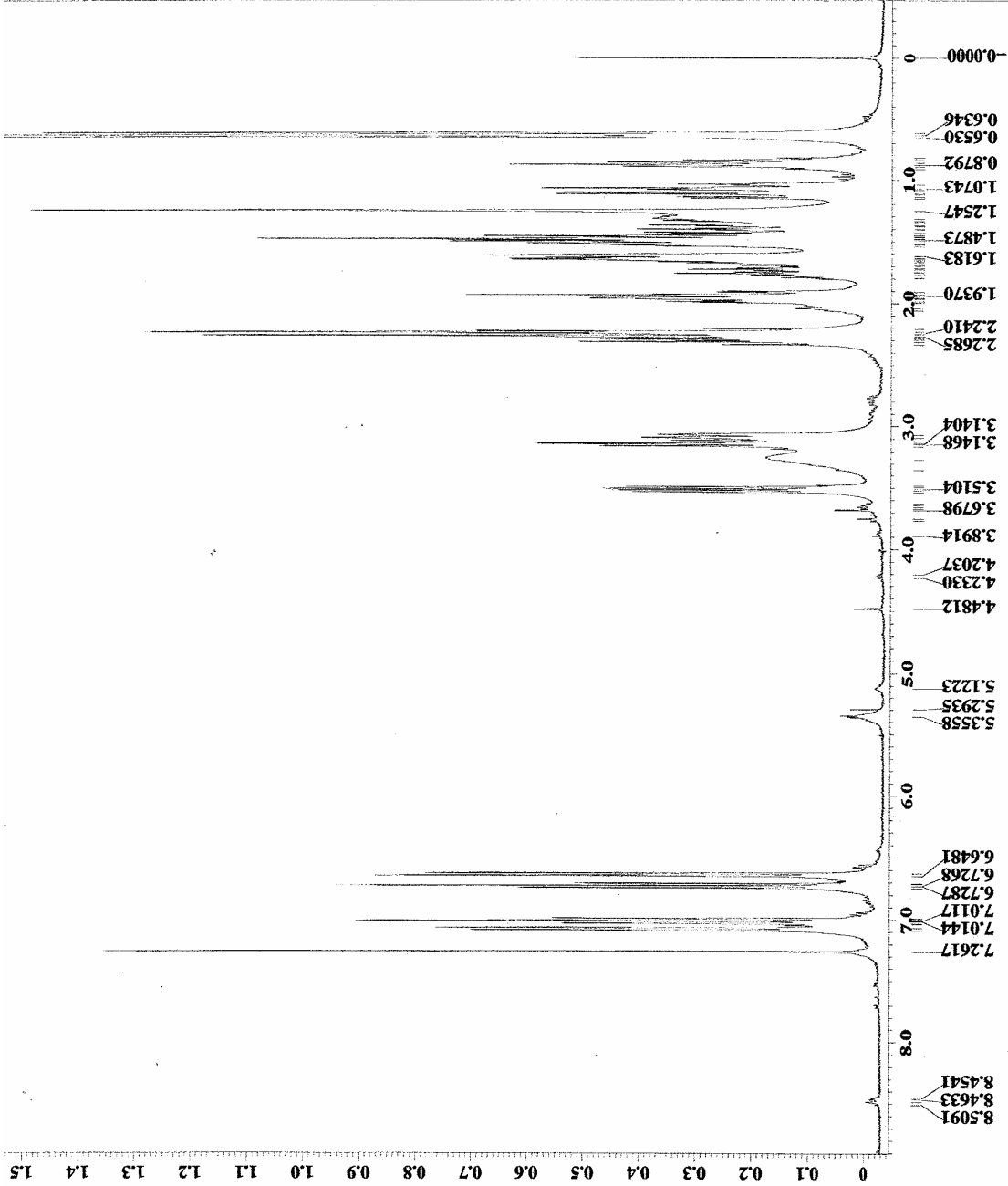
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Author = Jan Schripsema
Sample ID = 55204314
Content = Single Pulse Experiment
Creation Date = 4-MAY-2005 14:18:21
Revision Date = 5-MAY-2005 11:10:12
Spec Site = Eclipse+ 400
Spec Type = DELTA_NMR
Data Format = ID COMPLEX
Dimensions = X
Dim title = 1H
Dim size = 16384
Dim units = ppm
Acq_delay = 0.1631 [ms]
Xname_sample = single_pulse.exp
Xname_solvent = 9.389766 [T]
Field_strength = 14.7 [us]
Irr90_hi = 23.5 [us]
Irr90_lo = 60 [us]
Irr_width = 60 [us]
Lock_status = IDLE
Recvr_gain = 8
Relaxation_delay_4 [s] = 8
Scans = 8
Solvent = CHLOROFORM-D
Spin_rate = 90 [Hz]
Spin_lock_90 = 12.5 [dB]
Spin_lock_attn = 15 [Hz]
Spin_set = SPIN ON
Spin_status = SPIN ON
Temp_get = 25 [C]
Temp_set = 25 [C]
Temp_status = TEMP ON
X90_hi = 14.7 [us]
X90_lo = 60.5 [us]
X90 = 2.7312128 [s]
X_acc_duration = 1K
X_domain = 399.78219838 [MHz]
X_freq = 7 [ppm]
X_offset = 16384
X_points = 0
X_prescans = 0
X_pulse = 7.35 [us]
X_resolution = 0.36613771 [Hz]
X_sweep = 5.9880024 [kHz]

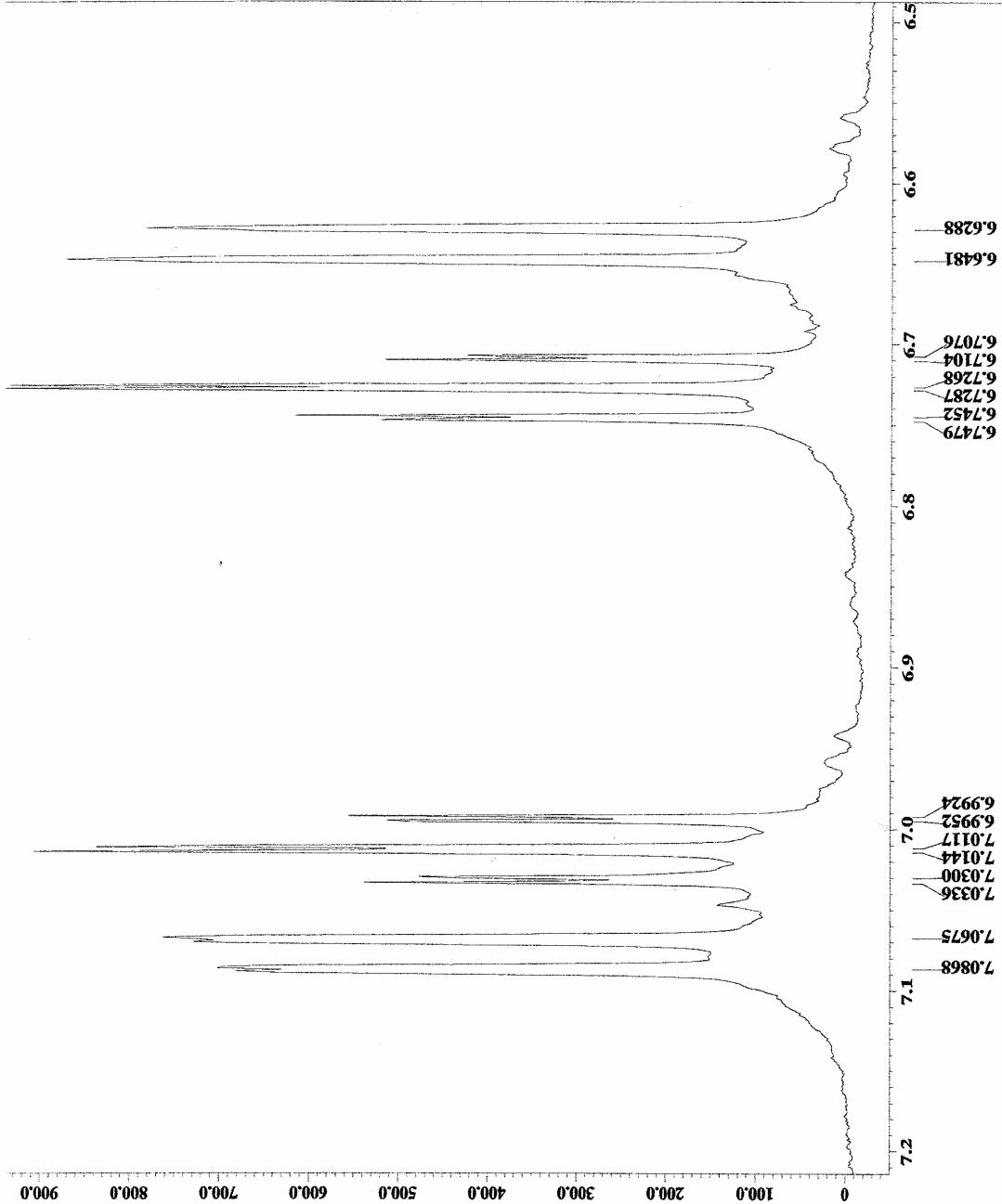


Espectro 3. Espectro de RMN ¹H (400 MHz) em CDCl₃ do alcalóide (+)-aspidospermidina.

```

----- ACQUISITION PARAMETERS -----
File Name      = 5204314-ld_spectrum.8
Batch ID       = 5204314
Sample Name    = 5204314
Content        = Single Pulse Experiment
Creation Date  = 4-MAY-2005 14:18:21
Revision Date  = 5-MAY-2005 11:07:20
Spec Site     = Eclipse+ 400

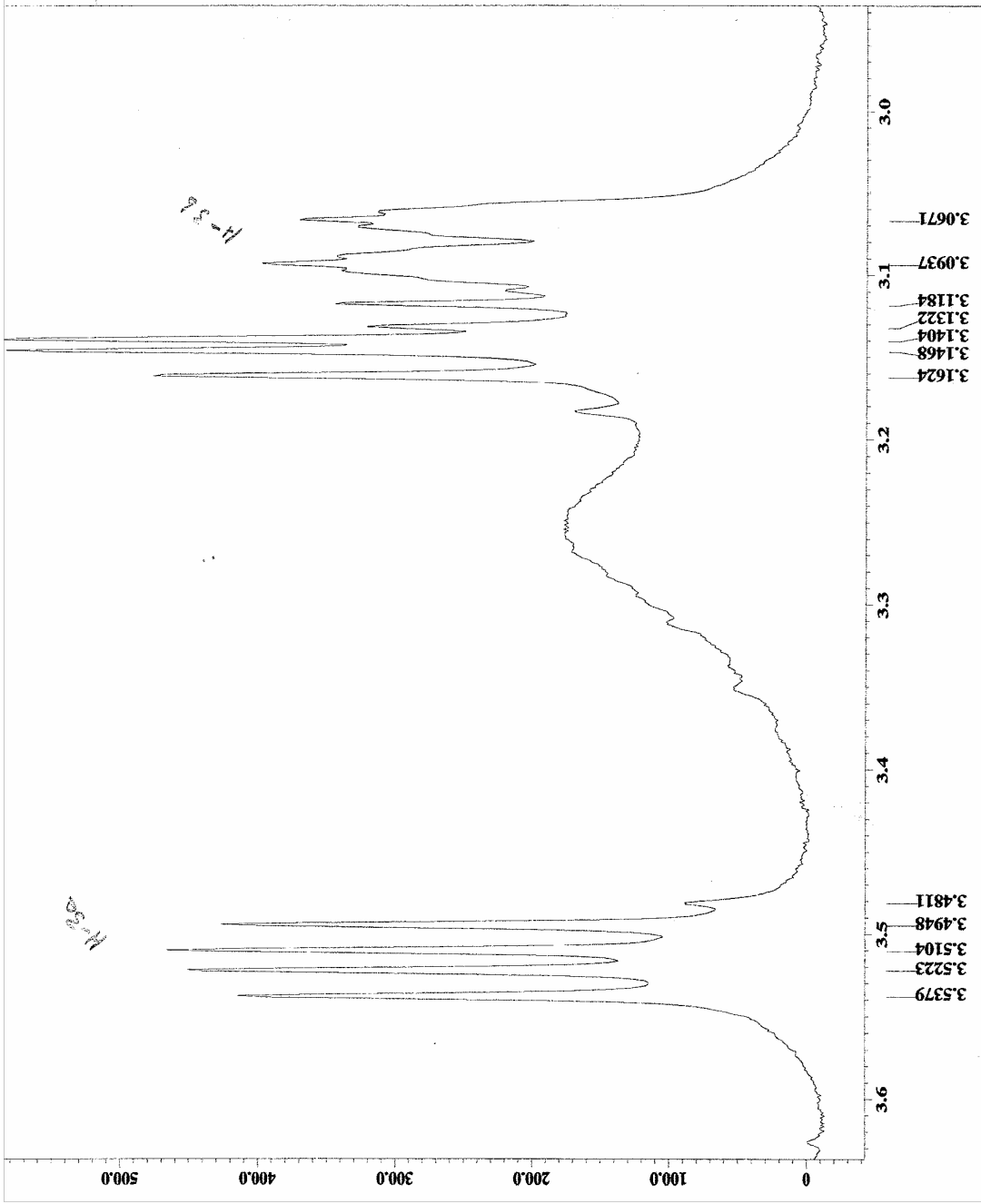
Spec Type     = DELTA_NMR
Data Format    = LD_COMPLEX
Pulse_Program = 1K
Dim Name     = 1K
Dim Size     = 16384
Dim Units   = [ppm]
Acq_Delay    = 0.1631[ms]
Changer_Sample = single_pulse.exp
Experiment    = 9.389766[F]
Field_Strength = 14.7[us]
Irr90_hl     = 40.5[us]
Irr90_ll     = 60[us]
IrrWidth     = 60[us]
Lock_Status  = IDLE
Recvr_Gain   = 8
Relaxation_Delay = 4[s]
Scans        = 8
Solvent      = CHLOROFORM-D
Spin_Get     = 15[kHz]
Spin_Lock_90 = 12[us]
Spin_Lock_atn = 15[kHz]
Spin_State   = SPIN ON
Spin_Status  = SPIN ON
Temp_Get     = 25[degC]
Temp_Set    = 25[degC]
Temp_Status  = TEMP ON
X30_hl      = 14.7[us]
X30_ll      = 25.5[us]
X30_lo      = 60[us]
X_acq_duration = 2.7312128[s]
X_domain    = 1K
X_freq      = 399.78219838[MHz]
X_offset    = 7[ppm]
X_points    = 16384
X_prescans  = 0
X_pulse     = 7.32[us]
X_resolution = 0.861071[MHz]
X_sweep     = 5.9980024[MHz]
  
```



Espectro 4. Ampliação da região de δ_H 6,5-7,2 do espectro de RMN 1H (400 MHz) em $CDCl_3$ do alcalóide (+)-aspidospermidina.

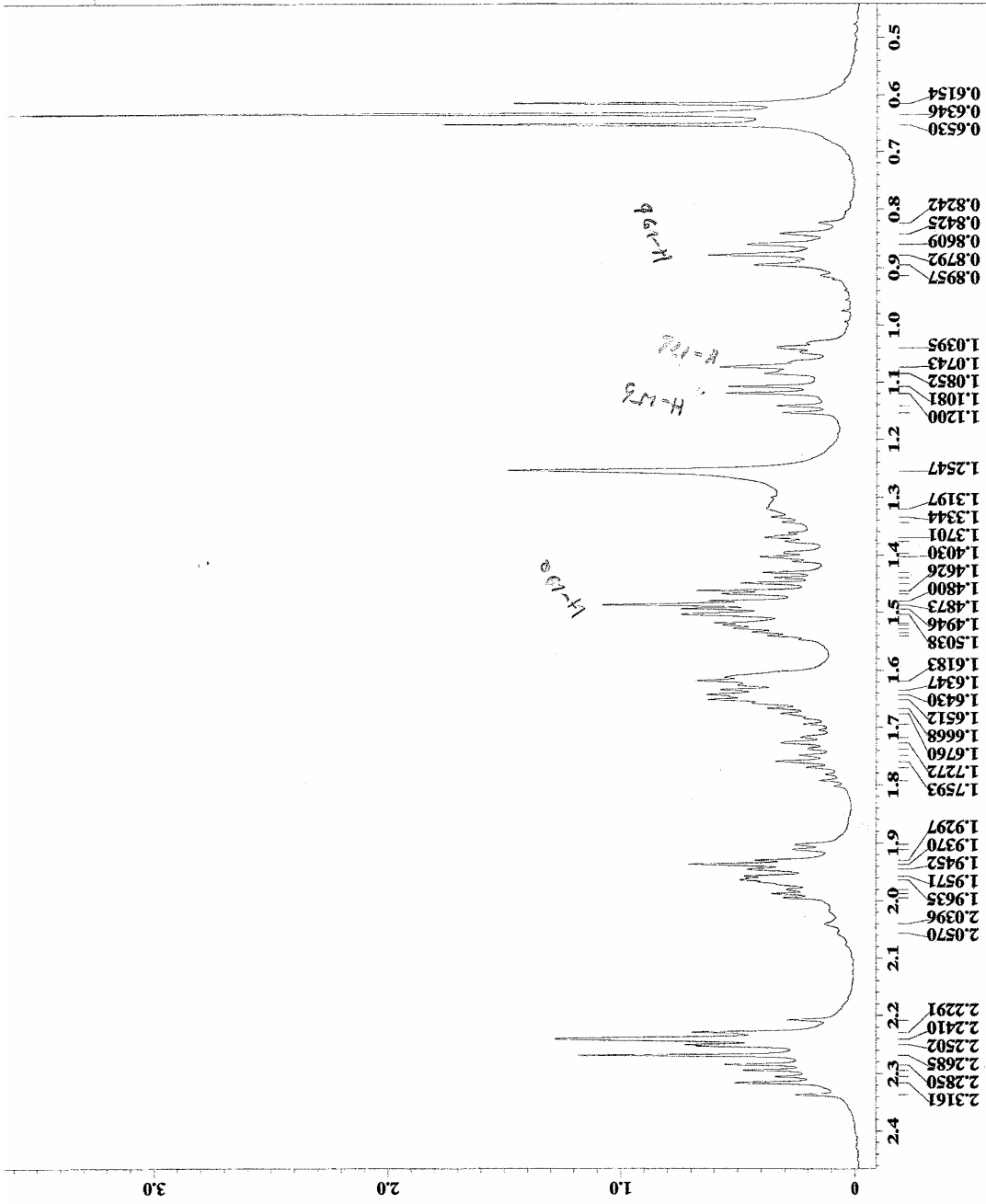


----- ACQUISITION PARAMETERS -----
File Name = 55204314-id_spectrum.8
Author = 55204314rpbema
Content = Single Pulse Experiment
Creation Date = 4-MAY-2005 14:18:21
Revision Date = 5-MAY-2005 11:15:39
Spec Site = Eclipse+ 400
Spec Type = DELTA_NMR
Data Format = ID COMPLEX
Dim Title = 1H
Dim Size = 16384
Dim Units = [ppm]
Acq_delay = 0.1631 [ms]
Changer_sample = single_pulse.exp
Experiment = 9.389766 [T]
Field_strength = 24.5 [T]
X90_hi = 60 [us]
X90_lo = 60 [us]
Xrx_pwidth = 60 [us]
Lock_status = IDLE
Recvr_gain = 8
Relaxation_delay = 4 [s]
Scans = 8
Solvent = CHLOROFORM-D
Spin_get_90 = 90 [Hz]
Spin_lock_attn = 12.5 [dB]
Spin_lock_attn = 15 [Hz]
Spin_set = SPIN ON
Spin_status = SPIN ON
Temp_get = 25 [dC]
Temp_set = 25 [dC]
Temp_status = TEMP ON
X90_hi = 12.7 [us]
X90_lo = 23.5 [us]
X90_lo = 60 [us]
X_acq_duration = 2.7312128 [s]
X_domain = 1H
X_freq = 399.7821986 [MHz]
X_offset = 7 [ppm]
X_points = 16384
X_pyscans = 7
X_resolution = 7.35 [us]
X_sweep = 0.36613771 [Hz]
X_sweep = 5.99880024 [kHz]



Espectro 5. Ampliação da região de δ_H 3,0-3,6 do espectro de RMN 1H (400 MHz) em $CDCl_3$ do alcalóide (+)-aspidospermidina.

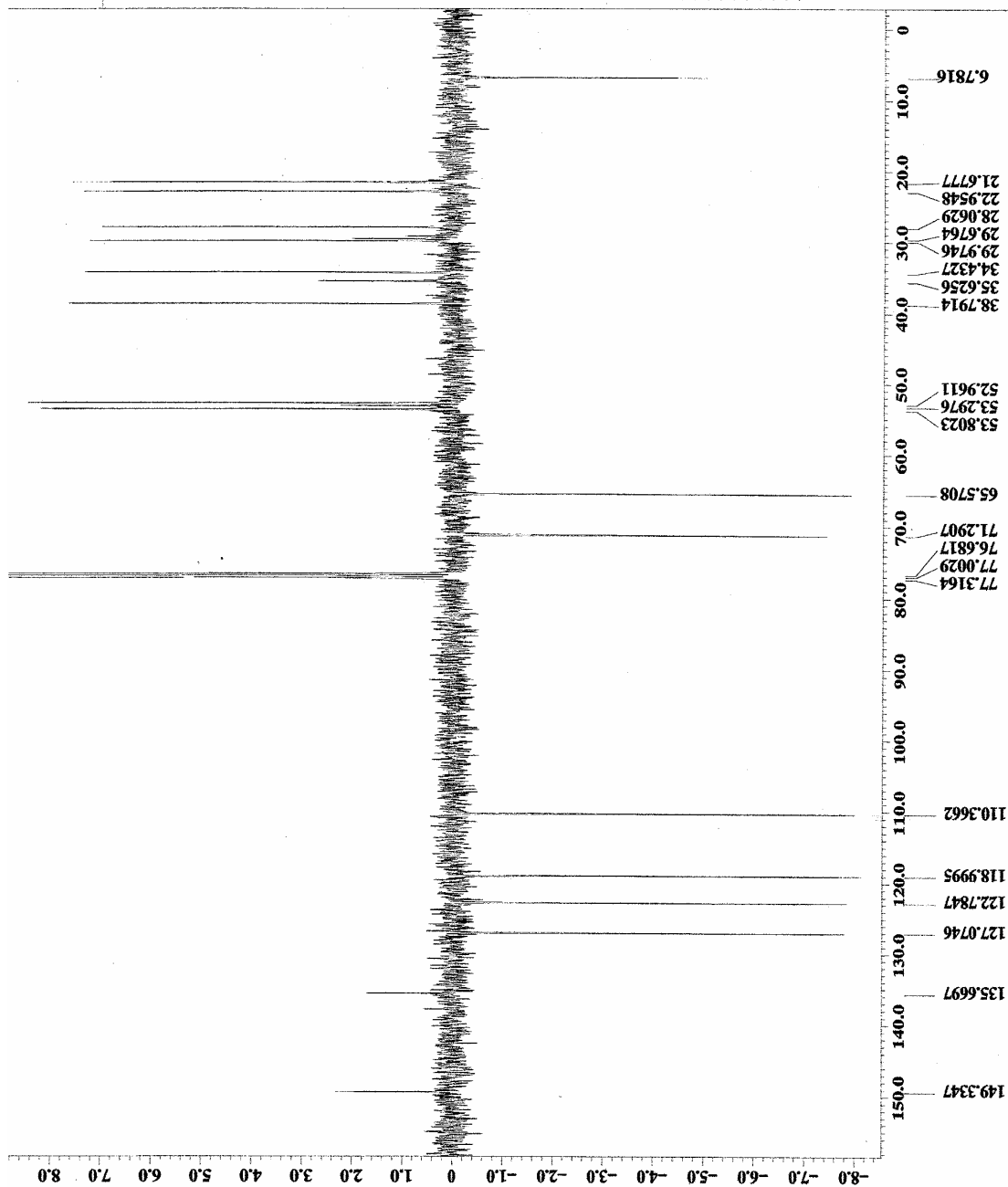
----- ACQUISITION PARAMETERS -----
 File Name = 52204314-14_spectrum.8
 Author = Jan Schripsema
 Sample ID = 52204314
 Content = Single Pulse Experiment
 Creation Date = 4-MAY-2005 14:18:21
 Revision Date = 5-MAY-2005 11:10:12
 Spec Site = Eclipse+ 400
 Spec Type = DREA NMR
 Data Format = 1D COMPLEX
 Dimensions = X
 Dim Title = 1H
 Dim Size = 16384
 Dim Units = [ppm]
 Acq_delay = 0.1631 [ms]
 Change_sample = 0
 Experiment = single_pulse.exp
 File_name = 1.3276 [Hz]
 Irr90_strength = 23.5 [us]
 Irr90_lo = 60 [us]
 Irr90_hi = 60 [us]
 Irr_width = 60 [us]
 Lock_status = IDLE
 Recvr_gain = 8
 Relaxation_delay = 4 [s]
 Scans = 8
 Solvent = BROMOFORM-D
 Spin_rate = 15 [Hz]
 Spin_lock_90 = 90 [us]
 Spin_lock_attn = 12.5 [dB]
 Spin_set = 15 [Hz]
 Spin_status = SPIN ON
 Temp_set = 25 [dc]
 Temp_status = 25 [dc]
 X90_lo = 14.7 [us]
 X90_hi = 23.5 [us]
 X90_lo = 60 [us]
 X_acq_duration = 2.7312128 [s]
 X_domain = 1H
 X_freq = 399.78219838 [MHz]
 X_offset = 7 [ppm]
 X_points = 0
 X_ticks = 0
 X_pulse = 7.35 [us]
 X_resolution = 0.36613771 [Hz]
 X_sweep = 5.99880024 [kHz]



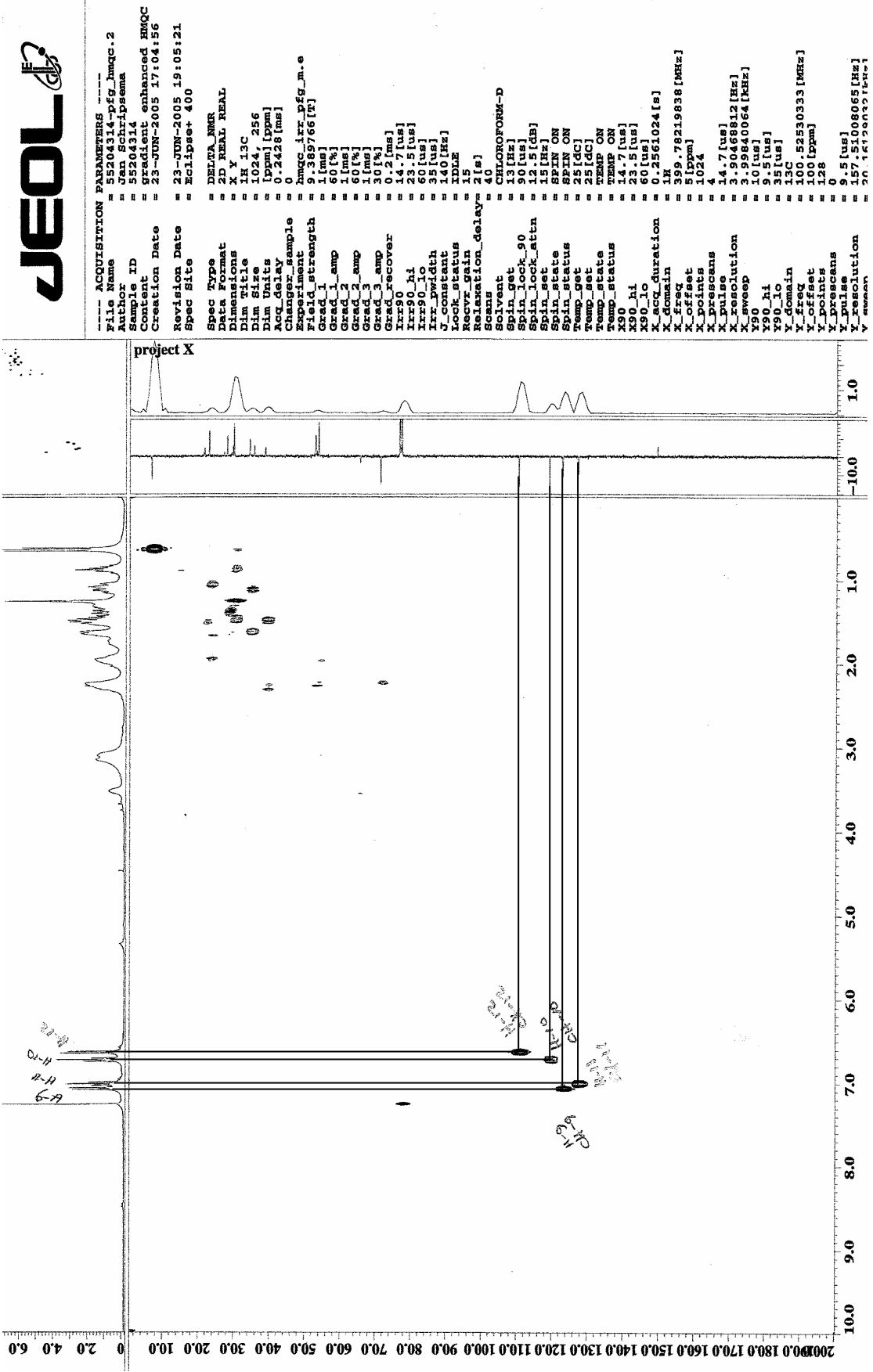
Espectro 6. Ampliação da região de δ_H 0,5-2,4 do espectro de RMN 1H (400 MHz) em $CDCl_3$ do alcalóide (+)-aspidospermidina.



---- ACQUISITION PARAMETERS ----
File Name = 55204314-apt.5
Author = Jan Schripsema
Sample ID = 55204314
Content = apt Experiment
Creation Date = 4-MAY-2005 14:38:21
Revision Date = 5-MAY-2005 11:21:06
Spec Site = Eclipse-400
Spec Type = DELTA_NMR
Data Format = ID_COMPLEX
Dimensions = K
Dim Title = 13C
Dim Size = 32768
Dim Units = Dppm
Acq_delay = 38.7[us]
Charger_sample = 0
Kpt_offset = 0
Field_strength = 9.38976[T]
Irr90_hi = 14.7[us]
Irr90_lo = 23.5[us]
Irr90_lo = 60[us]
Irr_domain = IR
Irr_pwidth = 60[us]
J_constant = 140[Hz]
Lock_status = 13C
Relaxation_delay = 11[s]
Scans = 440
Solvent = CHLOROFORM-D
Spin_get = 15[Hz]
Spin_lock_90 = 90[us]
Spin_lock_atn = 12.5[dB]
Spin_set = 15[Hz]
Spin_status = SPIN ON
Spin_status = 25.1[CC]
Temp_set = 25[CC]
Temp_status = TEMP ON
X90_hi = 10[us]
X90_lo = 9.5[us]
X90_lo = 35[us]
X_acq_duration = 1.3008896[s]
X_domain = 13C 52530333[MHz]
X_offset = 100.62ppm
X_points = 32768
X_prescans = 4
X_pulse = 5[us]
X_resolution = 0.76870474[Hz]
X_sweep = 25.18891688[MHz]



Espectro 7. Espectro de RMN ¹³C (100 MHz-APT) em CDCl₃ do alcalóide (+)-aspidospermidina.



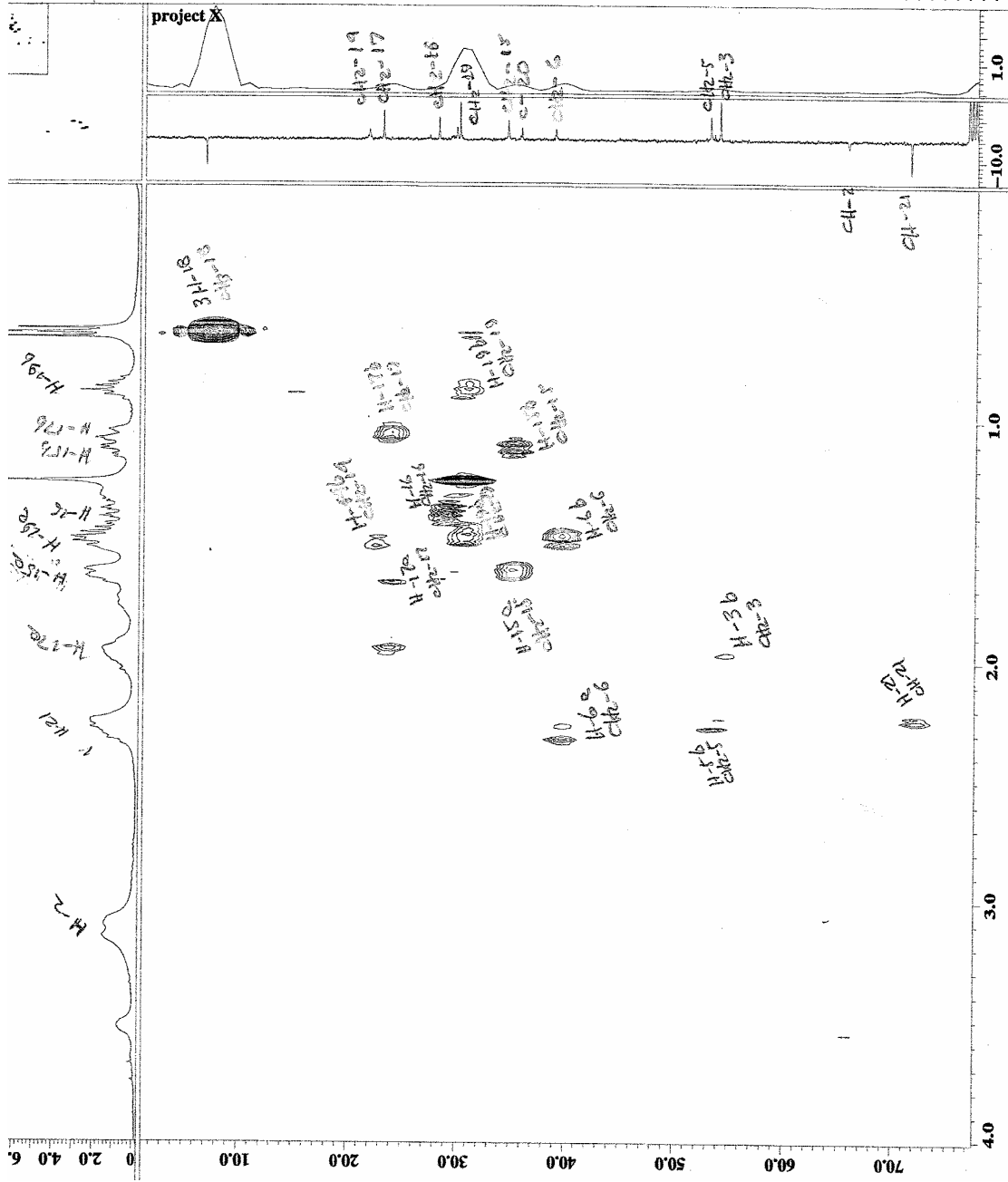
```

--- ACQUISITION PARAMETERS ---
File Name      = 55204314-pfg_hmqc.2
Author        = Jan Schripsema
Sample ID     = 55204314
Content       = gradient enhanced HMQC
Creation Date = 23-JUN-2005 17:04:56
Revision Date = 23-JUN-2005 19:05:21
Spec Site     = Xclipse-400

Spec Type     = DELTA_RMR
Data Format    = 2D REAL REAL
Dimensions    = X Y
Dim Title     = 1H 13C
Dim Size      = 1024, 256
Dim Units     = [ppm] [ppm]
Acq_delay     = 0.2428 [ms]
Channels      = hmqc irr pfg_m-e
X_resolution  = 9.389766 [Hz]
Field strength = 1 [T]
Grad_1_amp    = 60 [%]
Grad_2_amp    = 1 [ms]
Grad_3_amp    = 60 [%]
Grad_4_amp    = 1 [ms]
X90_recovery  = 30 [%]
X90_lo        = 14.7 [us]
X90_hi        = 23.5 [us]
Irr_width     = 60 [us]
J_constant    = 35 [us]
Lock_status   = 140 [Hz]
Recvr_gain    = IDLE
Relaxation_delay = 15 [s]
SOLVENT       = CHLOROFORM-D
Spin_get      = 13 [Hz]
Spin_lock_90  = 90 [us]
Spin_lock_attn = 12.5 [dB]
Spin_set      = 15 [Hz]
Spin_status   = SPIN ON
Temp_get      = 25 [C]
Temp_status   = SPIN ON
X90_lo        = 14.7 [us]
X90_hi        = 23.5 [us]
X_acq_duration = 0.2561024 [s]
X_domain      = 1K
X_freq        = 399.78219838 [MHz]
X_offset      = 5 [ppm]
X_points      = 1024
X_prescans    = 14.7 [us]
X_resolution  = 3.90468812 [kHz]
Y90           = 3.99840064 [kHz]
Y90_lo        = 10 [us]
Y90_hi        = 9.5 [us]
Y_domain      = 13C
Y_freq        = 100.62530333 [MHz]
Y_offset      = 18 [ppm]
Y_points      = 128
Y_prescans    = 0
Y_pulse       = 9.5 [us]
Y_resolution  = 157.51008065 [Hz]
Y_sweep       = 20.1612623315 [Hz]

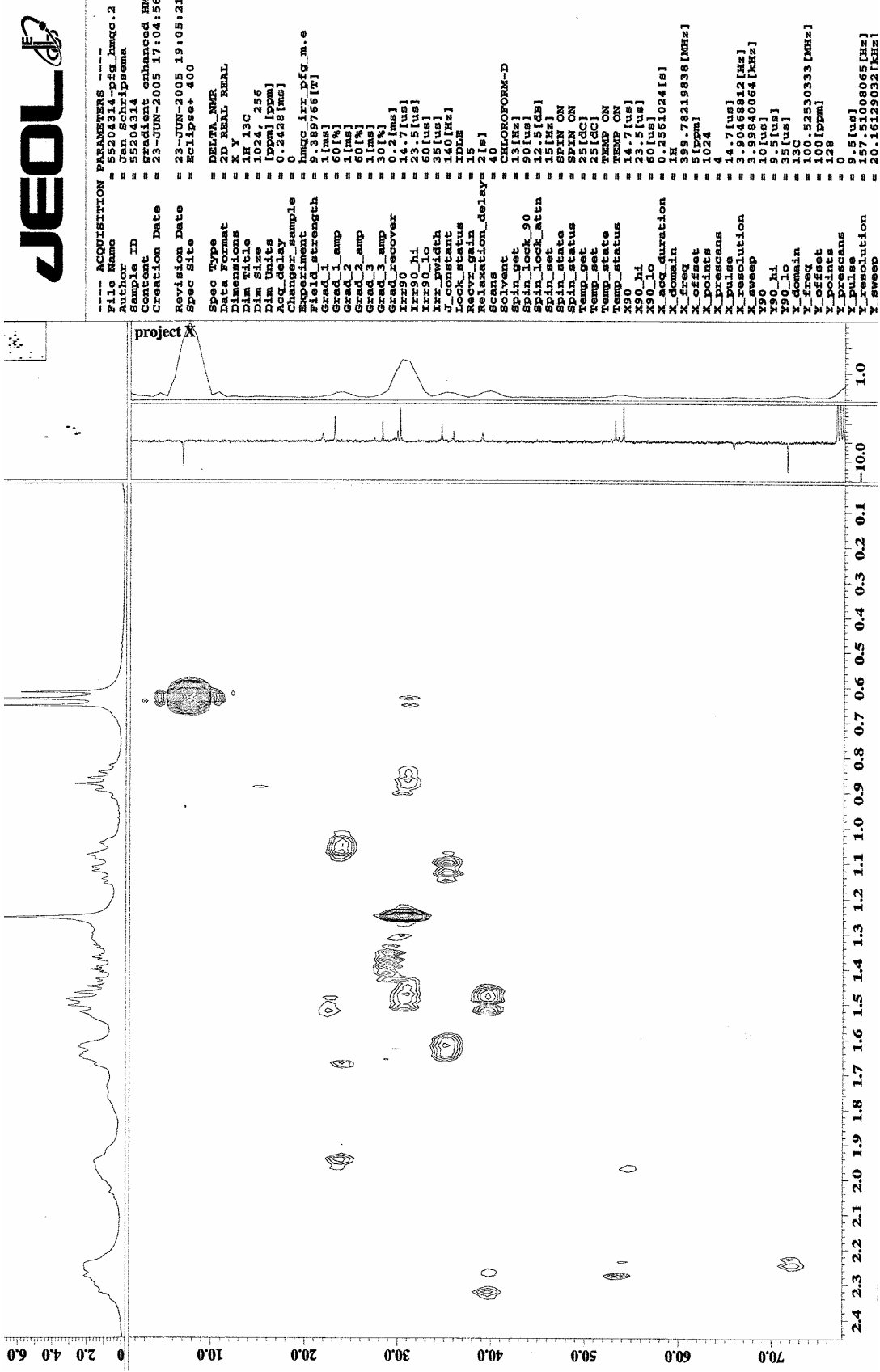
```

Espectro 8. Mapa de correlação heteronuclear HMQC em CDCl₃ do alcalóide (+)-aspidiospermidina.



ACQUISITION PARAMETERS
File Name = 55204314.pfg_hmqc.2
Sample ID = 55204314
Content = Gradient enhanced HMQC
Creation Date = 23-JUN-2005 17:04:56
Revision Date = 23-JUN-2005 19:05:21
Spec Site = Eclipse+ 400
Spec Type = DELTA_NMR
Data Format = 2D REAL REAL
Dimensions = X Y
Pulse Program = 13C
Pulse Sequence = 102 256
Pulse Length = 1000 [us]
Pulse Delay = 0.2428 [ms]
Acq Delay = 0
Changer Sample = hmqc_irr_pfg_m.e
Experiment = 9.389766 [T]
Field Strength = 1 [ms]
Grad 1 Amp = 60 [%]
Grad 2 Amp = 60 [%]
Grad 3 Amp = 3 [ms]
Grad 3 Delay = 0.2 [ms]
Irr90 Hi = 14.7 [us]
Irr90 Lo = 23.5 [us]
Irr Width = 60 [us]
J Constant = 35 [us]
Lock Status = 140 [Hz]
Lock Gain = 15
Relaxation Delay = 2 [s]
Solvent = CHLOROFORM-D
Spin Get = 13 [Hz]
Spin Lock 90 = 90 [us]
Spin Lock Attn = 12.5 [dB]
Spin Set = 15 [Hz]
Spin Status = SPIN ON
Temp Get = 25 [dc]
Temp Set = TEMP ON
X90 Status = 23.5 [us]
X90 Hi = 60 [us]
X90 Lo = 0.2561024 [s]
X Acq Duration = 1H
X Domain = 399.78219838 [MHz]
X Freq = 5 [ppm]
X Points = 1024
X Prescans = 4
X Pulse = 14.7 [us]
X Resolution = 3.90468812 [Hz]
X Sweep = 1075840064 [kHz]
Y90 Hi = 9.5 [us]
Y90 Lo = 35 [us]
Y Domain = 13C
Y Freq = 100.52530333 [MHz]
Y Points = 128
Y Prescans = 0
Y Resolution = 9.5 [us]
Y Sweep = 157.51008065 [kHz]

Espectro 9. Ampliação do mapa de correlação heteronuclear HMQC em CDCl₃ do alcalóide (+)-aspidospermidina.



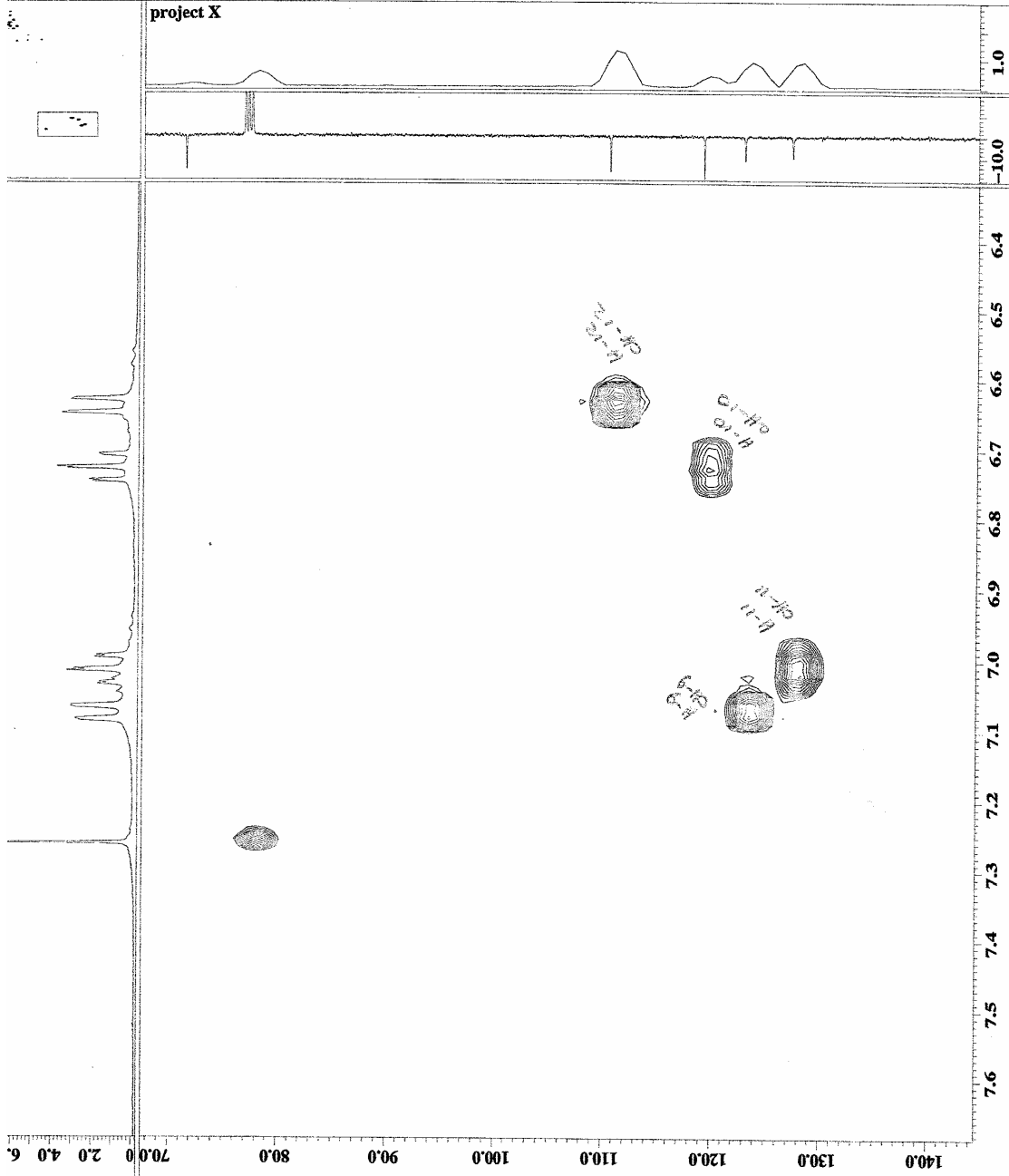
```

----- ACQUISITION PARAMETERS -----
File Name      = 55204314.prg_hmqc.2
Sample ID     = 55204314
Content       = Gradient enhanced HMQC
Creation Date = 23-JUN-2005 17:04:56
Revision Date = 23-JUN-2005 19:05:21
Spec Site    = Eclipse+ 400

Spec Type    = DELTA NMR
Data Format  = 2D REAL REAL
Dimensions  = X Y
Dim 1 Size  = 1K 13C
Dim 2 Size  = 1024, 256
Dim Units   = [ppm] [ppm]
Acq_delay   = 0.2428 [ms]
Change_sample = 0
Pulse_prog  = hmqc_irr_pfg_m.e
P14_strength = 9.389766 [P]
Grad_1_amp  = 1 [ms]
Grad_2_amp  = 60 [%]
Grad_3_amp  = 60 [%]
Grad_4_amp  = 30 [%]
Irr90_recover = 14.7 [us]
Irr90_lo    = 23.5 [us]
Irr90_hi    = 60 [us]
J_constant  = 35 [Hz]
Lock_status = IDLE
Recvr_gain  = 15
Relaxation_delay = 2 [s]
Swept      = 40
Solvent    = CHLOROFORM-D
Spin_get   = 13 [Hz]
Spin_lock_90 = 90 [us]
Spin_lock_attn = 12.5 [dB]
Spin_set   = 15 [Hz]
Spin_status = SPIN ON
Temp_get   = 25 [C]
Temp_set   = 25 [C]
Temp_status = TEMP ON
X90_lo     = 14.7 [us]
X90_hi     = 23.5 [us]
X90_lo     = 60 [us]
X90_hi     = 23.5 [us]
X_domain   = 1K
X_freq     = 399.78219838 [MHz]
X_offset   = 5 [ppm]
X_points   = 1024
X_prescans = 4
X_pulse    = 14.7 [us]
X_resolution = 3.90468812 [Hz]
X_sweep    = 10 [us]
Y90_lo     = 9.5 [us]
Y90_hi     = 35 [us]
Y_domain   = 13C
Y_freq     = 100.52530333 [MHz]
Y_offset   = 100 [ppm]
Y_points   = 256
Y_pulse    = 9.5 [us]
Y_resolution = 157.51008065 [Hz]
Y_sweep    = 20.16129032 [kHz]

```

Espectro 10. Ampliação do mapa de correlação heteronuclear HMQC em CDCl_3 do alcalóide (+)-aspidospermidina.

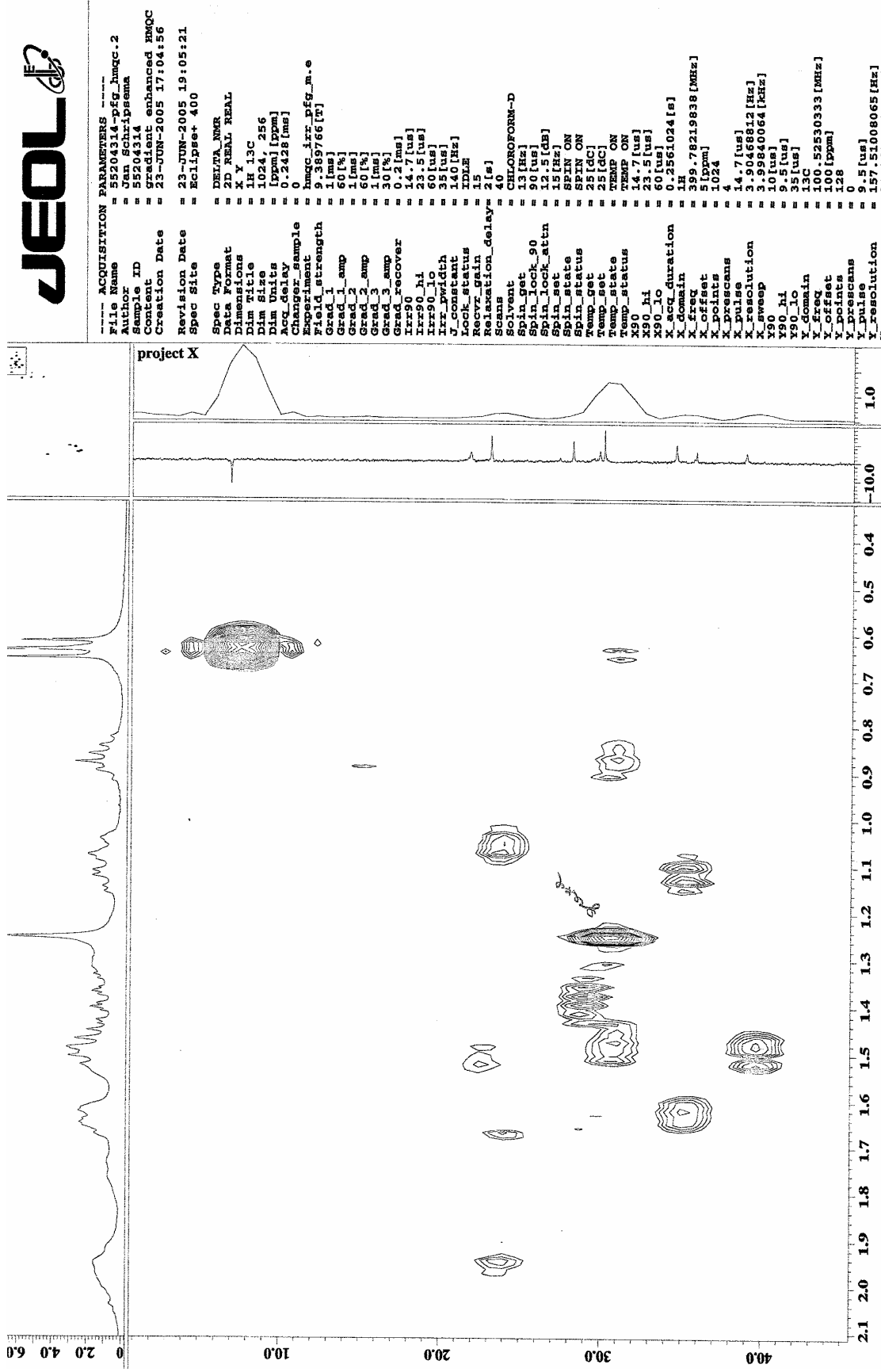


```

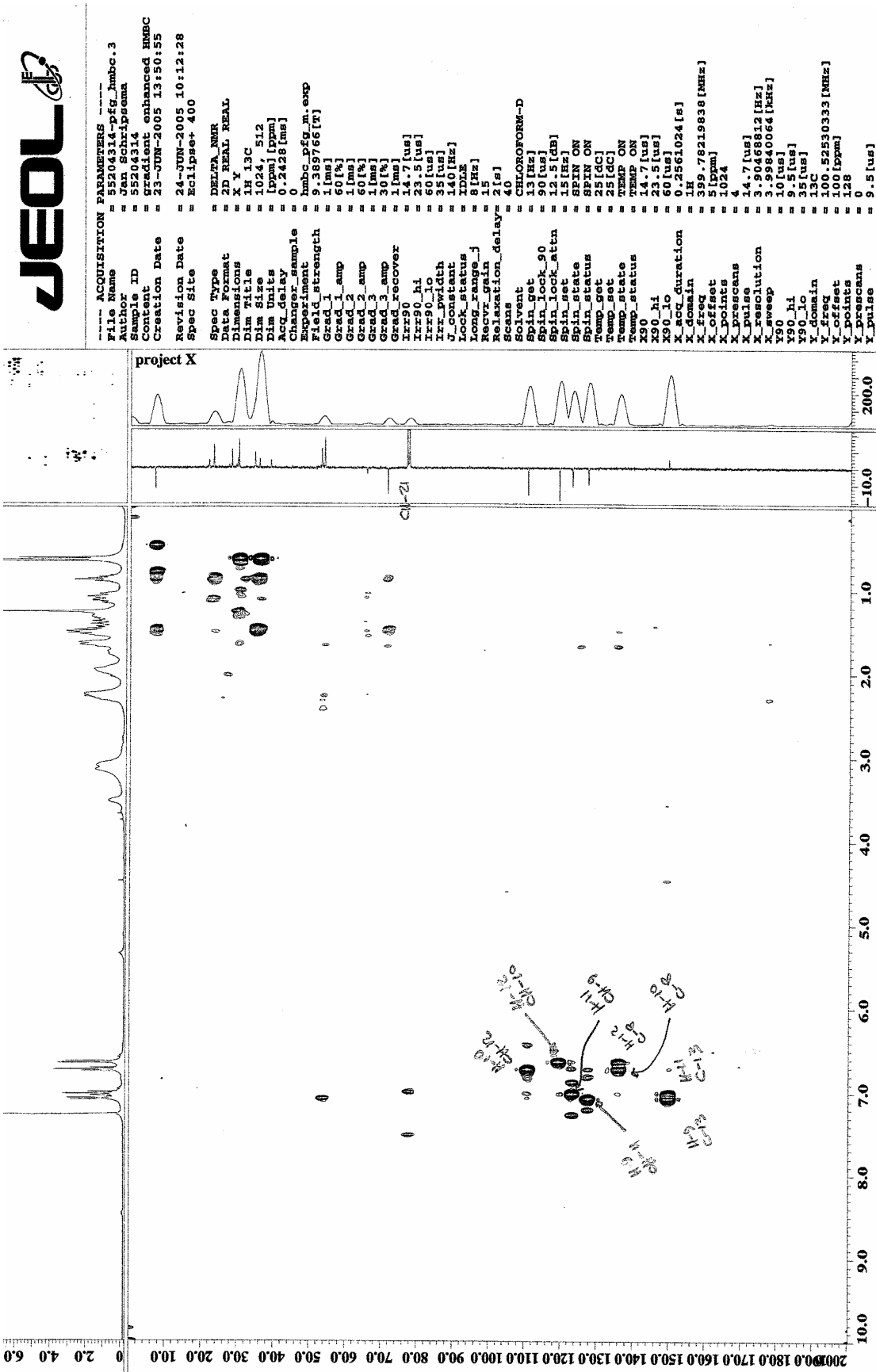
----- ACQUISITION PARAMETERS -----
File Name      = 52404314-ppg_hmqc.2
Attribute     = 52404314-ppema
Sample ID     = 52404314
Content       = gradient enhanced HMQC
Creation Date = 23-JUN-2005 17:04:56
Revision Date = 23-JUN-2005 19:05:21
Spec Site     = Eclipse+ 400

Spec Type     = DELTA_NMR
Data Format    = 2D REAL REAL
Dimensions    = X 13C
Dim Size      = 1024 256
Dim Units     = [ppm] [ppm]
Acq_delay     = 0.2428[ms]
Changer_sample = 0
Experiment     = hmqc_1rr_pfg_m.e
Field_strength = 9.389766[T]
Grad_1_amp    = 1[ms]
Grad_2_amp    = 60[%]
Grad_3_amp    = 60[%]
Grad_4_amp    = 60[%]
Grad_5_amp    = 60[%]
Grad_6_amp    = 60[%]
Grad_recover  = 0.2[ms]
Irr90_hi      = 14.7[us]
Irr90_lo      = 23.5[us]
Irr_90_width  = 60[us]
J_constant    = 35[us]
Lock_status   = 140[Hz]
Recvr_gain    = IDLE
Relaxation_delay = 15
Solvent       = CHLOROFORM-D
Spin_get      = 13[Hz]
Spin_lock_90  = 90[us]
Spin_lock_attn = 12.5[db]
Spin_set      = 15[Hz]
Spin_status   = SPIN ON
Temp_get      = 25[dc]
Temp_set      = TEMP ON
Temp_status   = TEMP ON
X90_hi        = 24.5[us]
X90_lo        = 60[us]
X_acq_duration = 0.2551024[s]
X_domain      = 399.78219838[MHz]
X_freq        = 51ppm
X_offset      = 1024
X_points      = 4
X_prescans    = 14.7[us]
X_resolution  = 3.90468812[Hz]
Y_sweep       = 3.99840064[kHz]
Y90_hi        = 9.5[us]
Y90_lo        = 35[us]
Y_domain      = 13C
Y_freq        = 100.52530333[MHz]
Y_offset      = 100[ppm]
Y_points      = 128
Y_prescans    = 0
Y_resolution  = 9.5[us]
               = 157.51008065[Hz]
    
```

Espectro 11. Ampliação do mapa de correlação heteronuclear HMQC em CDCl_3 do alcalóide (+)-aspidospermidina.



Espectro 12. Ampliação do mapa de correlação heteronuclear HMQC em CDCl_3 do alcalóide (+)-aspidospermidina.



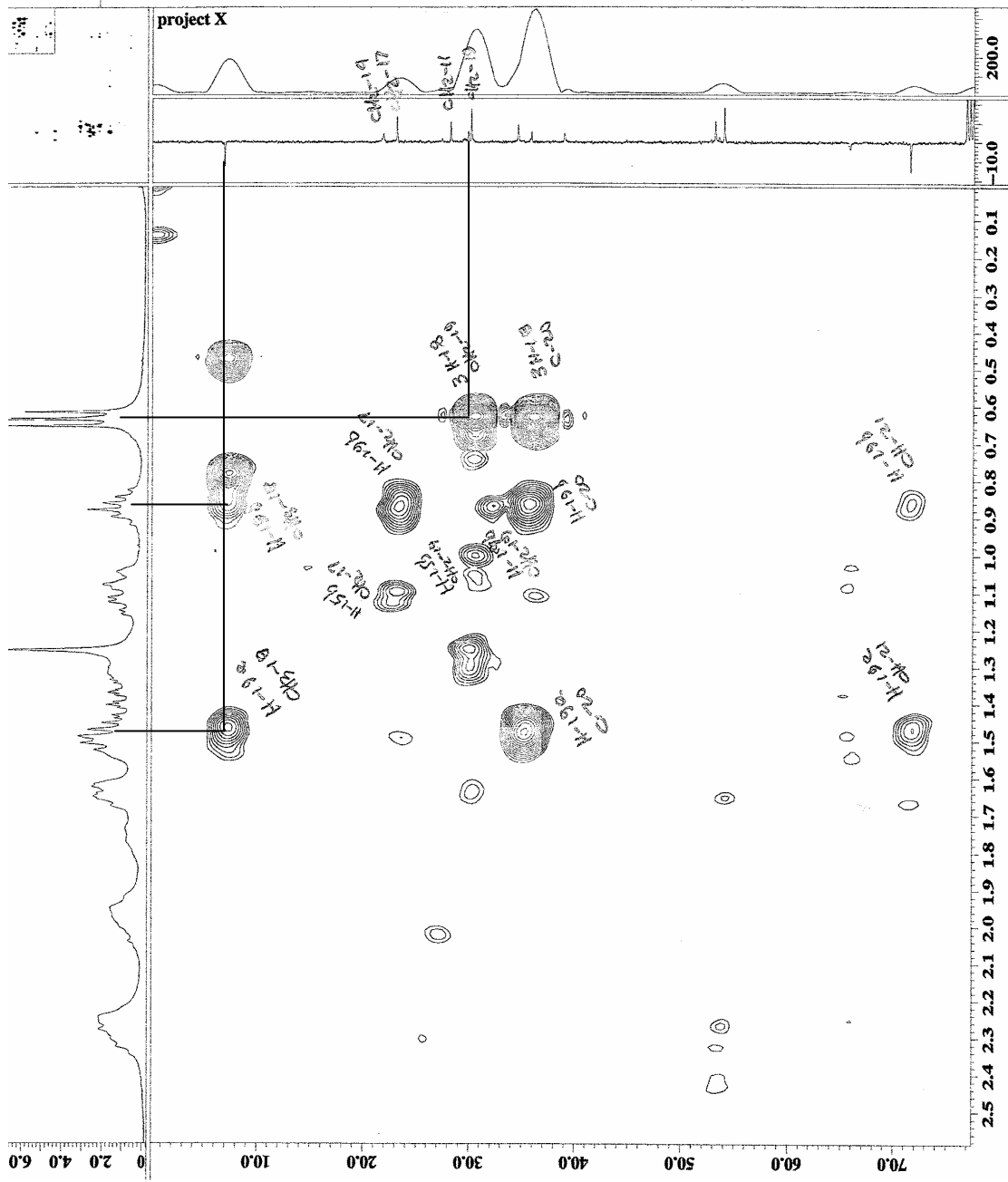
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----- ACQUISITION PARAMETERS -----
File Name      = 55204314-Pfg_hmbc.3
Author        = Jan Schripsema
Sample ID     = 55204314
Content       = gradient enhanced HMBc
Creation Date = 23-JUN-2005 13:50:55
Revision Date = 24-JUN-2005 10:12:28
Spec Site    = Eclipse 400

Spec Type = DELTA NMR
Data Format = 2D REAL REAL
Dimensions = X Y
Dim Title = 1H 13C
Dim Size = 1024, 512
Dim Units = [ppm],[ppm]
Acq_delay = 0.2428[ms]
changer_sample = 0
Sample_start = 9.389766[F]
Field_strength = 1[ms]
Grad_1_amp = 60[%]
Grad_2_amp = 1[ms]
Grad_3_amp = 60[%]
Grad_4_amp = 1[ms]
Grad_5_amp = 30[%]
Grad_recover = 1[ms]
Irr90_hi = 24.5[us]
Irr90_lo = 24.5[us]
Irr_width = 35[us]
J_constant = 140[Hz]
lock_status = IDLE
lock_range_j = 8[Hz]
recvr_gain = 15
relaxation_delay = 2[fs]
Scans = 40
ONOPFORM-D = 13[Hz]
Spin = 90[us]
Spin_lock_90 = 12.5[db]
Spin_lock_attn = 15[Hz]
Spin_set = SPIN ON
Spin_status = SPIN ON
Temp_set = 25[GC]
Temp_status = TEMP ON
Temp_on = 14.7[us]
X90_hi = 23.5[us]
X90_lo = 23.5[us]
X90_tc = 60[us]
X_acq_duration = 0.2561024[s]
X_domain = 1H
X_freq = 399.78219838[MHz]
X_offset = 5[ppm]
X_points = 1024
X_prescans = 4
X_pulse = 14.7[us]
X_resolution = 3.99840064[Hz]
X_sweep = 10[us]
Y90 = 9.5[us]
Y90_hi = 35[us]
Y90_lo = 13C
Y_domain = 100.52530333[MHz]
Y_offset = 100[ppm]
Y_points = 128
Y_scans = 9
Y_pulse = 9.5[us]

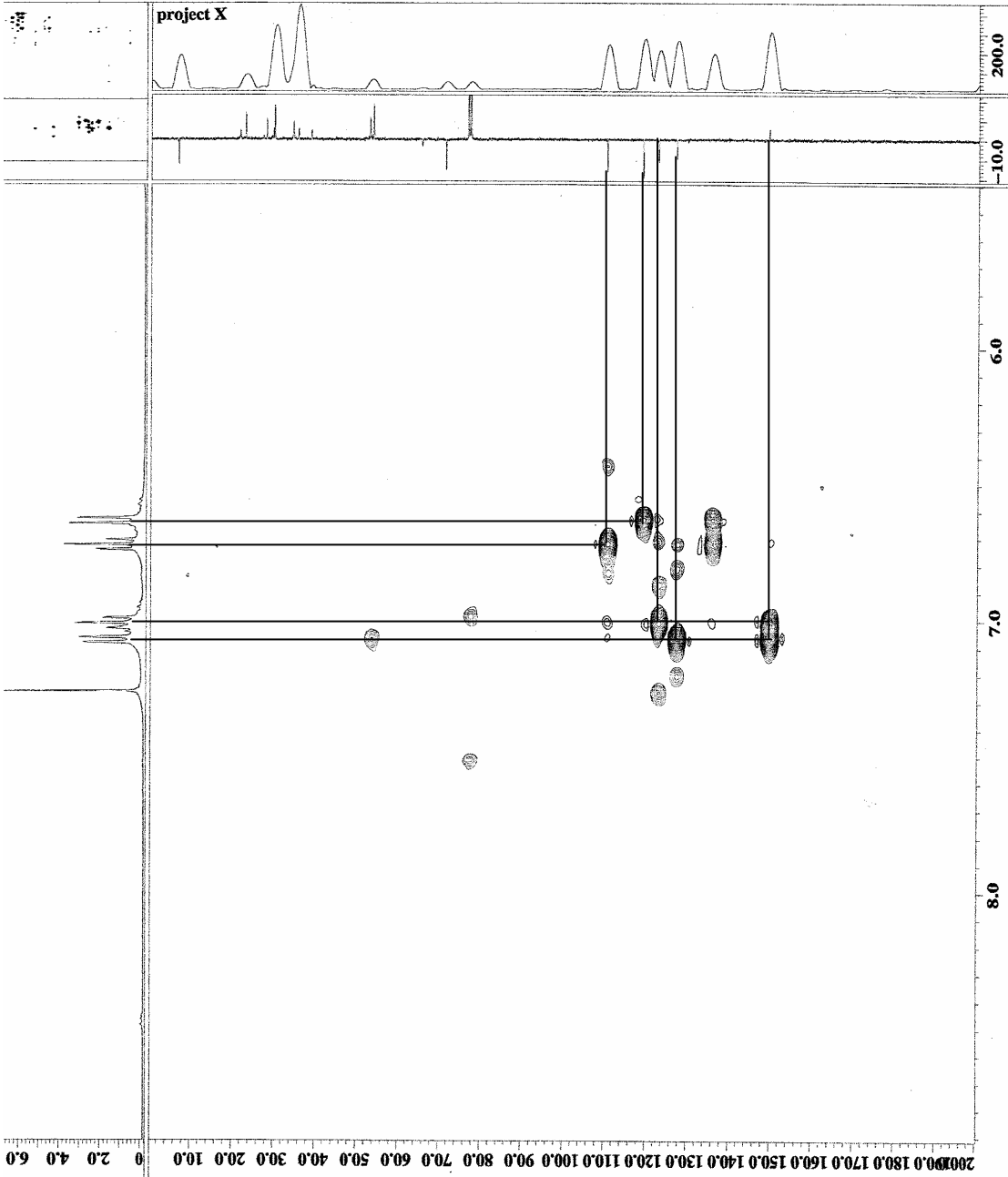
```

Espectro 13. Mapa de correlação heteronuclear HMBc em CDCl_3 do alcalóide (+)-aspidospermidina.



----- ACQUISITION PARAMETERS -----
File Name = 55204314-pfg_hmbc.3
Author = Jan Schripsema
Sample ID = 55204314
Content = Gradient enhanced HMB
Creation Date = 23-JUN-2005 13:50:55
Revision Date = 24-JUN-2005 10:12:28
Spec Sites = Eclipse 400
Spec Type = DELTA_NMR
Data Format = 2D REAL REAL
Dimensions = X Y
Dim Title = 1H 13C
Dim Size = 1024, 512
Dim Units = [ppm], [ppm]
Chemical Shift Reference = 0.2428 [ms]
Chemical Shift Reference = 0.2428 [ms]
Experiment = hmbc_pfg_m_exp
Field strength = 9.389766 [T]
Grad_1_strength = 1 [ms]
Grad_1_amp = 60 [%]
Grad_2_strength = 1 [ms]
Grad_2_amp = 60 [%]
Grad_3_strength = 1 [ms]
Grad_3_amp = 10 [%]
Grad_4_strength = 1 [ms]
Grad_4_amp = 10 [%]
Irr90_recovery = 14.7 [us]
Irr90_hi = 23.5 [us]
Irr90_lo = 60 [us]
Irr_width = 35 [us]
J_constant = 149 [Hz]
Lock_status = IDLE
Long_range_lock = 8 [Hz]
Recvr_gain = 15
Relaxation_delay = 40 [s]
Scans = CHLOROFORM-D
Solvent = CHLOROFORM-D
Spin_set = 13 [Hz]
Spin_lock_90 = 90 [us]
Spin_lock_attn = 12.5 [dB]
Spin_set = 15 [Hz]
Spin_status = SPIN ON
Temp_set = SPIN ON
Temp_status = SPIN ON
X90_hi = 14.7 [us]
X90_lo = 23.5 [us]
X_acq_duration = 0.2561024 [s]
X_domain = 1H
X_freq = 399.78219838 [MHz]
X_offset = 5 [ppm]
X_prescans = 4
X_pulse = 024
X_resolution = 14.7 [us]
X_sweep = 3.90468812 [Hz]
Y90 = 3.99840064 [kHz]
Y90_hi = 9.5 [us]
Y90_lo = 35 [us]
Y_domain = 13C
Y_freq = 52.52530333 [MHz]
Y_offset = 100 [ppm]
Y_prescans = 128
Y_points = 0
Y_pulse = 9.5 [us]
Y_resolution = 157.5 [ppm]

Espectro 14. Mapa de correlação heteronuclear HMBC em CDC₃ do alcalóide (+)-aspidospermidina.



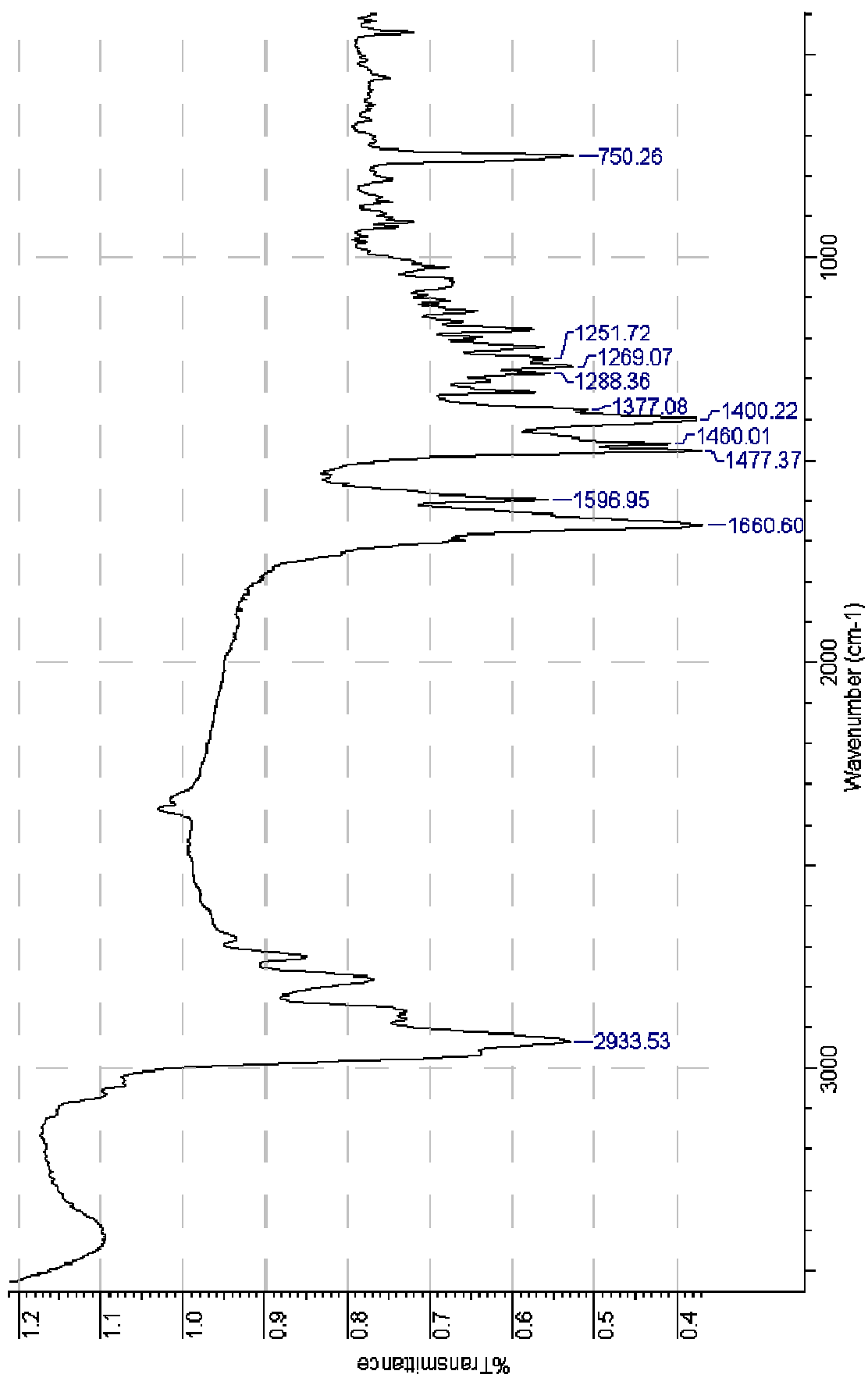
```

---- ACQUISITION PARAMETERS ----
File Name      = 55204314-pfg_hmbc.3
Author        = Jan Schripsema
Sample ID     = 55204314
Content       = gradient enhanced HMBC
Creation Date = 23-JUN-2005 13:50:55
Revision Date = 24-JUN-2005 10:12:28
Spec Site     = zclipset+ 400

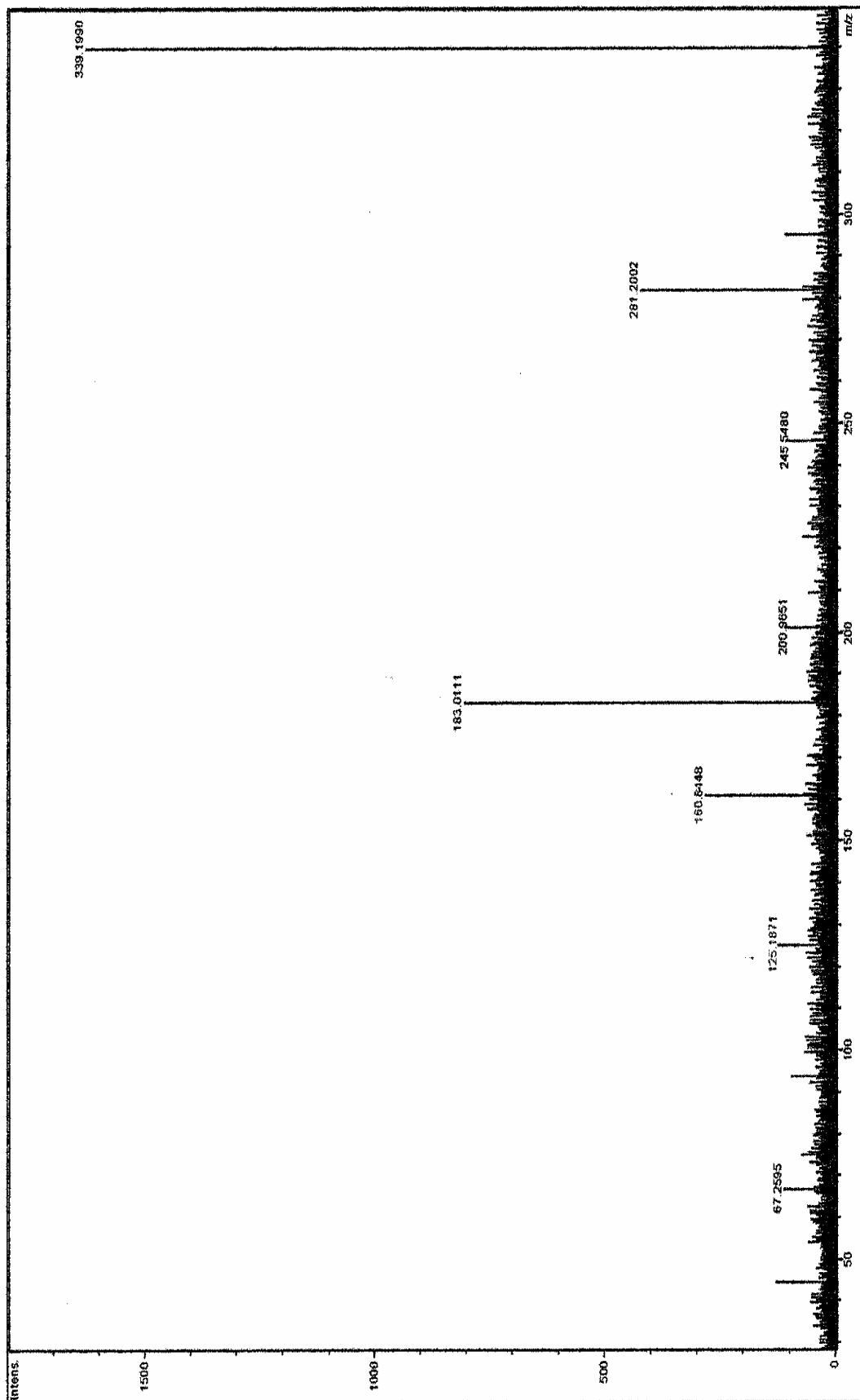
Spec Type     = DELTA NMR
Data Format    = 2D REAL REAL
Dimensions    = X Y
Dim Title     = 1H 13C
Dim Size      = 1024, 512
Dim Units     = [ppm] [ppm]
Acq_delay     = 0.2428 [ms]
Changer_sample = 0
Experiment     = hmbc_pfg_m_omp
P1            = 9.889766 [s]
P12           = 1 [ms]
Grad_1_amp    = 60 [%]
Grad_2_amp    = 60 [%]
Grad_3_amp    = 30 [%]
Grad_recover  = 1 [ms]
Irr90_h1     = 14.7 [us]
Irr90_h13    = 23.5 [us]
Irr90_h13    = 35 [us]
Irr_width     = 140 [Hz]
J_constant    = IDEX
Lock_status   = 8 [Hz]
Long_range_j  = 15
Recvr_gain    = Relaxation_delay= 2 [s]
Scans         = 40
Solvent       = CHLOROFORM-D
Spin_lock_90  = 90 [Hz]
Spin_lock_attn = 12.5 [dB]
Spin_set      = 15 [Hz]
Spin_status   = SPIN ON
Temp_get      = 25 [dC]
Temp_set      = TEMP ON
Temp_status   = TEMP ON
X90_h1        = 23.5 [us]
X90_h13       = 60 [us]
X90_lo        = 0.2561024 [s]
X_domain      = 1H
X_freq        = 399.78219838 [MHz]
X_offset      = 5 [ppm]
X_points      = 1024
X_prescans    = 4
X_pulse       = 14.7 [us]
X_resolution  = 3.9488812 [Hz]
X_sweep       = 10 [us]
Y90_h1        = 9.5 [us]
Y90_lo        = 35 [us]
Y_domain      = 13C
Y_freq        = 100.52530333 [MHz]
Y_offset      = 100 [ppm]
Y_points      = 128
Y_prescans    = 0
Y_pulse       = 9.5 [us]

```

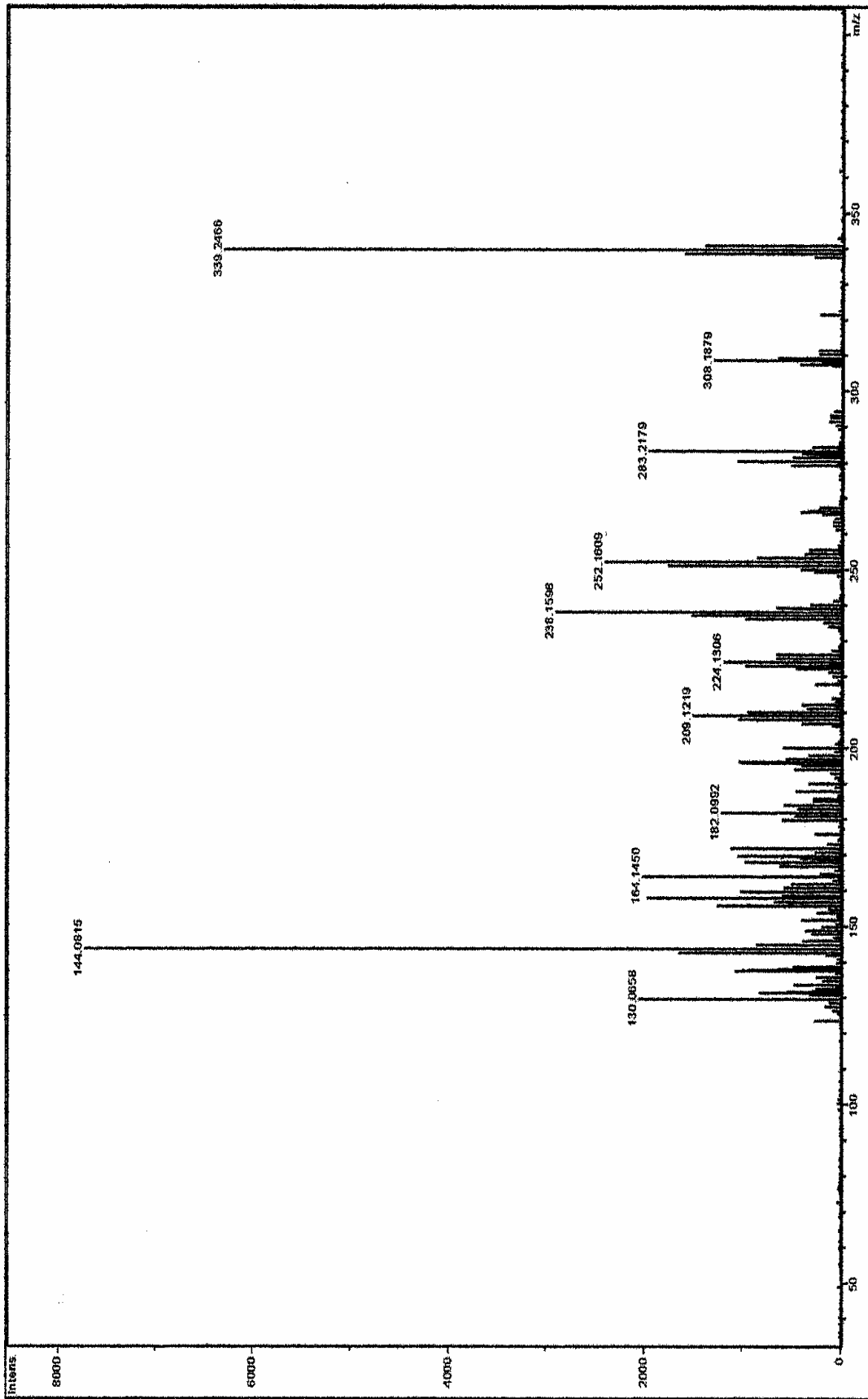
Espectro 15. Mapa de correlação heteronuclear HMC em CDCl₃ do alcalóide (+)-aspidospermidina.



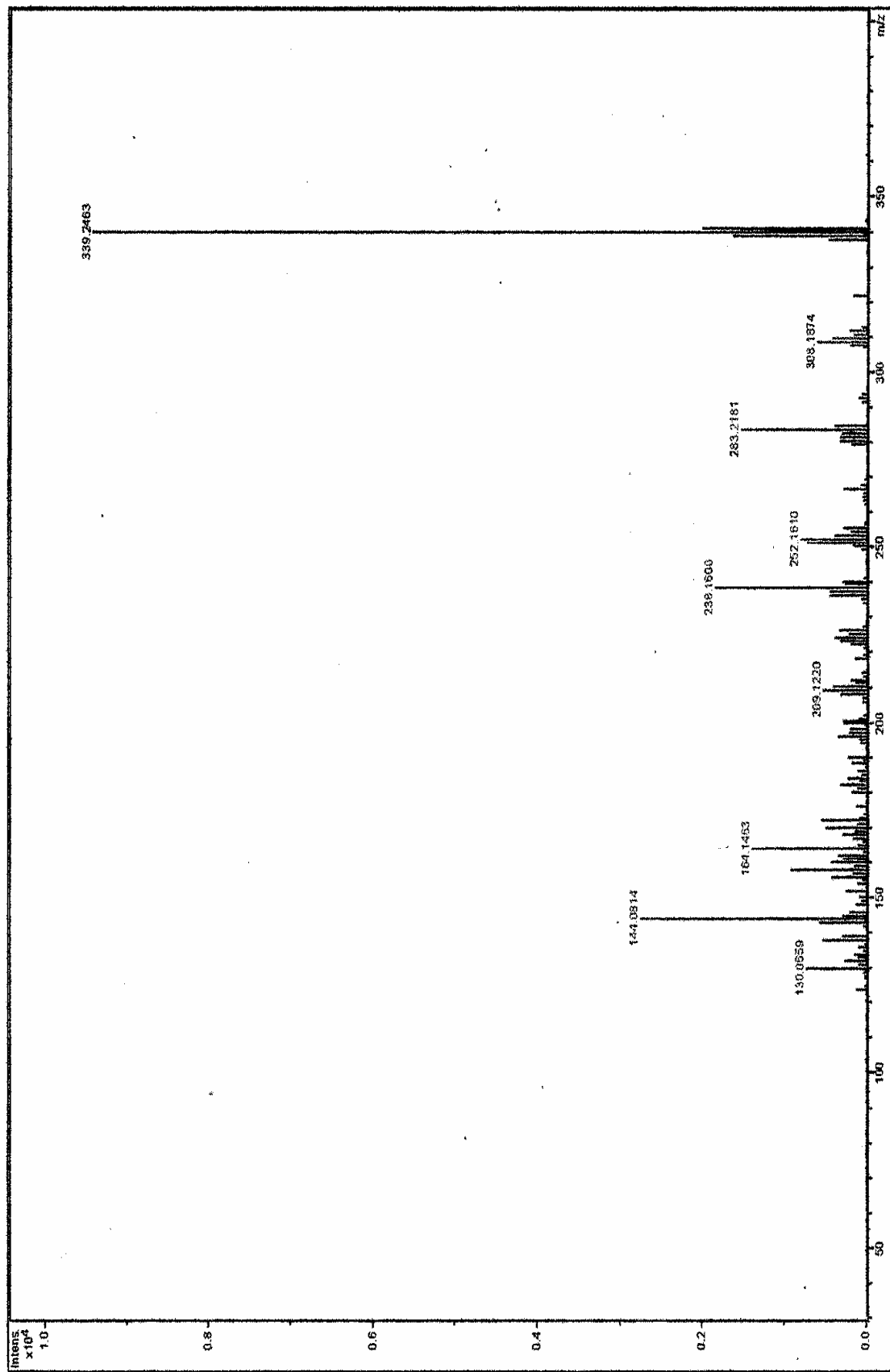
Espectro 16. Espectro de Infra vermelho do alcalóide (-)-desmetoxipalossina.



Espectro 17. . Espectro de massas do alcalóide (-)-desmetoxipalossina.



Espectro 18. Espectro de massas do alcalóide (-)-desmetoxipalossina.



Espectro 19. Espectro de massas do alcalóide (-)-desmetoxipalossina.



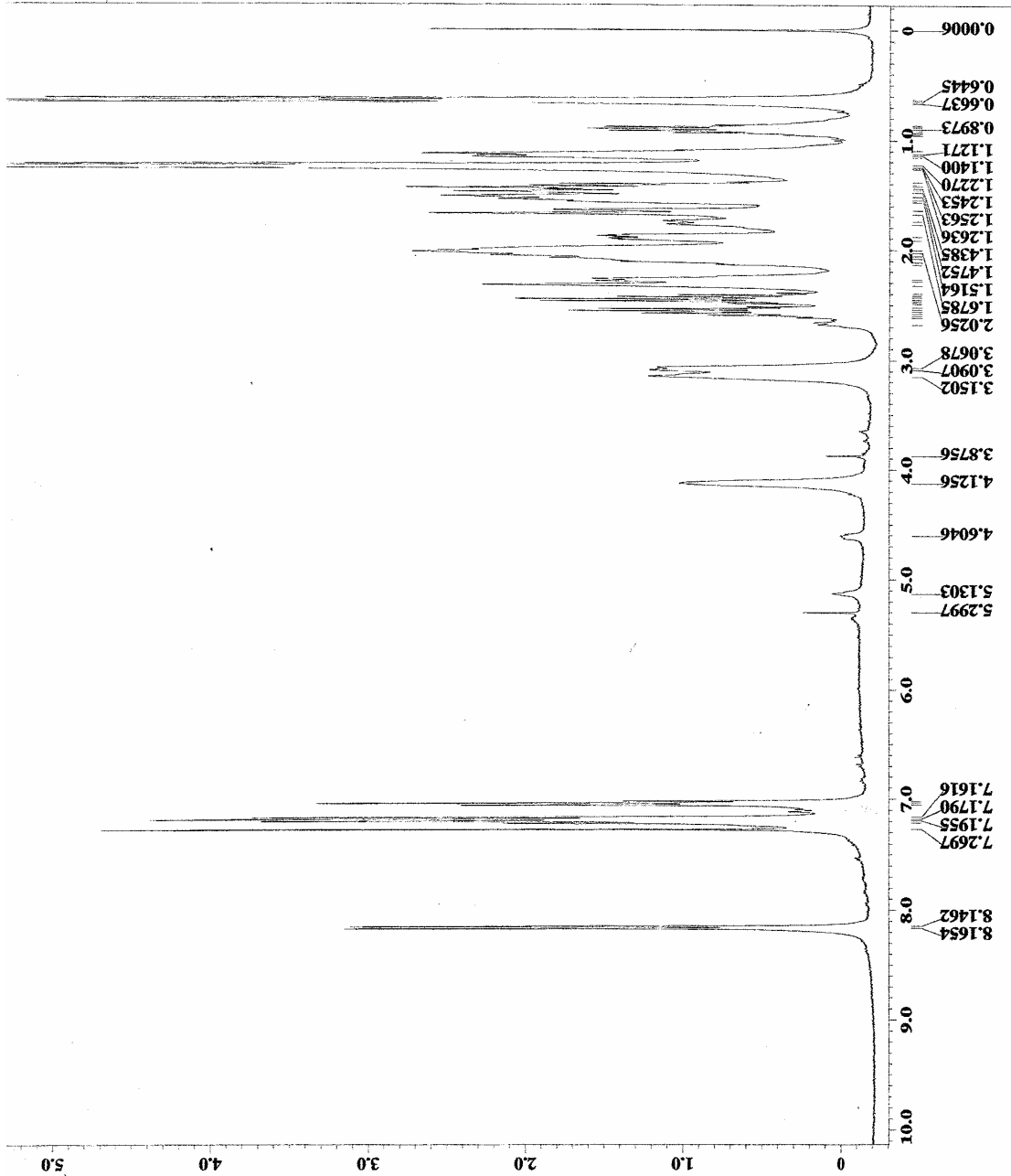
```

----- ACQUISITION PARAMETERS -----
File Name      = 46125-1d_spectrum.6
Author        = Jan Schripsema
Compas ID     = 46125
Sample        = Single Pulse Experiment
Creation Date  = 4-MAY-2005 07:38:02

Revision Date = 4-MAY-2005 11:36:21
Spec Site     = Eclipse+ 400

Spec Type     = DELTA_NMR
Data Format    = ID COMPLEX
Dimensions    = X
Dim Site     = X
Dim Units    = 16384
Acq_delay    = 0.1631[ms]
Changer_sample = single_pulse.exp
Experiment    = 9.389766[LT]
Field_strength = 14.7[Tes]
Irr90_hi     = 23.5[us]
Irr90_lo     = 60[us]
Irr90_width  = 10[us]
Lock_status   = YDMS
Recvr_gain    = 15
Relaxation_delay = 4[s]
Scans         = 8

Solvent       = CHLOROFORM-D
Spin_get      = 15[KHz]
Spin_lock_90  = 90[us]
Spin_lock_atn = 12.5[dB]
Spin_set      = 15[KHz]
Spin_on       = 15[KHz]
Spin_off      = 15[KHz]
Spin_status   = 25[DCI]
Temp_get      = TEMP ON
Temp_set      = TEMP ON
Temp_status   = 14.7[Tes]
X90_hi       = 23.5[us]
X90_lo       = 60[us]
X_acq_duration = 14.732128[s]
X_acq_atn    = 15[KHz]
X_freq       = 399.78219838[MHz]
X_offset     = 7[ppm]
X_points     = 16384
X_prescans   = 0
X_pulse      = 7.35[us]
X_resolution = 0.3661371[Hz]
X_sweep      = 5.99880024[Hz]
  
```

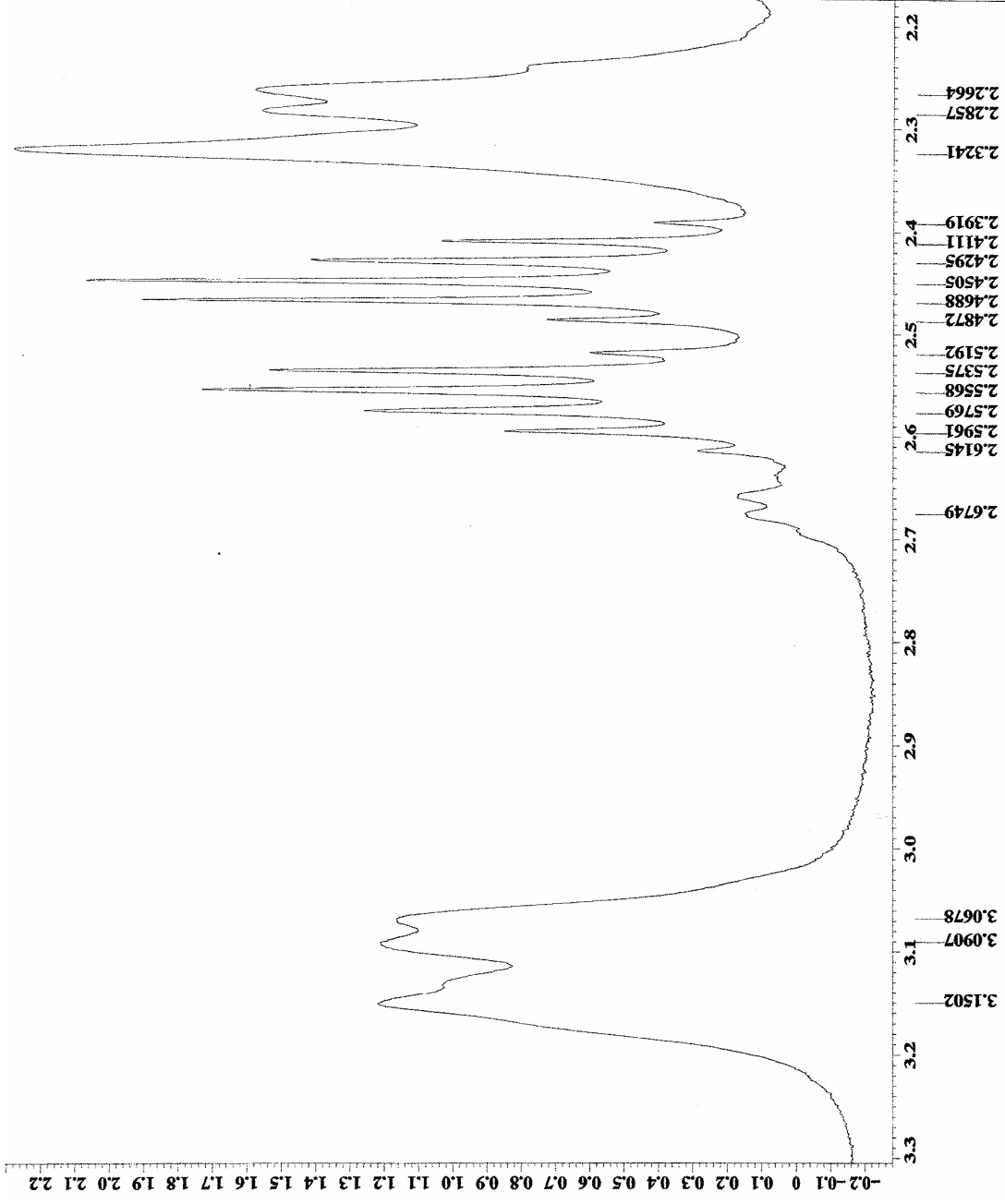


Espectro 20. Espectro de RMN ¹H (400 MHz) em CDCl₃ do alcalóide (-)-desmetoxipalolina.

```

--- ACQUISITION PARAMETERS ---
File Name      = 4c125-jd_spectrum.6
File Path     = 4c125
Sample ID     = 4c125-chrapsma
Content       = Single Pulse Experiment
Creation Date = 4-MAY-2005 07:38:02
Revision Date = 4-MAY-2005 11:36:21
Spec Site    = Eclipse+ 400

Spec Type    = DELTA_NMR
Data Format  = ID COMPLEX
Dim Units   = 1H
Dim Size    = 16384
Dim Units   = [ppm]
Acq_delay   = 0.1631 [ms]
Changer_sample = single_pulse.exp
Experiment  = 9.399766 [T]
Field_strength = 14.7 [us]
Irr90_hl    = 23.5 [us]
Irr90_wl    = 60 [us]
Irr_width   = IDLE
Lock_status = 15
Recvr_gain  = 15
Relaxation_delay = 4 [s]
Scans       = 8
Solvent     = CHLOROFORM-D
Spin_get    = 15 [Hz]
Spin_lock_90 = 70 [us]
Spin_lock_k_atn = 15 [Hz]
Spin_set_k_atn = 15 [Hz]
Spin_status = SPIN ON
Spin_status = SPIN ON
Temp_get    = 25 [dC]
Temp_set    = TEMP ON
Temp_status = 14.7 [us]
X30_hl     = 63.5 [us]
X30_wl     = 2.7312128 [s]
X_acq_duration = 1H
X_domain    = 399.78219838 [MHz]
X_freq     = 7 [ppm]
X_offset   = 16384
X_points   = 0
X_prescans = 0
X_pulse    = 7.35 [us]
X_resolution = 0.36613771 [Hz]
X_sweep    = 5.99800024 [kHz]
  
```



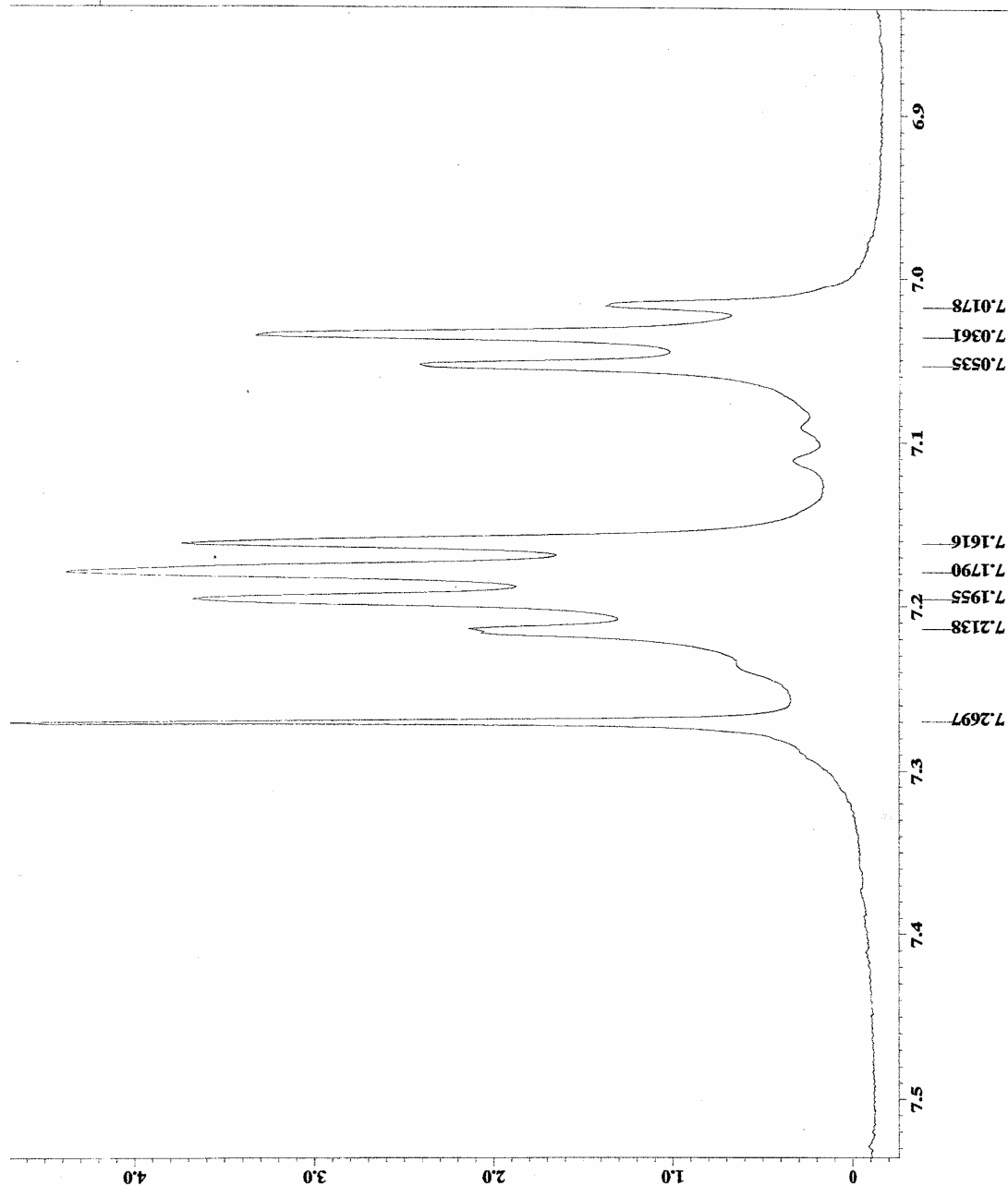
Espectro 21. Ampliação da região de δ_H 2,2-3,3 do espectro de RMN 1H (400 MHz) em $CDCl_3$ do alcalóide (-)-desmetoxipalossina.

```

----- ACQUISITION PARAMETERS -----
File Name      = 46125-id_spectrum.6
Author        = Jan Schripsema
Sample ID     = 46125
Content       = Single Pulse Experiment
Creation Date = 4-MAY-2005 07:38:02

Revision Date = 4-MAY-2005 11:36:21
Spec Site     = Eclipse+ 400

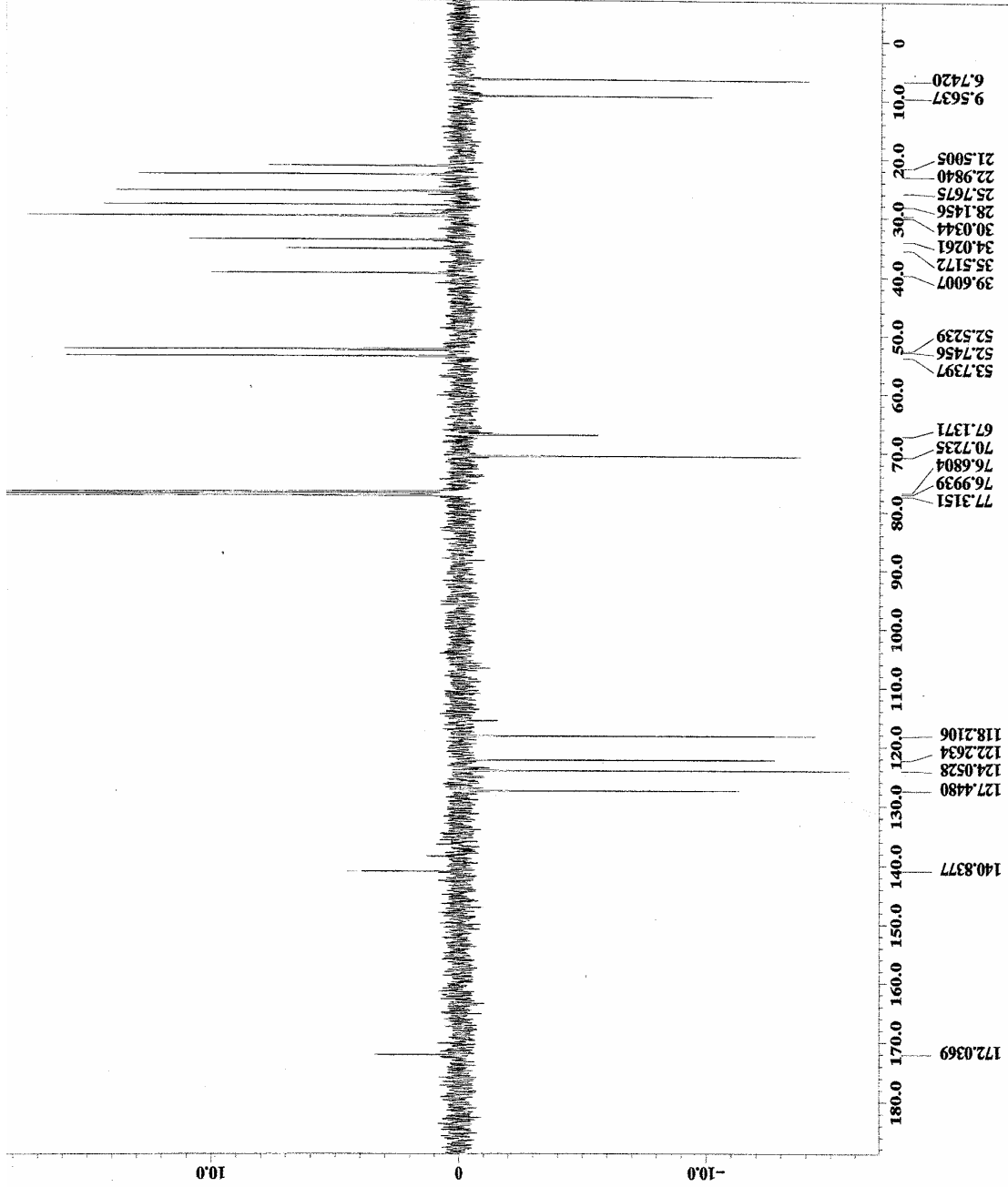
Spec Type     = DELTA NMR
Data Format    = 1D COMPLEX
Dimensions    = X
Dim Title     = 1H
Dim Size      = 16384
Dim Units     = [ppm]
Acq_delay     = 0.1631[ms]
Charger_sample = single_pulse.exp
Experiment    = 9.389756[T]
Field_strength = 14.7[Tes]
Irr90_hi     = 23.5[us]
Irr90_lo     = 60[us]
Irr_width    = 60[us]
lock_status  = IDLE
Recvr_gain   = 15
Relaxation_delay = 4[us]
Scans        = 8
SOLVENT      = MCDORFORM-D
Spin_ret     = 15[Hz]
Spin_lock_90 = 90[us]
Spin_lock_attn = 12.5[db]
Spin_set     = 15[Hz]
Spin_status  = SPIN ON
Temp_get     = 25[degC]
Temp_set     = 25[degC]
Temp_status  = TEMP ON
X90_hi      = 14.7[us]
X90_lo      = 23.5[us]
X90_tc      = 60[us]
X_acq_duration = 2.7312128[us]
X_domain     = 1H
X_freq       = 399.78219838[MHz]
X_offset     = 16384
X_points     = 0
X_prescans   = 0
X_pulse      = 7.35[us]
X_resolution = 0.861371[Hz]
X_sweep      = 3.9980024[MHz]
  
```



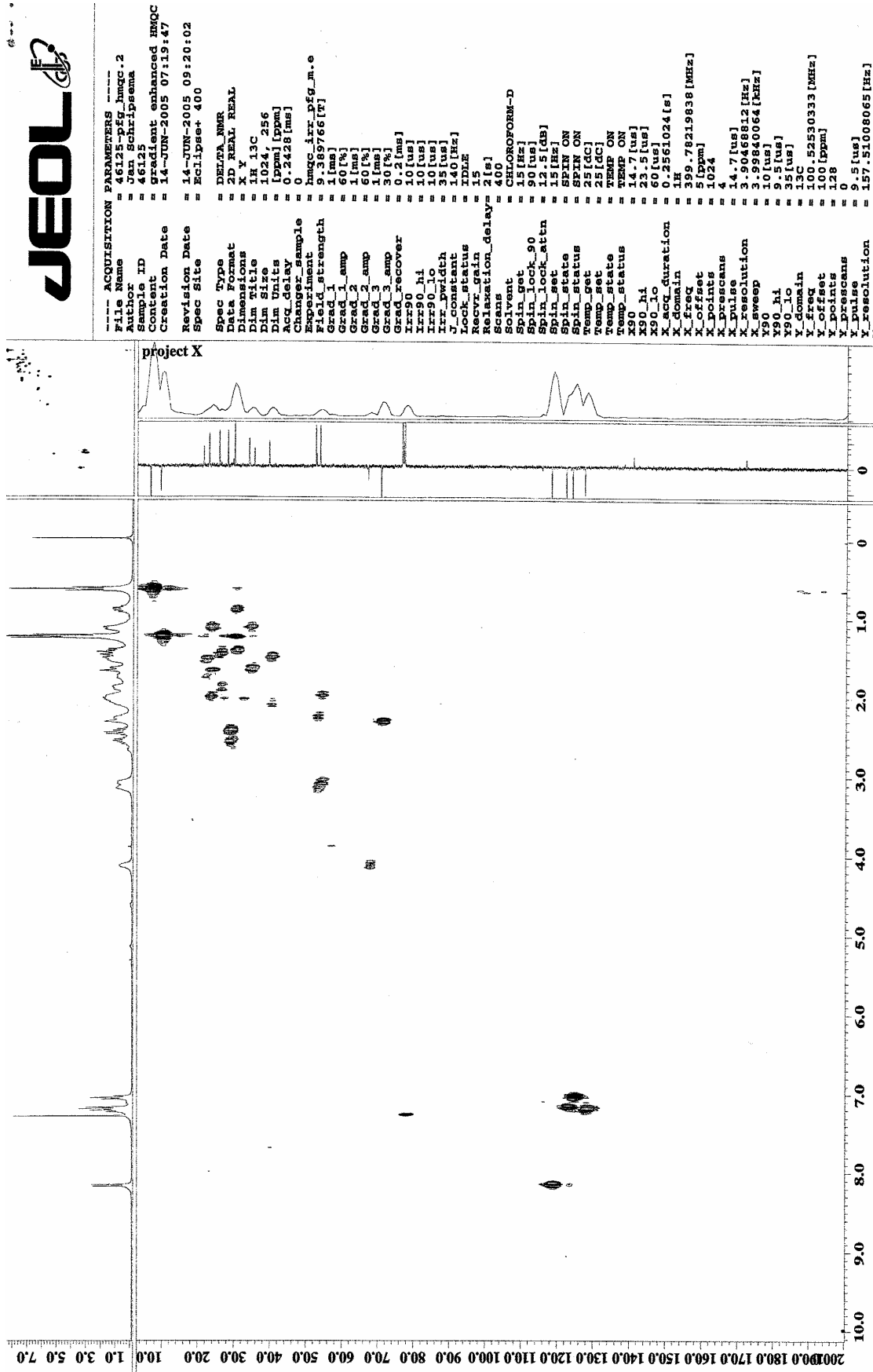
Espectro 22. Ampliação da região de δ_H 6,9-7,7 do espectro de RMN 1H (400 MHz) em $CDCl_3$ do alcalóide (-)-desmetotipalosina.



----- ACQUISITION PARAMETERS -----
File Name = 46125-apt.4
Author = Jan Schripsema
Sample ID = 46125
Content = Apt Experiment
Creation Date = 4-MAY-2005 08:33:53
Revision Date = 4-MAY-2005 11:45:45
Spec Site = Eclipse 400
Spec Type = DELTA_NMR
Data Format = ID COMPLEX
Dimensions = X
Dim Size = 13C68
Dim Units = 12768
Acq delay = 38.7[us]
Changer_sample = 0
Experiment = apt.exp
Field_strength = 9.389766[T]
Irr90_hi = 14.7[us]
Irr90_lo = 23.5[us]
Irr90_width = 60[us]
J_constant = 140[Hz]
Lock_status = IDLE
Recvz_gain = 15
Relaxation_delay = 1[s]
Scans = 1359
Solvent = CHLOROFORM-D
Spin_get = 15[Hz]
Spin_lock_90 = 12.5[us]
Spin_lock_attn = 12.5[us]
Spin_set = 15[Hz]
Spin_status = SPIN ON
Temp_set = 25[dc]
Temp_status = 25[dc]
X90_hi = 10[us]
X90_lo = 9.5[us]
X90_width = 35[us]
X_acq_duration = 1.3008896[s]
X_domain = 13C
X_freq = 100.52530333[MHz]
X_offset = 100[ppm]
X_points = 32768
X_prescans = 4[us]
X_resolution = 0.756870474[Hz]
X_sweep = 25.18891688[MHz]



Espectro de RMN ¹³C (100 MHz-APT) em CDCl₃ do alcalóide (-)-desmetoxipalossina.



JEOL

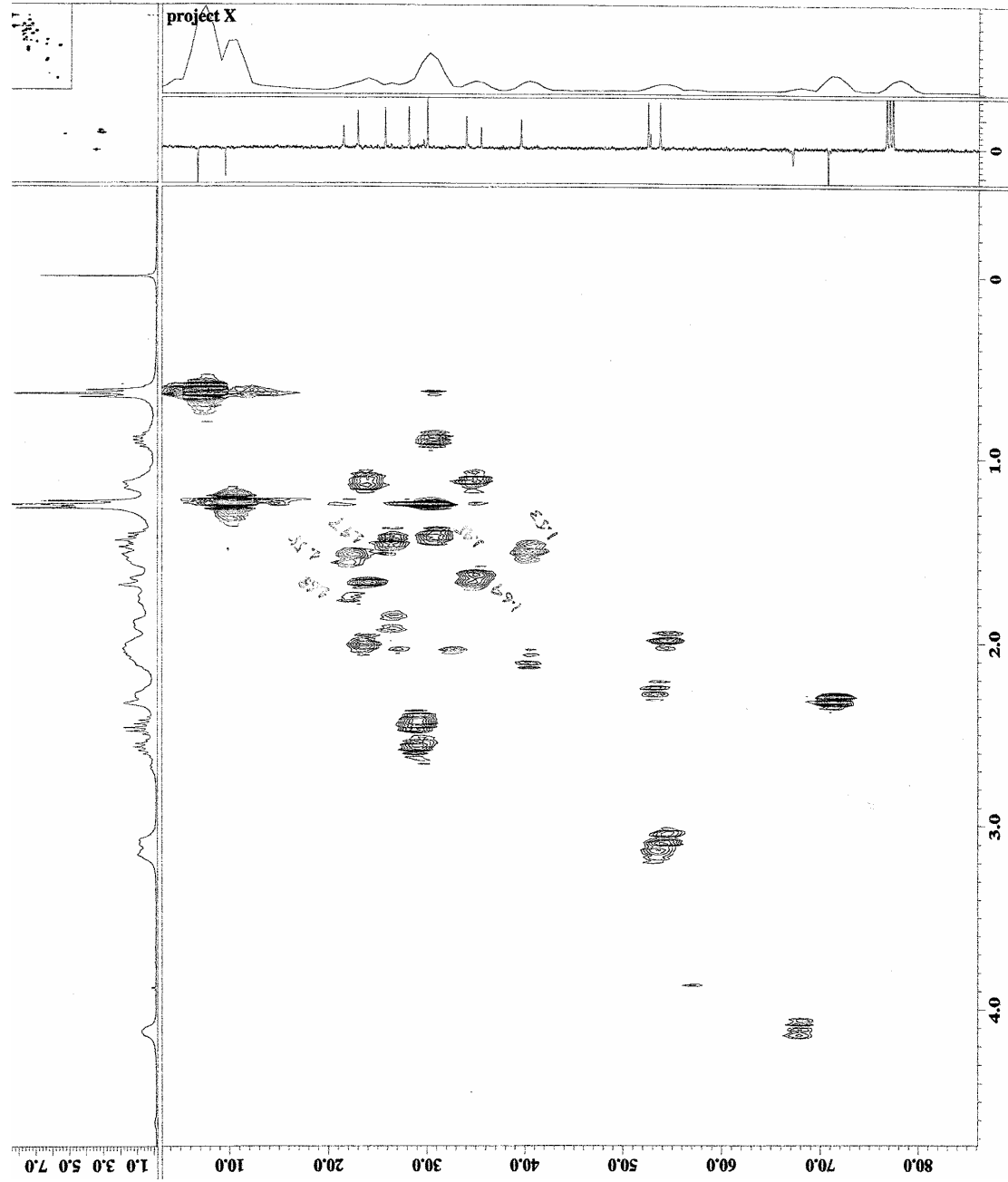
```

---- ACQUISITION PARAMETERS ----
File Name      = 46125-pfg_hmqc.2
Author         = Jan Schripsema
Sample ID      = 46125
Experiment     = Gradient enhanced HMQC
Creation Date  = 14-JUN-2005 07:19:47
Revision Date  = 14-JUN-2005 09:20:02
Spec Site      = Eclipse+ 400

Spec Type      = DELTA_NMR
Data Format     = 2D REAL REAL
Dimensions     = X Y
P1             = 16.13
P2             = 16.24
P3             = 256
Dim X1         = 1924 [pts]
Dim X2         = 0.2428 [ms]
Acq_delay      = 0
Changer_sample = hmqc_irr_pfg_m.e
Experiment     = 9.389766 [T]
Field_strength = 1 [ms]
Grad_1_amp     = 60 [%]
Grad_2_amp     = 0 [%]
Grad_3_amp     = 1 [%]
Grad_recovery = 30 [%]
Irr90          = 0.2 [ms]
Irr90_hi      = 10 [us]
Irr90_lo      = 10 [us]
Irr_width      = 35 [us]
J_constant     = 140 [Hz]
Lock_status    = TRUE
Relaxation_delay = 15 [s]
Relaxation_delay_2 [s]
Scans          = 400
Solvent        = CHLOROFORM-D
Spin_get       = 15 [Hz]
Spin_lock_90  = 90 [us]
Spin_lock_attn = 12.5 [dB]
Spin_set       = 15 [Hz]
Spin_status    = SPIN ON
Spin_status    = 25 [dC]
Temp_set       = 25 [dC]
Temp_status    = TEMP ON
Temp_status    = TEMP ON
X90            = 14.7 [us]
X90_lo        = 23.5 [us]
X90_hi        = 60 [us]
X_acq_duration = 0.2561024 [s]
X_domain       = 19.78219838 [MHz]
X_offset       = 5 [ppm]
X_points       = 1024
X_prescans     = 4
X_pulse        = 14.7 [us]
X_resolution   = 3.90468812 [Hz]
X_sweep        = 3.99840064 [kHz]
Y90            = 10 [us]
Y90_lo        = 9.5 [us]
Y90_hi        = 13 [us]
Y_domain       = 100
Y_freq         = 100.52530333 [MHz]
Y_offset       = 100 [ppm]
Y_points       = 128
Y_prescans     = 0
Y_pulse        = 9.5 [us]
Y_resolution   = 157.51008065 [Hz]

```

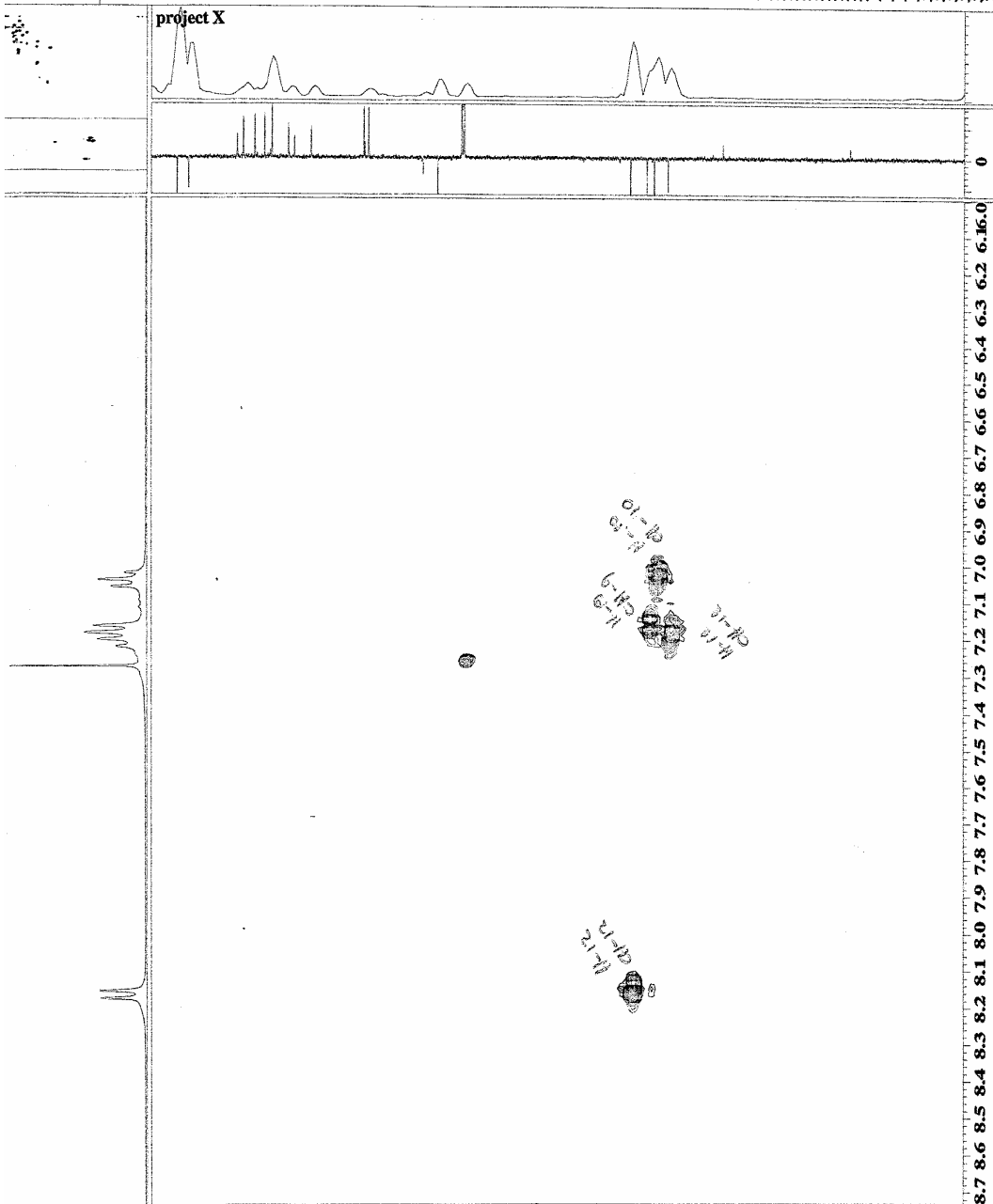
Espectro 24. Mapa de correlação heteronuclear HMQC em CDCl_3 do álcool (-)-desmetoxipalolina.



----- ACQUISITION PARAMETERS -----
File Name = 46125-pfg_hmqc-2
Author = J. Schripsema
Content = gradient enhanced HMQC
Creation Date = 14-JUN-2005 07:19:47
Revision Date = 14-JUN-2005 09:20:02
Spec Site = Eclipse+ 400
Spec Type = DELTA_NMR
Data Format = 2D REAL REAL
Pulse Program = h1_13c
Dim Title = 1024_256
Dim Size = [ppm] [ppm]
Acq_delay = 0.2428 [ms]
Changer_sample = hmqc_irr_pfg_m_e
Experiment = 9.389766 [T]
Field_strength = 1 [ms]
Grad_1_amp = 10 [%]
Grad_2_amp = 60 [%]
Grad_3_amp = 1 [ms]
Grad_3_amp = 30 [%]
Grad_recover = 0.2 [ms]
Irr90 = 10 [us]
Irr90_lo = 10 [us]
Irr90_hi = 10 [us]
X_resolution = 15 [us]
Lock_status = 10 [Hz]
Recvr_gain = 15
Relaxation_delay = 2 [s]
Scans = 400
Solvent = CHLOROFORM-D
Spin_get = 15 [Hz]
Spin_lock_90 = 90 [us]
Spin_lock_atn = 12.5 [dB]
Spin_lock = 10 [us]
Spin_status = SPIN ON
Temp_get = 25 [dC]
Temp_set = 25 [dC]
Temp_status = TEMP ON
X90_lo = 14.7 [us]
X90_hi = 23.5 [us]
X_acq_duration = 0.2561024 [s]
X_domain = 1H
X_freq = 399.78219838 [MHz]
X_offset = 5 [ppm]
X_points = 1024
X_resolution = 4
Y_domain = 14.7 [us]
Y_offset = 3.90468812 [Hz]
Y_points = 3.92840064 [kHz]
Y_resolution = 9.5 [us]
Y90_lo = 35 [us]
Y90_hi = 13C
Y_domain = 100.52530333 [MHz]
Y_freq = 100 [ppm]
Y_offset = 128
Y_points = 0
Y_resolution = 157.5 [us]
Y90_lo = 10.000000 [us]
Y90_hi = 10.000000 [us]

Espectro 25. Ampliação do mapa de correlação heteronuclear HMQC em CDCl₃ do alcalóide (-)-desmetoxipalósina.

200 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0

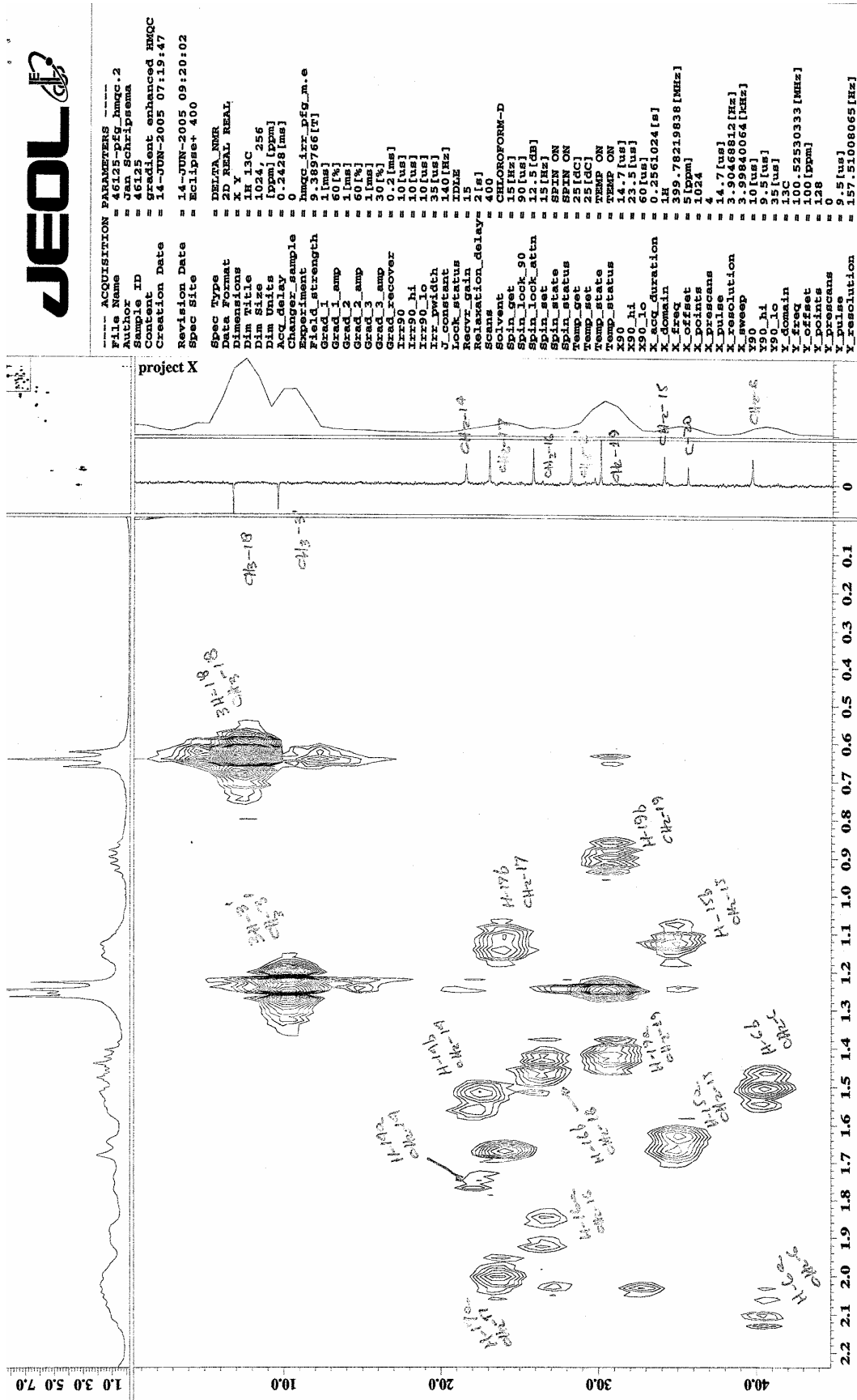


```

---- ACQUISITION PARAMETERS ----
File Name      = 46125-Pfg_hmqc.2
Author        = Jan Schrippsema
Sample ID     = 46125
Content       = gradient enhanced HMQC
Creation Date = 14-JUN-2005 07:19:47
Revision Date = 14-JUN-2005 09:20:02
Spec Site    = Eclipse+ 400

Spec Type      = DELTA_NMR
Data Format    = 2D REAL REAL
Dimension1    = 1H 13C
Dimension2    = 1H 13C
Dim1 Size     = 1024 256
Dim2 Size     = [ppm] [ppm]
Acq_delay     = 0.2428 [ms]
Changer_sample = 0
Experiment    = hmqc_1rr_pfg_m.e
Pulse_prog   = 1.389766 [T]
Relaxation_delay = 60 [ms]
Grad_1_amp   = 1 [ms]
Grad_2_amp   = 60 [%]
Grad_3_amp   = 1 [ms]
Irr90_recover = 30 [%]
Irr90_hi     = 10 [ms]
Irr90_lo     = 10 [ms]
Irr_width    = 10 [us]
J_constant   = 35 [us]
Lock_status  = 140 [Hz]
Relaxation_delay = 2 [s]
Scans        = 400
Solvent      = CHLOROFORM-D
Spin_lock_90 = 15 [Hz]
Spin_lock_atn = 90 [us]
Spin_lock_atn = 12.5 [dB]
Spin_lock_atn = 10 [us]
Spin_status  = SPIN ON
Temp_set     = 25 [degC]
Temp_status  = TEMP ON
X90_hi      = 21.5 [us]
X90_lo      = 60 [us]
X_acq_duration = 0.2561024 [s]
X_domain    = 1H
X_freq      = 399.78219838 [MHz]
X_offset    = 5 [ppm]
X_p1        = 1024
X_p2        = 1024
X_p3        = 1024
X_pulse     = 14.7 [us]
X_resolution = 3.90468812 [Hz]
X_sweep     = 3.99840064 [kHz]
Y90_hi     = 10 [us]
Y90_lo     = 9.5 [us]
Y_domain   = 13 [us]
Y_freq     = 100.52530333 [MHz]
Y_offset   = 100 [ppm]
Y_points   = 128
Y_prescans = 0
Y_p1       = 5 [us]
Y_p2       = 157 [us]
Y_p3       = 1008065 [Hz]
  
```

Espectro 26. Ampliação do mapa de correlação heteronuclear HMQC em CDCl₃ do alcalóide (-)-desmetoxipallosina.

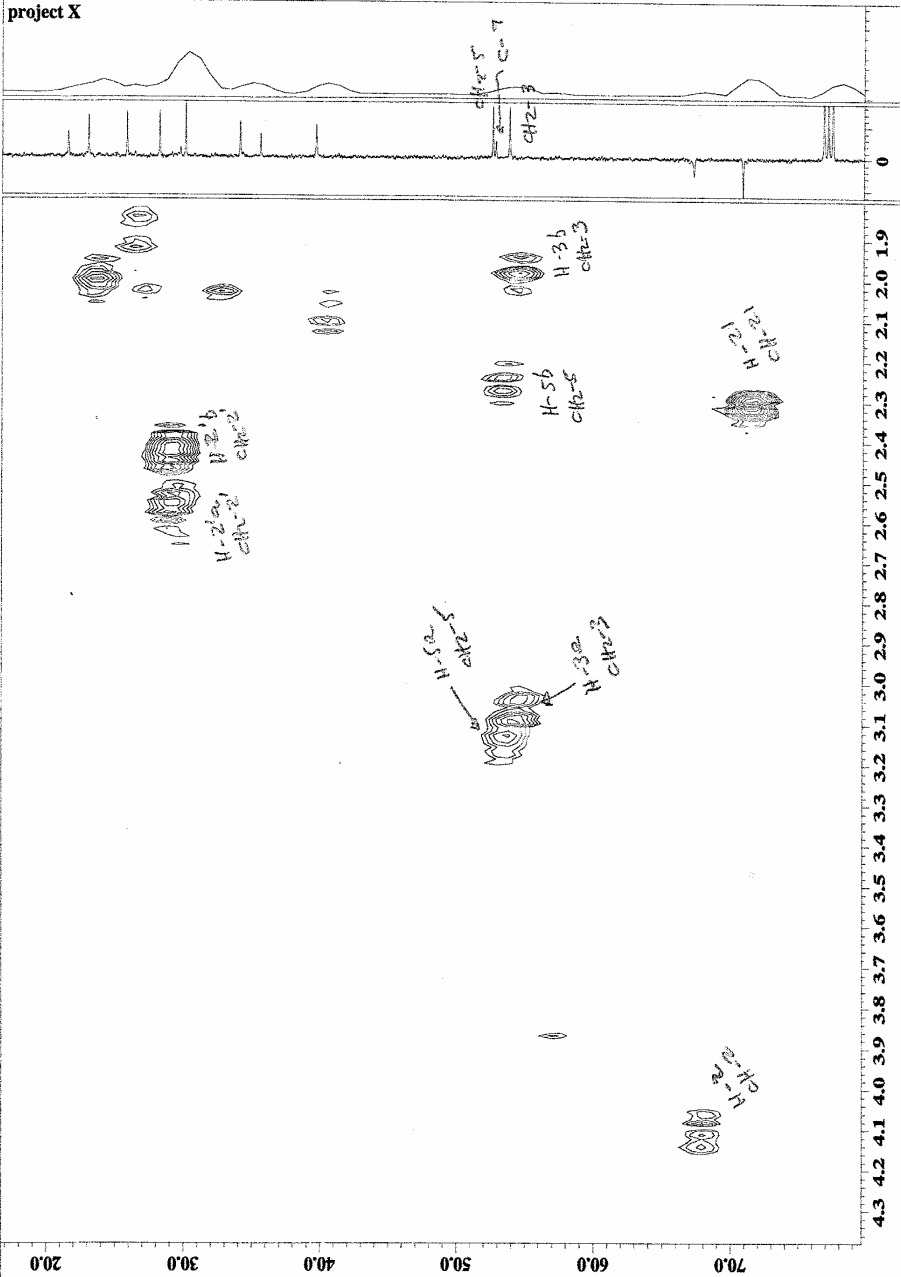


Espectro 27. Ampliação do mapa de correlação heteronuclear HMQC em CDCl₃ do alcalóide (-)-desmetoxipalossina.

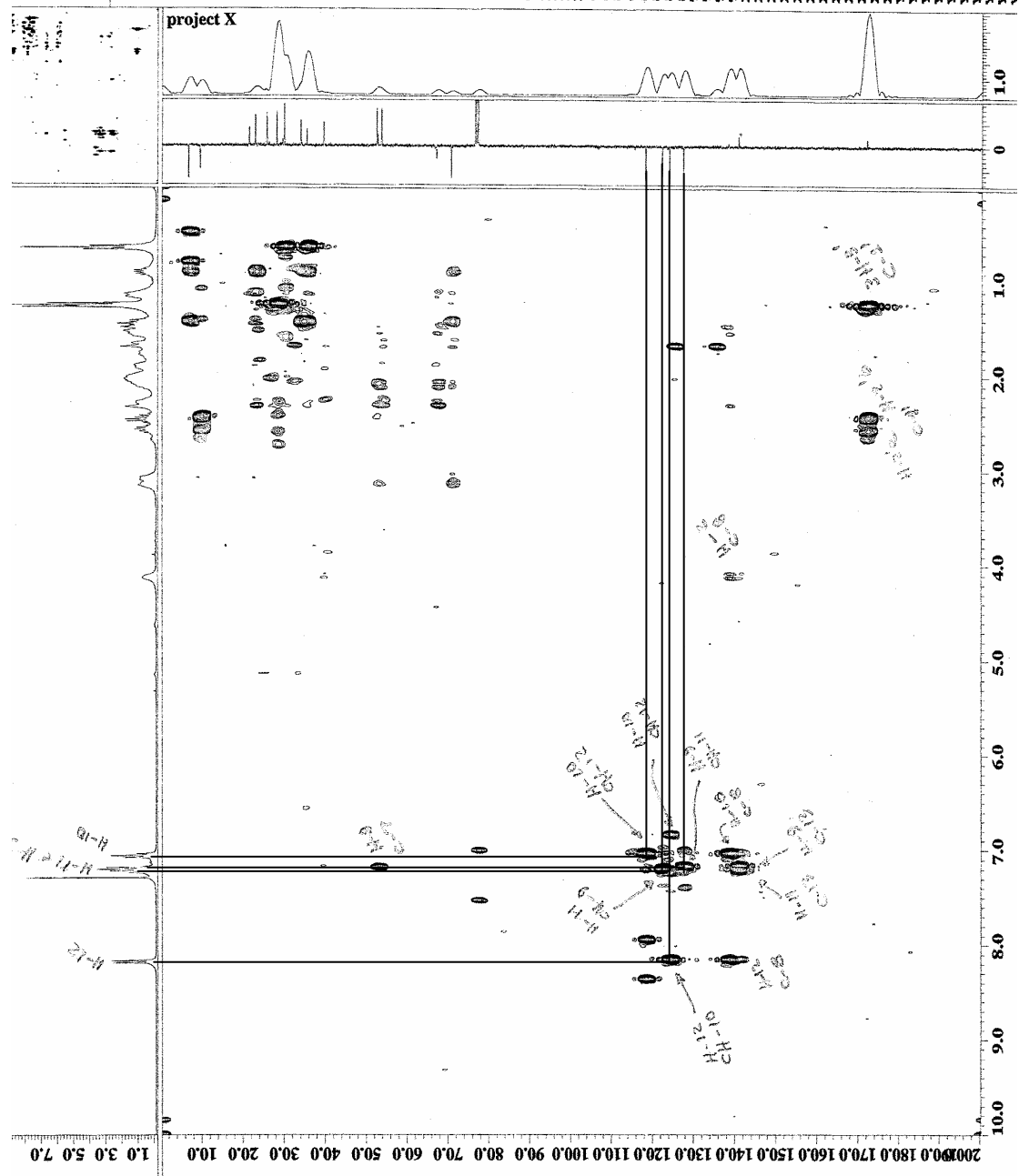
```

---- ACQUISITION PARAMETERS -----
File Name      = 46125-fg_hmqc.2
Author        = Jan Schripsema
Sample ID     = 46125
Content       = gradient enhanced HMQC
Creation Date = 14-JUN-2005 07:19:47
Revision Date = 14-JUN-2005 09:20:02
Spec Site    = Ecl1psr* 400

Spec Type    = DELTA_NMR
Data Format   = 2D REAL REAL
Dimensions   = X Y
Dim Title    = H_13C
Dim Units    = [Hz] [ms]
Acq Delay    = 0.2428 [ms]
Changer_Sample
Experiment    = hmqc_1rr_dfg_m.e
Field Strength = 9.389766 [T]
Grad_1_amp   = 1 [ms]
Grad_2_amp   = 3 [ms]
Grad_3_amp   = 60 [%]
Grad_4_amp   = 30 [%]
Grad_5_amp   = 0.2 [ms]
Irr90_h1     = 10 [us]
Irr90_l0     = 10 [us]
Irr_width    = 35 [us]
J_constant   = 140 [Hz]
Lock_Status  = IDLE
Recvr_Gain   = 15
Relaxation_Delay = 400
Scans        = CHLOROFORM-D
Spin_Get     = 15 [Hz]
Spin_Lock_90 = 90 [us]
Spin_Lock_atn = 12.5 [dB]
Spin_Set     = 15 [Hz]
Spin_Status  = SPIN ON
Temp_Get     = 25 [dC]
Temp_Set     = 25 [dC]
Temp_Status  = TEMP ON
Temp_Status  = 54.7 [us]
X90_l0      = 60.15 [us]
X90_l1      = 0.2561024 [s]
X_acq_duration = 1R
X_domain     = 399.78219838 [MHz]
X_freq       = 5 [ppm]
X_offset     = 1024
X_points     = 14.7 [us]
X_pulse      = 3.50468812 [Hz]
X_resolution = 3.99840064 [kHz]
X90         = 10 [us]
X90         = 9.5 [us]
Y_acq        = 100.52530333 [MHz]
Y_offset     = 100 [ppm]
Y_points     = 128
Y_prescans   = 0
Y_pulse      = 9.5 [us]
Y_resolution = 10.72100000 [kHz]
  
```



Espectro 28. Ampliação do mapa de correlação heteronuclear HMQC em CDCl_3 do alcalóide (-)-desmetoxipalossina.



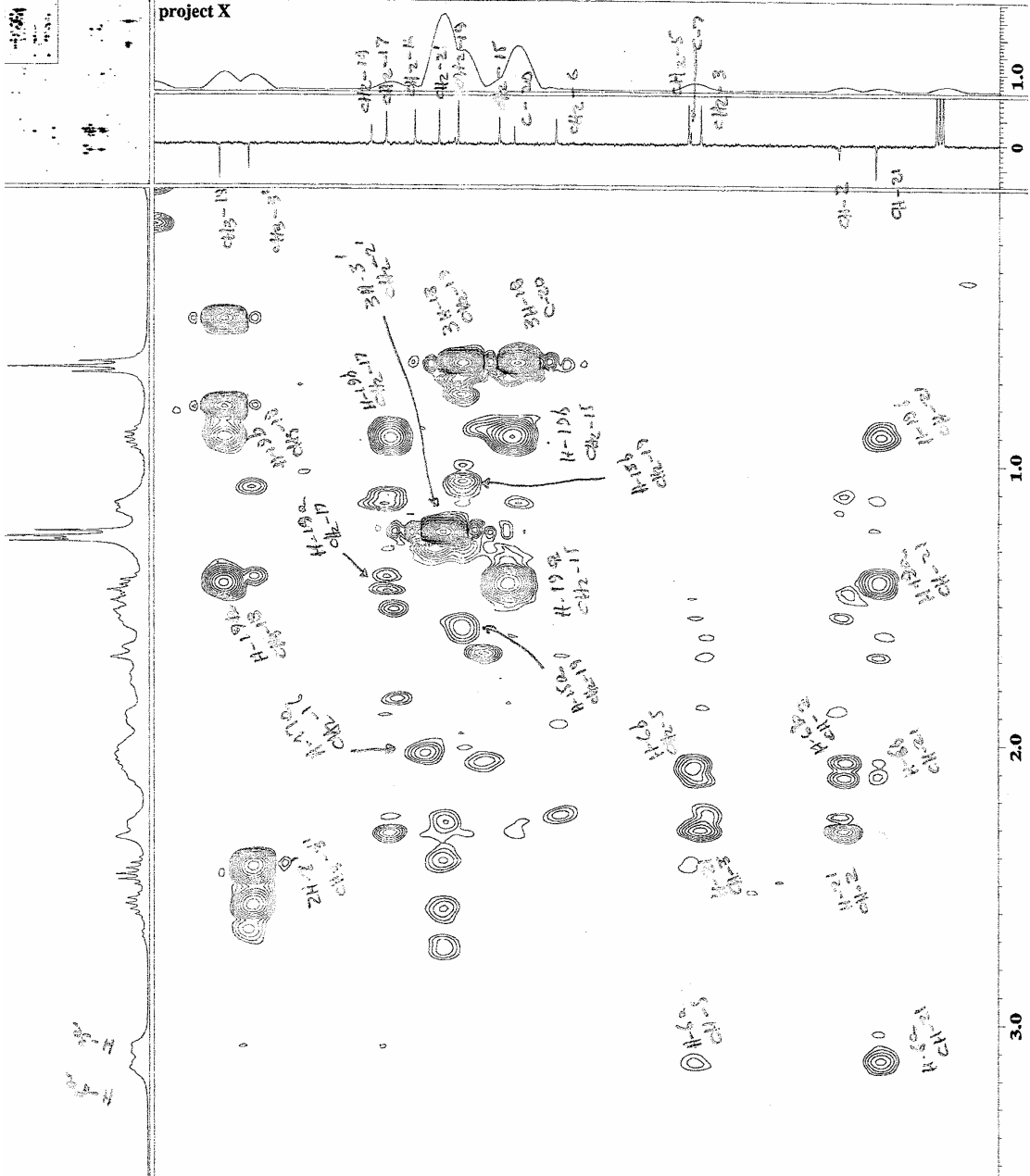
project X

ACQUISITION PARAMETERS
File Name = 46123-pig_hmbc.2
Sample = 46123
Sample ID = 46123
Content = Gradient enhanced HMBC
Creation Date = 12-JUN-2005 23:03:09
Revision Date = 13-JUN-2005 09:42:22
Spec Site = Eclipse+ 400

Spec Type = DELTA_NMR
Data Format = 2D_REAL_REAL
Pulse Program = 1H_13C
Dim 1 Size = 1024
Dim 2 Size = 512
Dim Units = [ppm]
Acq_delay = 0.2428 [ms]
Changer_sample = 0
Experiment = hmbc_pfg_m.exp
Field_strength = 9.389766 [T]
Grad_1_amp = 1 [ms]
Grad_2_amp = 0 [%]
Grad_3_amp = 60 [%]
Grad_3_angle = 30 [%]
Grad_recovery = 1 [ms]
Irr90_hi = 10 [us]
Irr90_lo = 10 [us]
Irr90_time = 10 [us]
J_lock_start = 240 [Hz]
Lock_status = LOCKED
Long_range_j = 8 [Hz]
Recvz_gain = 15
Relaxation_delay = 2 [s]
Scans = 384
Solvent = CHLOROFORM-D
Spin_get = 45 [Hz]
Spin_lock_90 = 12 [us]
Spin_lock_atn = 15 [dB]
Spin_set = 15 [Hz]
Spin_status = SPIN ON
Temp_get = 20 [dC]
Temp_set = 25 [dC]
Temp_status = TEMP OFF
Temp_off = 14.7 [us]
X0_lo = 60 [us]
X0_hi = 60 [us]
X_acq_duration = 0.2561024 [s]
X_domain = 1H_2561024 [s]
X_freq = 399.78219838 [MHz]
X_offset = 5 [ppm]
X_points = 1024
X_prescans = 4
X_pulse = 14.7 [us]
X_resolution = 3.246882 [Hz]
X_sweep = 3.246882 [MHz]
Y0_lo = 10 [us]
Y0_hi = 9.5 [us]
Y_domain = 35 [us]
Y_freq = 13C
Y_offset = 100.52530333 [MHz]
Y_points = 128
Y_pulse = 9.5 [us]
Y_resolution = 157.819888 [Hz]

Espectro 29. Mapa de correlação heteronuclear HMBC em CDCl₃ do alcalóide (-)-desmetoxipalossina.

1.0 3.0 5.0 7.0 100 200 300 400 500 600 700 800

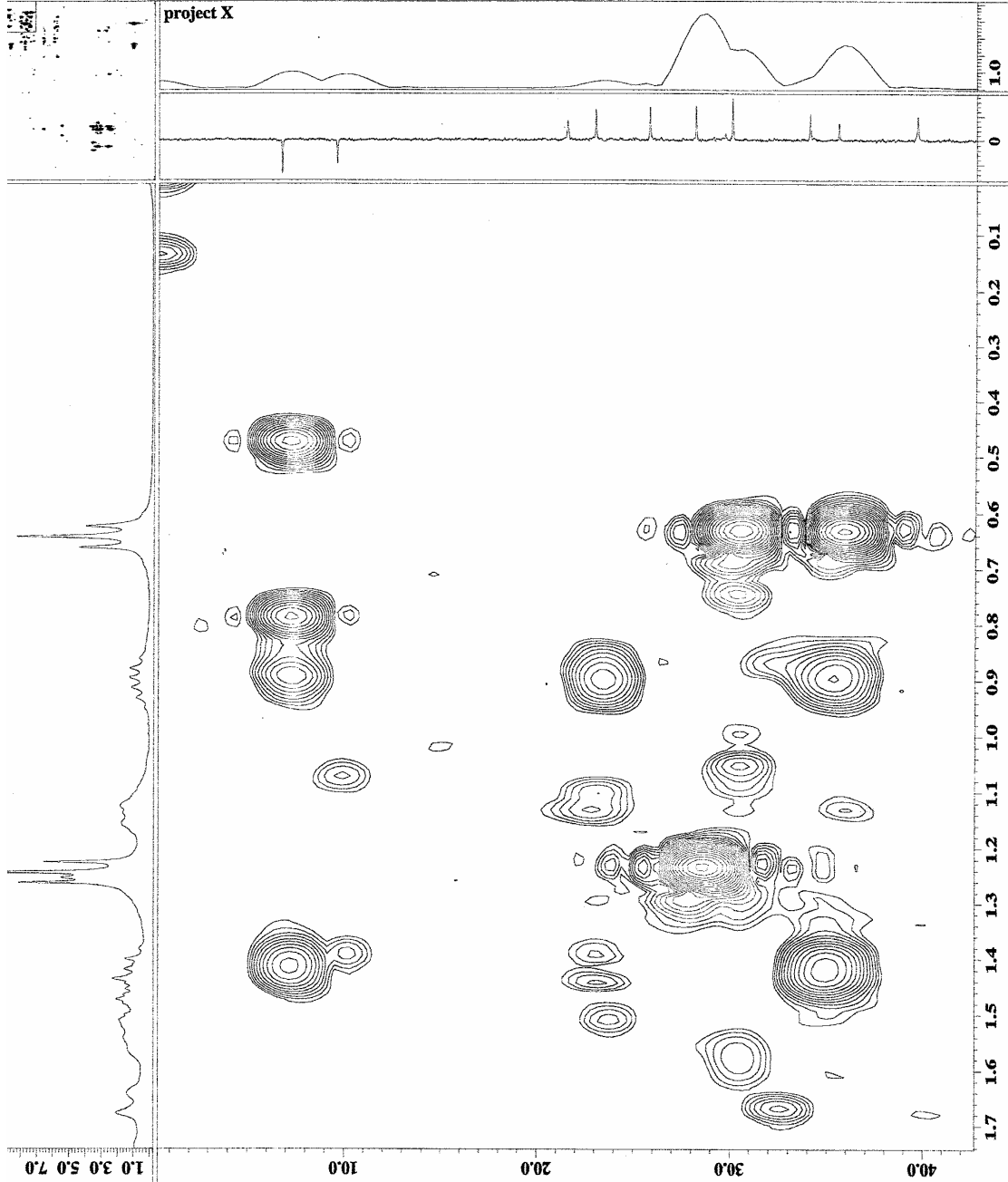


project X



ACQUISITION PARAMETERS
 File Name = 46125-pfg_hmbc_2
 Author = Jsa Schripsema
 Sample ID = 46125
 Content = Gradient enhanced HMBC
 Creation Date = 12-JUN-2005 23:03:09
 Revision Date = 13-JUN-2005 09:42:22
 Spec Site = Eclipse400
 DEVEL_NMR =
 2D_REAL_REAL =
 X Y =
 Dim Size = 1K 13C
 Dim Units = 1024, 512
 Dim Delays = [ppm] [ppm]
 Acq_delay = 0.2438 [ms]
 Changer_sample = hmbc_pfg_m.exp
 Experiment =
 Field_strength = 9.389766 [T]
 Grad_1_amp = 4 [G]
 Grad_2_amp = 1 [G]
 Grad_3_amp = 60 [G]
 Grad_3_percent = 30 [%]
 Grad_recover = 1 [ms]
 Irr90 = 10 [us]
 Irr90_hi = 10 [us]
 Irr90_lo = 10 [us]
 Irr_width = 35 [us]
 Lock_status = LOCK
 Long_range_j = 8 [kHz]
 Recvr_gain_j = 15
 Relaxation_delay = 2 [s]
 Scans = 384
 Solvent = CHLOROFORM-D
 Spin_get = 15 [Hz]
 Spin_lock_90 = 90 [us]
 Spin_lock_attn = 12.5 [dB]
 Spin_off = 15 [Hz]
 Spin_on = SPIN ON
 Spin_status = SPIN ON
 Temp_get = 20 [dC]
 Temp_set = 25 [dC]
 Temp_status = TEMP OFF
 Temp_off = 14.7 [us]
 X90 = 23.5 [us]
 X90_hi = 60 [us]
 X90_lo = 0.2561024 [s]
 X_acq_duration = 399.78219838 [MHz]
 X_gain = 51 [ppm]
 X_offset = 1024
 X_points = 4
 X_prescans = 14.7 [us]
 X_pulse = 3.90468812 [Hz]
 X_resolution = 3.98840064 [kHz]
 X_sweep = 10 [us]
 Y90 = 9.5 [us]
 Y90_hi = 33 [us]
 Y_gain = 100.52530333 [MHz]
 Y_freq = 100 [ppm]
 Y_offset = 128
 Y_prescans = 0
 Y_pulse = 9.5 [us]

Espectro 30. Ampliação do mapa de correlação heteronuclear HMBC em CDCl₃ do alcalóide (-)-desmetoxipalósina.



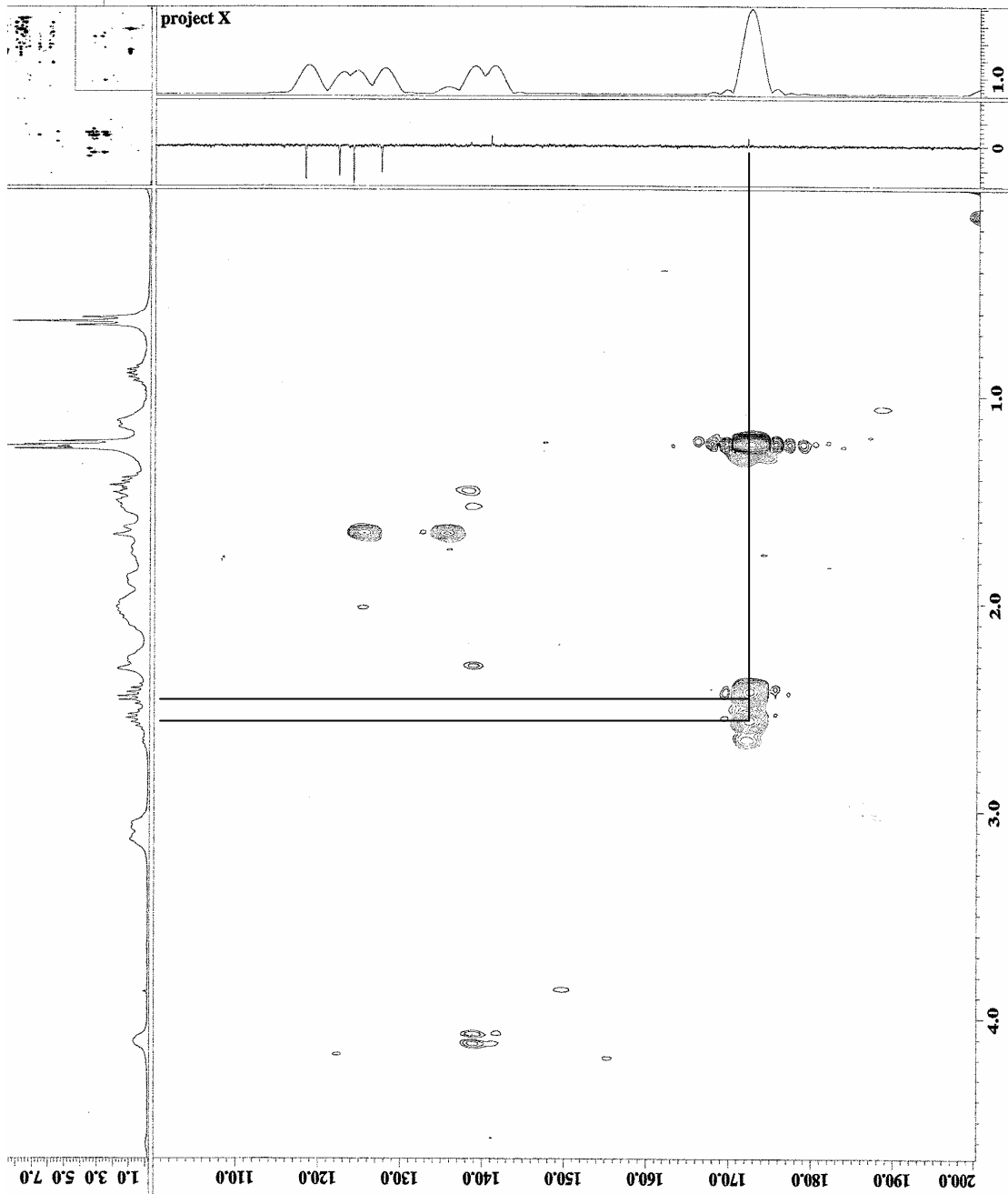
```

----- ACQUISITION PARAMETERS -----
File Name      = 46125-pfg_hmbc.2
Anchor        = Jan Schripsema
Sample ID     = 46125
Experiment    = 12-JUN-2005 23:03:09
Creation Date = 12-JUN-2005 23:03:09
Revision Date = 13-JUN-2005 09:42:22
Spec Site     = Eclipse+ 400

Spec Type     = DELTA_NMR
Data Format    = 2D REAL REAL
Dimensions    = X Y 13C 512
Dim Size     = 1024
Dim Units    = [ppm] [ppm]
Acq Delay    = 0.2428 [ms]
Changer_Sample = hmbc_pfg_m.exp
Experiment    = 9.389766 [T]
Field Strength = 1 [ms]
Grad_1_amp   = 60 [%]
Grad_2_amp   = 10 [%]
Grad_3_amp   = 1 [ms]
Grad_3_amp   = 30 [%]
Grad_Recover = 1 [ms]
Irr90        = 10 [us]
Irr90_hi    = 10 [us]
Irr90_lo    = 10 [us]
Irr_width    = 35 [us]
V_constant   = 140 [Hz]
Loop Status  = 8 [Hz]
Recvr Gain   = 15
Relaxation_delay = 2 [s]
Scans        = 384
Solvent      = CHLOROFORM-D
Spin_get     = 15 [Hz]
Spin_lock_90 = 90 [us]
Spin_lock_attn = 14.5 [dB]
Spin_status  = SPIN ON
Spin_status  = SPIN ON
Temp_get     = 20 [dC]
Temp_set     = 25 [dC]
Temp_status  = TEMP OFF
Temp_status  = TEMP OFF
X90_hi      = 14.7 [us]
X90_lo      = 23.5 [us]
X90_lo_duration = 18.561024 [s]
X_domain    = 399.78219838 [MHz]
X_freq      = 5 [ppm]
X_offset    = 1024
X_points    = 4
X_prescans  = 14.7 [us]
X_resolution = 3.90468812 [Hz]
X_sweep     = 3.9840064 [kHz]
Y90_hi     = 9.5 [us]
Y90_lo     = 35 [us]
Y_domain    = 13C
Y_freq      = 100.52530333 [MHz]
Y_offset    = 100 [ppm]
Y_points    = 128
Y_prescans  = 0
Y_pulse     = 9.5 [us]

```

Espectro 31. Ampliação do mapa de correlação heteronuclear HMBC em CDCl₃ do alcalóide (-)-desmetoxipalossina.

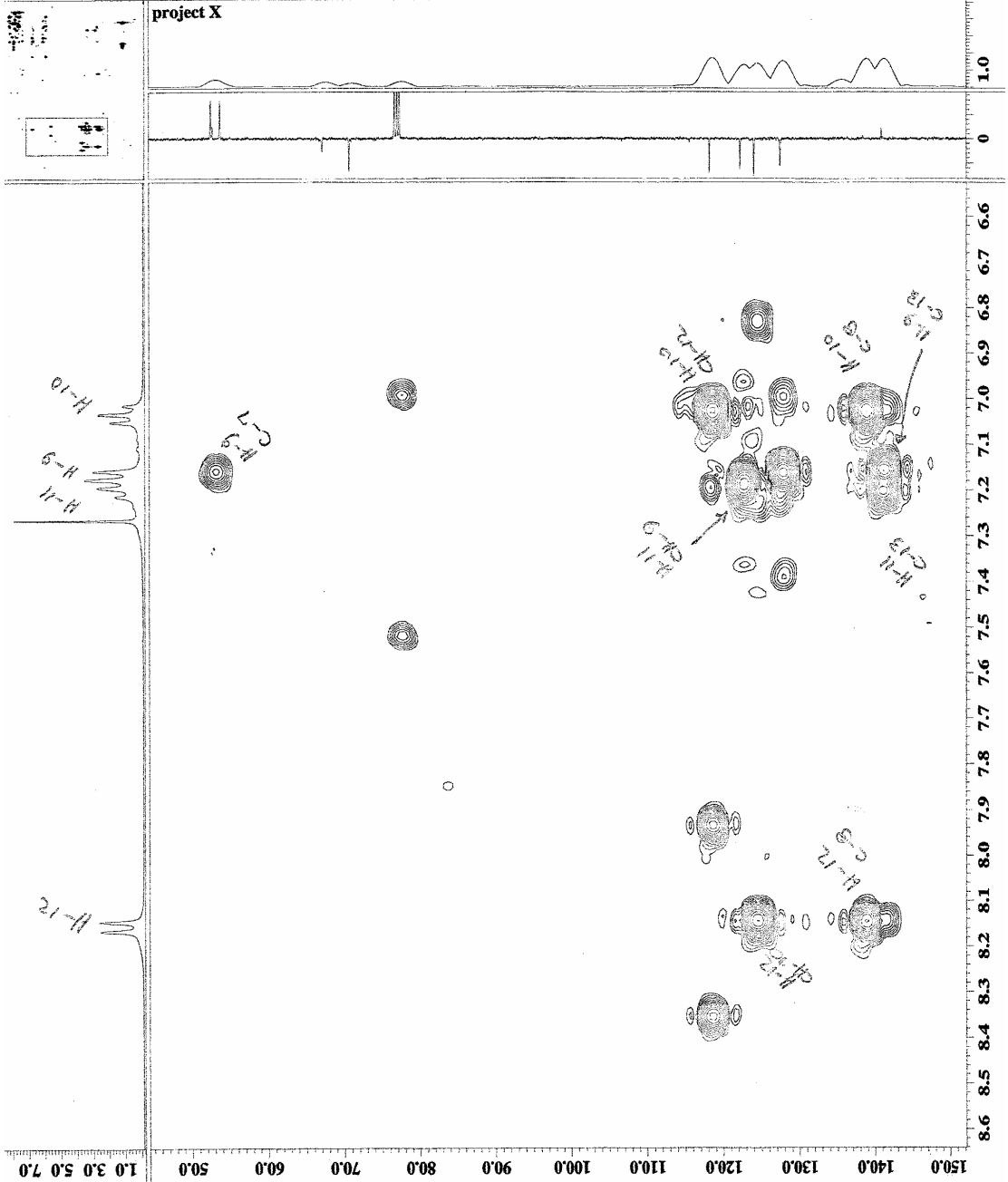


----- ACQUISITION PARAMETERS -----
 File Name = 4125_pfg_hmbc.2
 Subfile = 4125_pfg_hmbc.2
 Sample ID = 46125
 Content = Gradient enhanced HMBC
 Creation Date = 12-JUN-2005 23:03:09
 Revision Date = 13-JUN-2005 09:42:22
 Spec Site = Eclipse+ 400

Spec Type = DELTA_NMR
 Data format = X REAL REAL
 Dim 1 = 1H 13C
 Dim Title = 1H 13C
 Dim Size = 1024, 512
 Dim Units = [ppm] [ppm]
 Acq_delay = 0.2428 [ms]
 Changer_sample = 0
 Experiment = hmbc_pfg_m.exp
 Field_strength = 9.389766 [T]
 Grad_1_amp = 1 [ms]
 Grad_1_pct = 10 [%]
 Grad_2_amp = 1 [ms]
 Grad_2_pct = 60 [%]
 Grad_3_amp = 1 [ms]
 Grad_3_pct = 30 [%]
 Grad_recover = 1 [ms]
 Irr90 = 10 [us]
 Irr90_lo = 10 [us]
 Irr_width = 2 [us]
 Lock_status = TRK
 Long_range_j = 8 [kHz]
 Recvr_gain_j = 15
 Relaxation_delay = 2 [s]
 Scans = 384

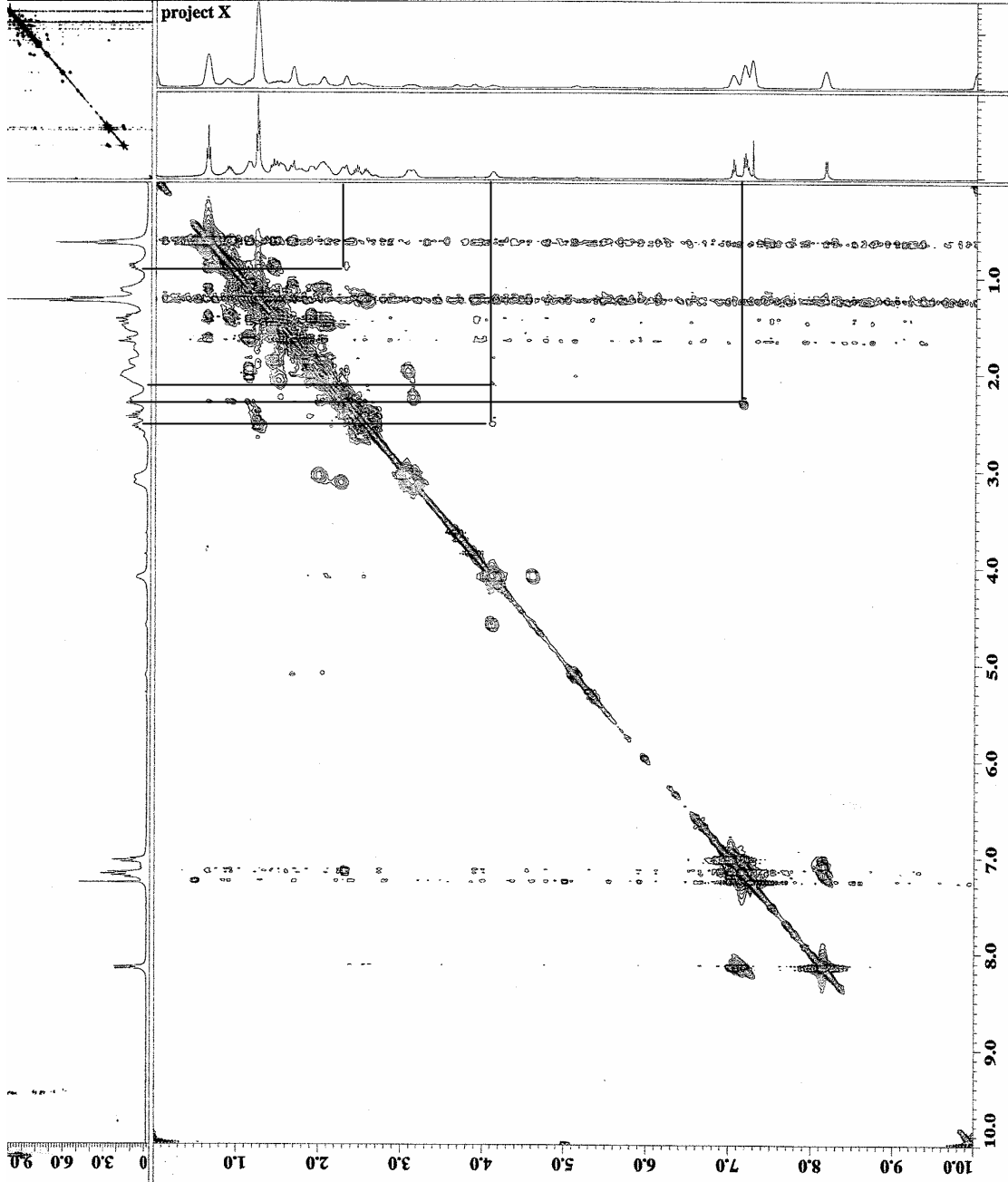
Solvent = CHLOROFORM-D
 Spin_get = 15 [Hz]
 Spin_lock_90 = 90 [us]
 Spin_lock_attn = 12 [dB]
 Spin_lock_status = SPIN ON
 Spin_status = SPIN ON
 Temp_get = 20 [dC]
 Temp_set = 25 [dC]
 Temp_status = TEMP OFF
 Temp_off = 14.7 [us]
 X90_hi = 23.5 [us]
 X90_lo = 14.7 [us]
 X_duration = 60 [us]
 X_domain = 1H 13C1024 [s]
 X_freq = 399.78219838 [MHz]
 X_offset = 5 [ppm]
 X_points = 1024
 X_prescans = 4
 X_pulse = 14.7 [us]
 X_resolution = 3.9468813 [Hz]
 X_sweep = 3.9840064 [kHz]
 Y0_hi = 5 [us]
 Y0_lo = 35 [us]
 Y_domain = 13C
 Y_freq = 100.52530333 [MHz]
 Y_offset = 100 [ppm]
 Y_points = 128
 Y_prescans = 0
 Y_pulse = 9.5 [us]

Espectro 32. Ampliação do mapa de correlação heteronuclear HMBC em CDCl₃ do alcalóide (-)-desmetoxipalossina.



----- ACQUISITION PARAMETERS -----
File Name = 46125-pfg_hmbc.2
Author = Jan Schripsema
Sample ID = 46125
Content = Gradient enhanced HMBC
Creation Date = 12-JUN-2005 23:03:09
Revision Date = 13-JUN-2005 09:42:22
Spec Site = Eclipse 400
Spec Type = DELTA_NMR
Data Format = 2D REAL REAL
Dimensions = X Y
Dim Title = 1H 13C
Dim Size = 1024, 512
Dim Units = [ppm], [ppm]
Acq_delay = 0.2428 [ms]
Sample =
Experiment = hmbc_pfg_m_exp
Field_strength = 9.389766 [T]
Grad_1_amp = 1 [ms]
Grad_1_pct = 60 [%]
Grad_2_amp = 1 [ms]
Grad_2_pct = 60 [%]
Grad_3_amp = 1 [ms]
Grad_3_pct = 10 [%]
Grad_4_amp = 10 [ms]
Irr90_recover = 10 [us]
Irr90_hi = 10 [us]
Irr90_lo = 10 [us]
Irr_pwidth = 35 [us]
J_constant = 140 [Hz]
Lock_status = IDLE
Long_range_1 = 8 [Hz]
Recvr_gain = 25
Relaxation_delay = 2 [s]
Scans = 384
Solvent = CHLOROFORM-D
Spin_set = 15 [Hz]
Spin_lock_90 = 90 [us]
Spin_lock_attn = 12.5 [dB]
Spin_set = 15 [Hz]
Spin_status = SPIN ON
Temp_set = 25 [C]
Temp_status = TEMP OFF
X90_hi = 14.7 [us]
X90_lo = 23.5 [us]
X_acq_duration = 0.2561024 [s]
X_domain = 399.78219838 [MHz]
X_freq = 1024
X_points = 4
X_prescans = 14.7 [us]
X_resolution = 3.90468812 [Hz]
X_sweep = 3.99840064 [kHz]
Y90_hi = 10 [us]
Y90_lo = 9.5 [us]
Y_domain = 35 [us]
Y_offset = 100 [ppm]
Y_points = 128
Y_prescans = 0
Y_pulse = 9.5 [us]
Y_resolution = 157.51008065 [Hz]

Espectro 33. Ampliação do mapa de correlação heteronuclear HMBC em CDCl₃ do alcalóide (-)-desmetoxipalossina.

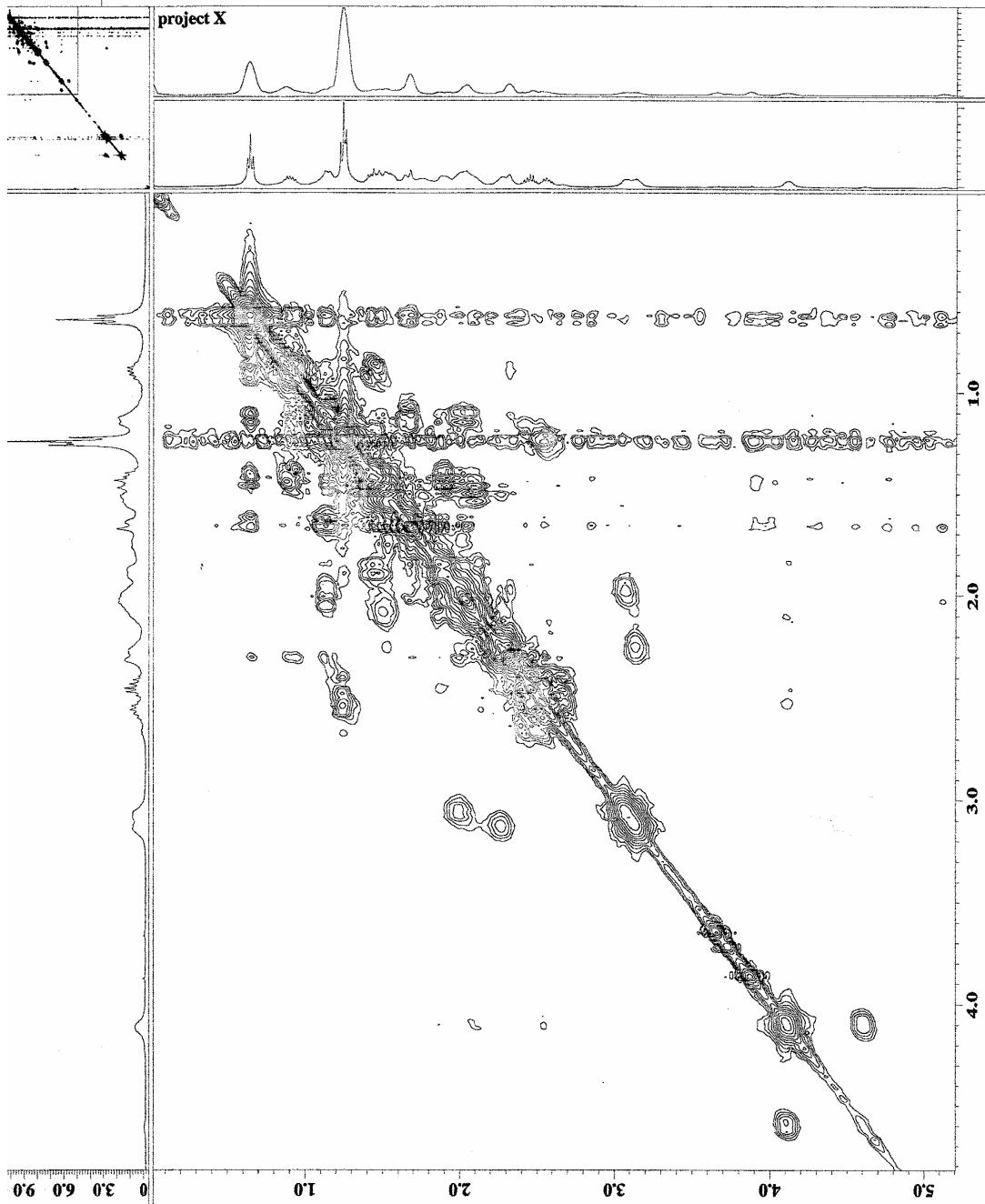


```

----- ACQUISITION PARAMETERS -----
File Name      = 46125-noesy.3
Auto Name     = 46125-noesy.3
Sample ID     = 46125
Content       = absolute value noesy
Creation Date = 13-JUL-2005 13:33:03
Revision Date = 21-JUL-2005 11:22:17
Spec Site    = Eclipse4 400

Spec Type   = DELTA_NMR
Data Format = X Y REAL REAL
Dim 1      = 1H 1H
Dim 2      = 512, 1024
Dim Units  = [ppm] [ppm]
Acq Delay  = 0.2428 [ms]
Changer_Sample = 0
Experiment = noesy.exp
Field_Strength = 9.389766 [T]
Prg90_hi   = 14.7 [us]
Prg90_lo   = 60.5 [us]
Irr90_lo   = 60 [us]
Irr90_hi   = 60 [us]
Lock Status = IDLE
Recvr Gain  = 15
Relaxation_Delay = 1.5 [s]
Scans       = 16
Solvent     = CHLOROFORM-D
Spin_Lock   = 15 [kHz]
Spin_Lock_90 = 10 [us]
Spin_Lock_Attn = 15 [dB]
Spin_Set    = 15 [kHz]
Spin_On     = SPIN ON
Spin_State  = SPIN ON
Temp_Set    = 25 [dC]
Temp_Status = TEMP ON
Temp_On     = TEMP ON
X0          = 0 [us]
X90_hi     = 14.7 [us]
X90_lo     = 60 [us]
X_Acq_Duration = 0.1280512 [s]
X_Freq     = 399.78219838 [MHz]
X_Offset   = 5 [ppm]
X_Points   = 512
X_Prescans = 4
X_Pulse    = 14.7 [us]
X_Resolution = 7.8837625 [kHz]
Y0         = 10 [us]
Y90_hi     = 10 [us]
Y90_lo     = 50 [us]
Y_Domain   = 1H
Y_Freq     = 399.78219838 [MHz]
Y_Offset   = 5 [ppm]
Y_Points   = 256
Y_Prescans = 0
Y_Resolution = 5.6187525 [kHz]
Y_Sweep    = 3.99840064 [kHz]
  
```

Espectro 34. Mapa de correlação homonuclear ¹H-¹H-NOESY em CDCl₃ do alcalóide (-)-desmetoxipalossina.

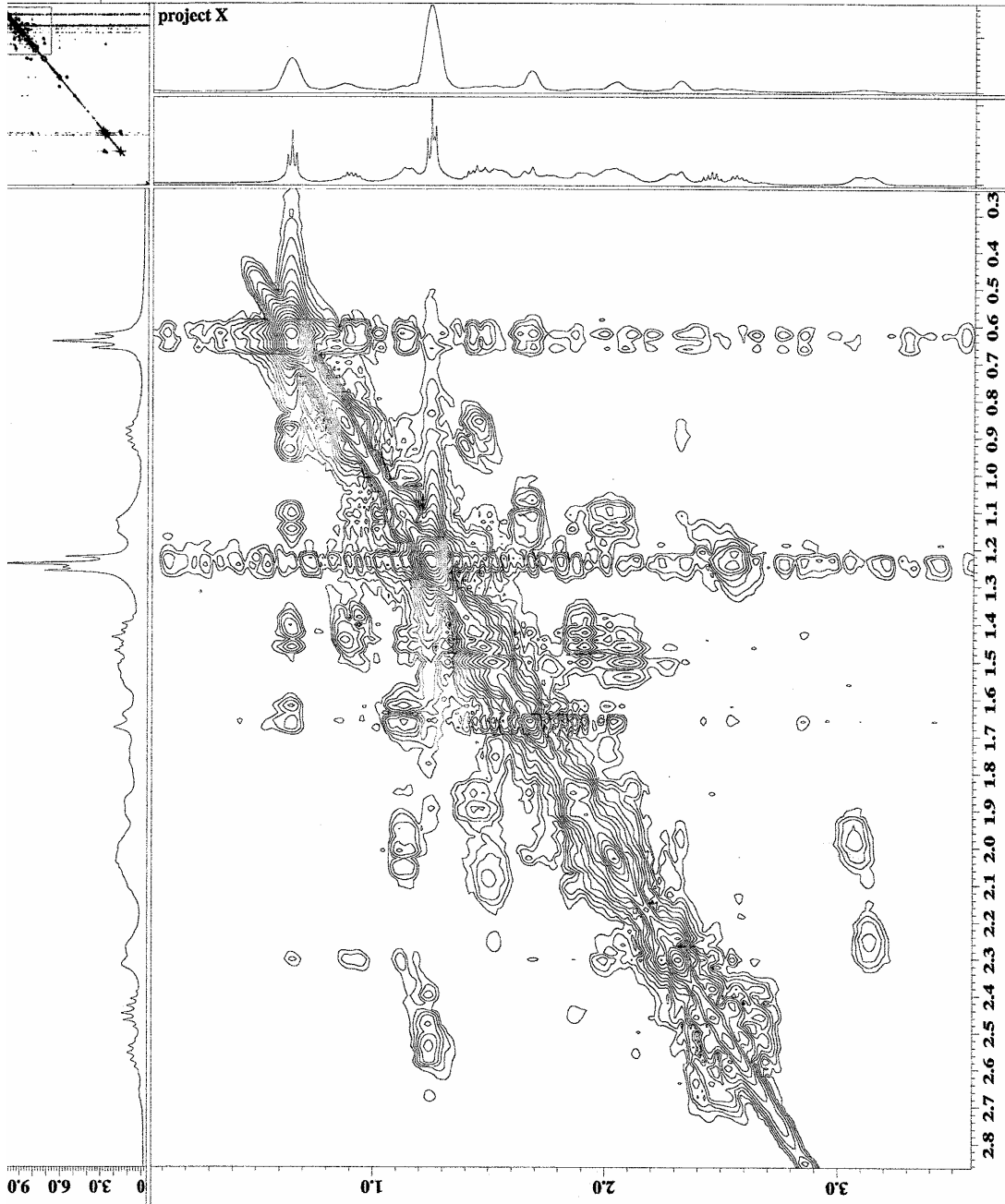


```

----- ACQUISITION PARAMETERS -----
File Name      = 46125-noesy_3
Author        = Jan Schripsema
Sample ID     = 46125
Content       = absolute value noesy
Creation Date = 13-JUL-2005 13:33:03
Revision Date = 21-JUL-2005 11:22:17
Spec Site     = Eclipse 400

Spec Type     = DELTA NMR
Data Format    = 2D REAL REAL
Dimensions    = X Y
Dim Title     = 1H 1H
Dim Size      = 512, 1024
Dim Units     = [ppm] [ppm]
Changer       = 0
Changer Sample = 0
Experiment    = noesy.exp
Field Strength = 9.389766[T]
Irr90_hi     = 14.7[us]
Irr90_lo     = 23.5[us]
Irr_width    = 60[us]
Lock         = 0
Recvr Gain    = 18
Relaxation_delay = 1.5[s]
Scans        = 16
Solvent       = CHLOROFORM-D
Spin_lock_90 = 15[Hz]
Spin_lock_atn = 90[us]
Spin_lock_atn = 12[us]
Spin_status   = SPIN ON
Temp_set     = 25[dc]
Temp_status  = TEMP ON
X90_hi      = 24.5[us]
X90_lo      = 60[us]
X_acq_duration = 0.1280512[s]
X_domain     = 1H
X_freq       = 399.78219838[MHz]
X_offset     = 5[ppm]
X_points     = 512
X_prescans   = 14.7[us]
X_resolution = 7.80337625[Hz]
Y90         = 10[us]
Y_sweep     = 3.99840064[kHz]
Y90_hi     = 10[us]
Y90_lo     = 50[us]
Y_domain    = 1H
Y_freq      = 399.78219838[MHz]
Y_offset    = 25[ppm]
Y_points    = 0
Y_prescans  = 0
Y_resolution = 15.6187525[Hz]
Y_sweep     = 3.99840064[kHz]
    
```

Espectro 35. Ampliação do mapa de correlação homonuclear ^1H - ^1H -NOESY em CDCl_3 do alcalóide (-)-desmetoxipalossina.

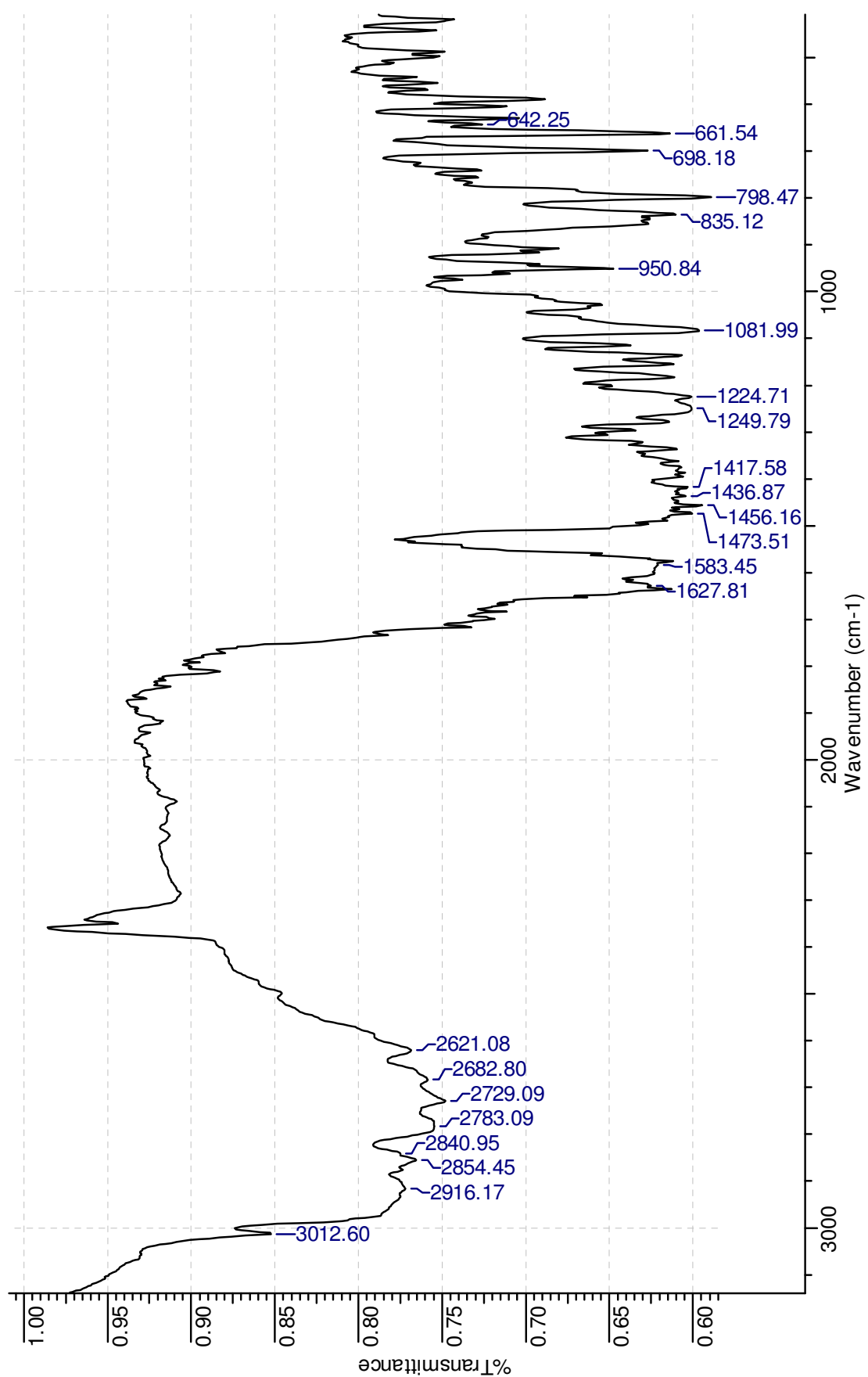


```

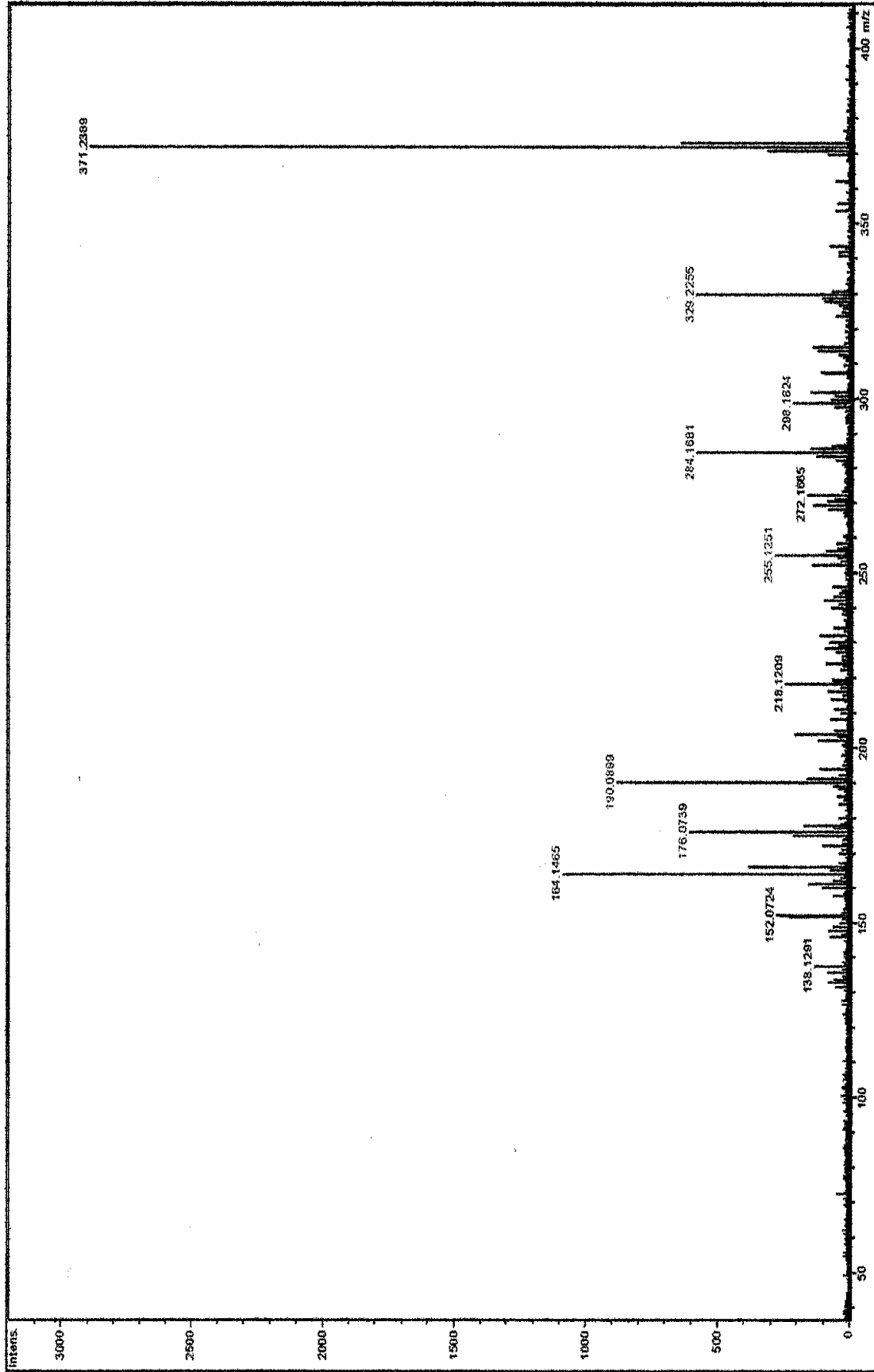
---- ACQUISITION PARAMETERS ----
File Name      = 46125-noesy.3
Author        = Jan Schripsema
Sample ID     = 46125
Content       = absolute value noesy
Creation Date = 13-JUL-2005 13:33:03
Revision Date = 21-JUL-2005 11:22:17
Spec Site     = Eclipse+ 400

Spec Type     = DELTA_NMR
Data Format    = 2D REAL REAL
Dimensions    = X Y
Dim Title     = 1H 1H
Dim Size      = 512, 1024
Dim Units     = ppm, ppm
Acq_Units     = 0.2228 [ms]
Changer       = 0
Experiment    = noesy.exp
Field_strength = 9.389766 [T]
Irr90_hi     = 14.7 [us]
Irr90_lo     = 23.5 [us]
Irr_width    = 60 [us]
L1_offset    = 0 [us]
L1_pulse     = 0 [us]
Recycle_time = 15 [s]
Relaxation_delay = 1.5 [s]
Scans        = 16
Solvent      = CHLOROFORM-D
Spin_lock    = 15 [Hz]
Spin_lock_90 = 90 [us]
Spin_lock_atn = 12.5 [dB]
Spin_status  = SPIN ON
Temp_get     = 25 [dC]
Temp_set     = 25 [dC]
Temp_status  = TEMP ON
X90_hi      = 14.7 [us]
X90_lo      = 23.5 [us]
X_acq_duration = 0.1380512 [s]
X_domain     = 1H
X_freq       = 399.78219838 [MHz]
X_offset     = 5 [ppm]
X_points     = 512
X_prescans   = 4
X_pulse      = 14.7 [us]
X_resolution = 3.99840064 [kHz]
Y90         = 10 [us]
Y90_hi     = 10 [us]
Y90_lo     = 50 [us]
Y_domain    = 1H
Y_freq      = 399.78219838 [MHz]
Y_offset    = 5 [ppm]
Y_points    = 256
Y_prescans  = 1
Y_resolution = 15.6187525 [kHz]
Y_sweep     = 3.99840064 [kHz]
  
```

Espectro 36. Ampliação do mapa de correlação homonuclear ^1H - ^1H -NOESY em CDCl_3 do alcaloide (-)-desmetoxipalossina.



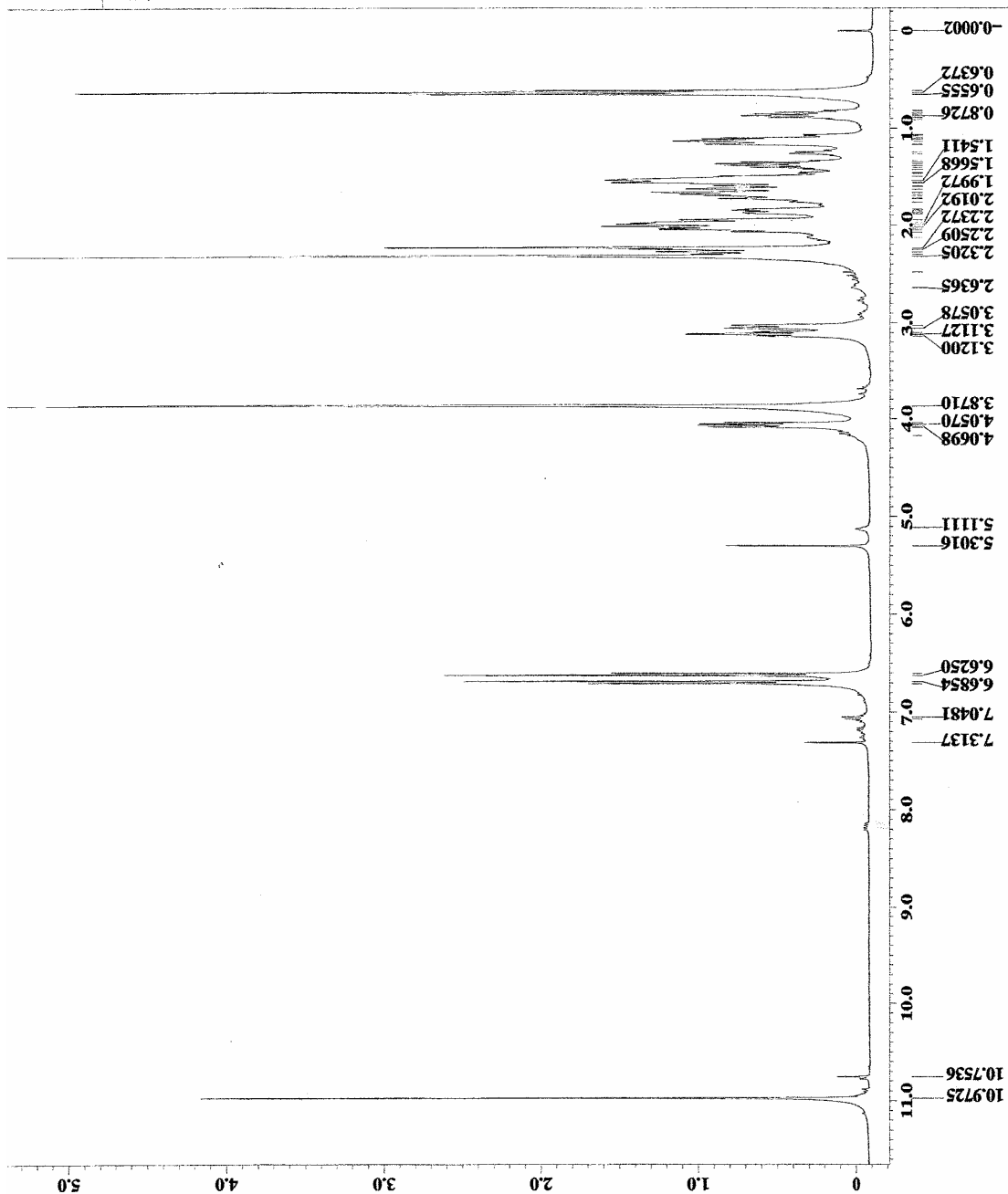
Espectro 37. Espectro de infravermelho do alcalóide (+)-aspidocarpina.



Espectro 38. Espectro de massas do alcalóide (+)-aspidocarpina.



----- ACQUISITION PARAMETERS -----
File Name = 5582030-1d spectrum.12
Author = Jan Schripsema
Sample ID = 5582030
Content = Single Pulse Experiment
Creation Date = 4-MAY-2005 13:24:10
Revision Date = 4-MAY-2005 17:45:26
Spec Site = Eclipse+ 400
Spec Type = DREA NMR
Dim Format = 1D COMPLEX
Dimensions = X
Dim Title = 1H
Dim Size = 16384
Dim Units = [ppm]
Acq_delay = 0.1631 [ms]
Change_sample = 0
Experiment = single_pulse.exp
Field_strength = 9.385766 [T]
Irr90_hi = 4.5 [us]
Irr90_lo = 60 [us]
Irr_width = 60 [us]
Lock_status = IDLE
Recvr_gain = 8
Relaxation_delay = 4 [s]
Scans = 8
Solvent = CHLOROFORM-D
Spin_get = 14 [Hz]
Spin_lock_90 = 15 [us]
Spin_lock_attn = 15 [dB]
Spin_set = 15 [Hz]
Spin_status = SPIN ON
Temp_get = 25 [dC]
Temp_set = 25 [dC]
Temp_status = TEMP ON
X90_hi = 14.7 [us]
X90_lo = 60 [us]
X_acq_duration = 2.7312128 [s]
X_domain = 1H
X_freq = 399.78219838 [MHz]
X_offset = 7 [ppm]
X_points = 16384
X_prescans = 0
X_pulse = 7.35 [us]
X_resolution = 0.36613771 [Hz]
X_sweep = 5.98880024 [kHz]



Espectro 39. Espectro de RMN ¹H (400 MHz) em CDCl₃ do alcalóide (+)-aspidocarpina.

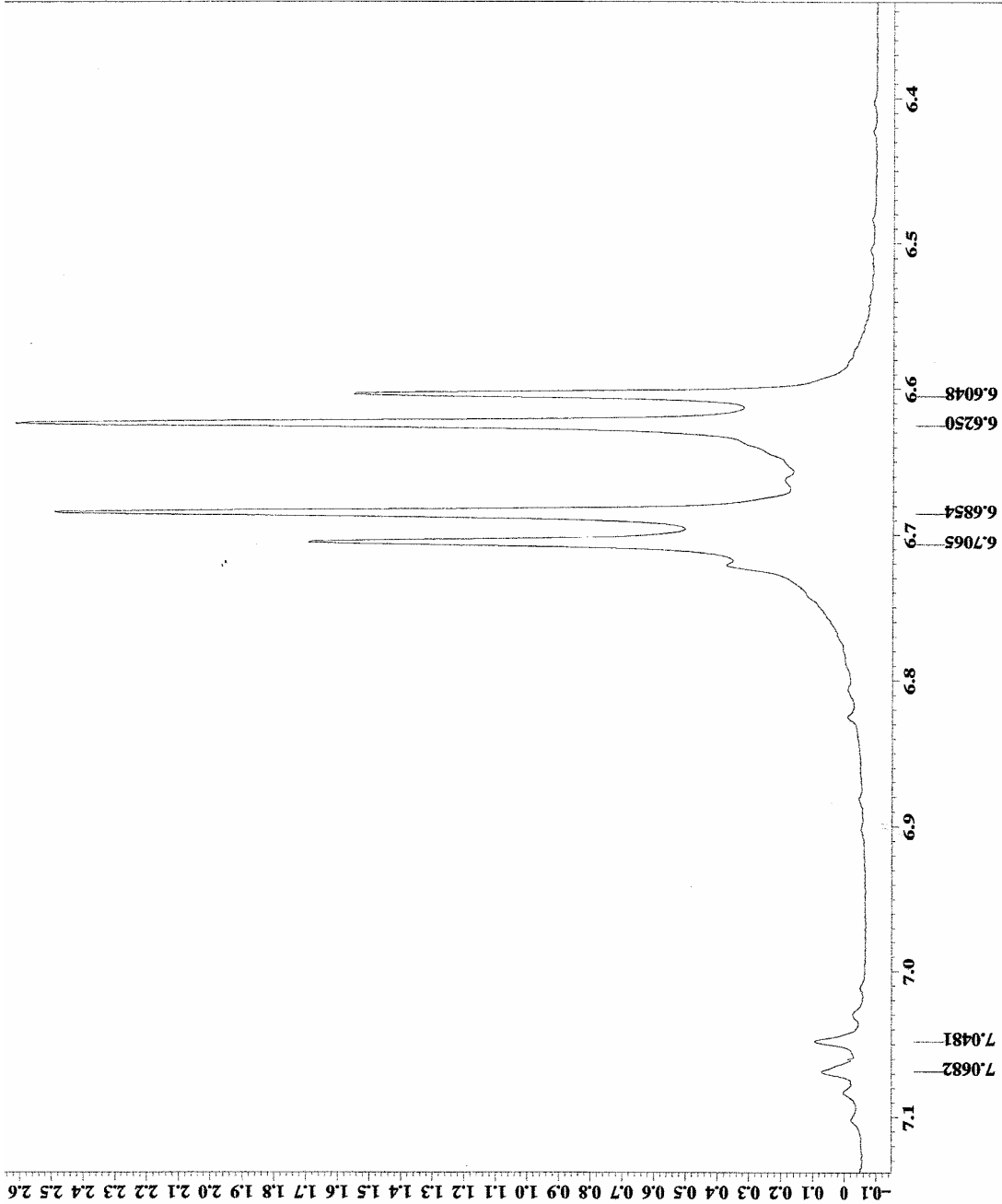
```

---- ACQUISITION PARAMETERS ----
File Name      = 5582030-id_spectrum.12
Author        = UERJ Schripsema
Sample ID     = 5582030 Pulse Experimen
Contact       = 4-MAY-2005 13:24:10
Creation Date

Revision Date  = 4-MAY-2005 17:45:26
Spec Site     = Eclipse+ 400

Spec Type     = DELTA_NMR
Data Format    = ID COMPLEX
Dimensions    = X
Dim Size      = 16384
Dim Units     = [ppm]
Acq_delay     = 0.1631 [ms]
Changer_sample = 0
Experiment    = single_pulse.exp
Field_strength = 9.389766 [T]
Irr90_hi     = 14.7 [us]
Irr90_lo     = 23.5 [us]
Irr90_off    = 60 [us]
Lock_status   = LOCK
Lock_gain     = 8
Relaxation_delay = 4 [s]
Scans         = 8
Solvent       = CHLOROFORM-D
Spin_get      = 14 [Hz]
Spin_lock_90 = 90 [us]
Spin_lock_attn = 12.5 [dB]
Spin_status   = SPIN ON
Spin_status   = SPIN ON
Temp_get      = 25 [dC]
Temp_set      = 25 [dC]
Temp_state    = TEMP ON
Temp_status   = TEMP ON
X90_hi       = 14.7 [us]
X90_lo       = 23.5 [us]
X90_off      = 60 [us]
X12_duration = 1H/352.128 [s]
X_domain     = 1H
X_freq       = 399.78219838 [MHz]
X_offset     = 7 [ppm]
X_points     = 16384
X_prescans   = 0
X_pulse      = 7.35 [us]
X_resolution = 0.36613771 [Hz]
X_sweep      = 5.99880024 [kHz]

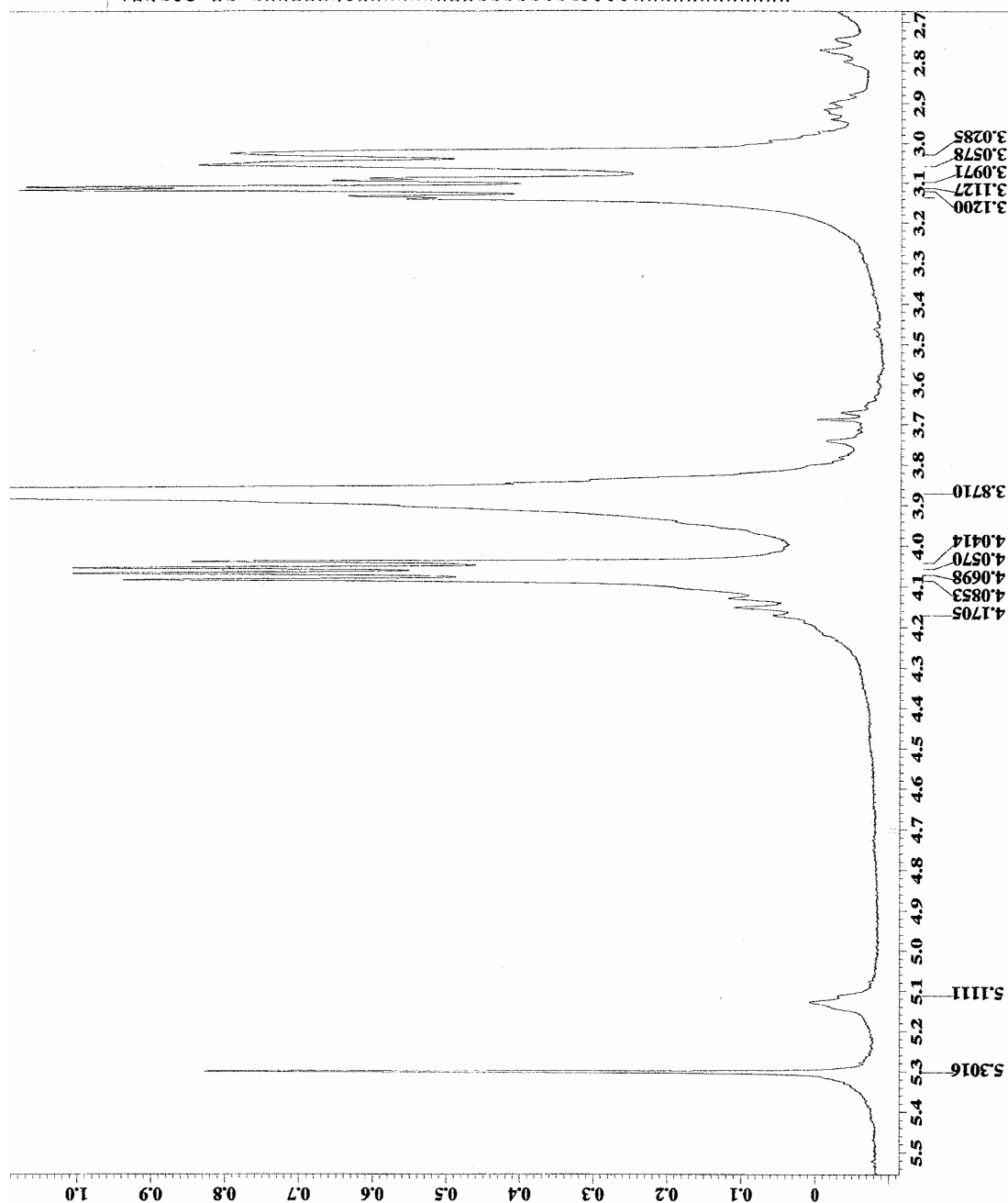
```



Espectro 40. Ampliação da região de δ_H 6,4-7,1 do espectro de RMN ¹H (400 MHz) em CDCl₃ do alcalóide (+)-aspidocarpina.



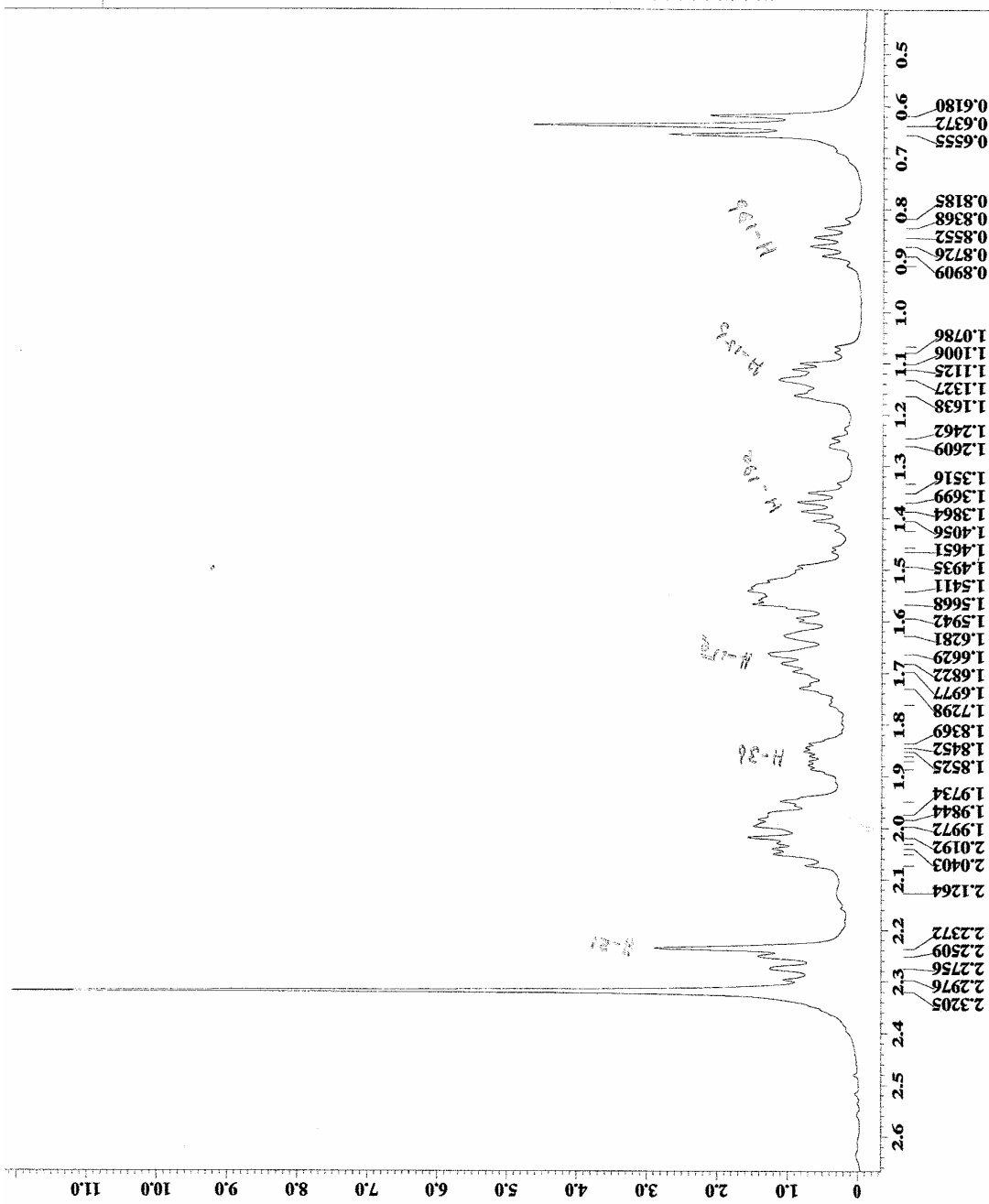
----- ACQUISITION PARAMETERS -----
File Name = 582030_d_spectrum.12
Auth = 7582030_ripema
Sample ID = 582030
Content = Single Pulse Experiment
Creation Date = 4-MAY-2005 13:24:10
Revision Date = 4-MAY-2005 17:45:26
Spec Site = Eclipse+ 400
Spec Type = DELTA_NMR
Data Format = ID COMPLEX
Dimensions = 1H
Dim 1 Size = 16384
Dim 2 Size = [ppm]
Acq_delay = 0.1631[ms]
Changer_sample = single_pulse.exp
Experiment = 9.389766[T]
Field_strength = 14.7[us]
Irr90_hi = 23.5[us]
Irr90_lo = 60[us]
Irr90_width = 100[us]
Lock_status = YDMZ
Recvr_gain = 8
Relaxation_delay = 4[us]
Scans = 8
Solvent = CHLOROFORM-D
Spin_get = 14[Hz]
Spin_lock_90 = 90[us]
Spin_lock_attn = 12.5[dB]
Spin_set = 15[Hz]
Spin_status = SEM ON
Temp_get = 25[DC]
Temp_set = 25[DC]
Temp_status = TEMP ON
X90 = 14.7[us]
X90_hi = 23.5[us]
X90_lo = 60[us]
X_acq_duration = 2.7512128[s]
X_domain = 19.78219838[MHz]
X_freq = 75.761[MHz]
X_points = 16384
X_prescans = 0
X_pulse = 7.35[us]
X_resolution = 0.36613771[Hz]
X_sweep = 5.99880024[MHz]



Espectro 41. Ampliação da região de δ_H 2,7-5,5 do espectro de RMN 1H (400 MHz) em $CDCl_3$ do alcalóide (+)-aspidocarpina.



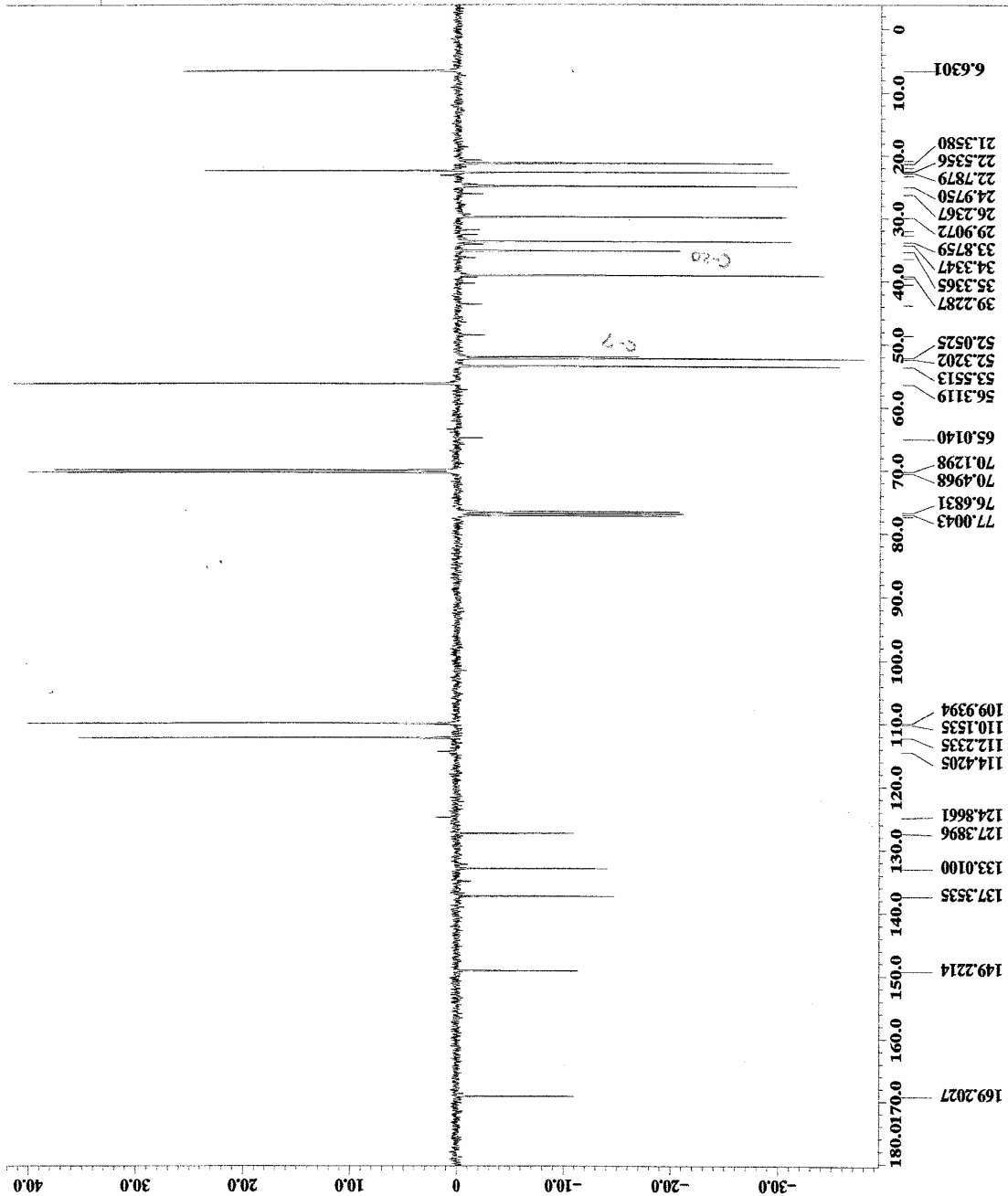
==== ACQUISITION PARAMETERS =====
File Name = 358280-id_spectrum.7
Auto = 1
Sample = 582030
Sample ID = 582030
Content = Single Pulse Experiment
Creation Date = 4-MAY-2005 13:34:10
Revision Date = 4-MAY-2005 17:14:57
Spec Site = Eclipse400
Spec Type = DELTA_NMR
Site Name = D COMPLEX
Dimension = 1H
Dim Title = 1H
Dim Size = 16384
Dim Units = [ppm]
Acq_delay = 0.1631 [ms]
Changer_sample = 0
Experiment = single_pulse_exp
Field_strength = 9.389766 [T]
Irr90_hi = 24.5 [us]
Irr90_lo = 60 [us]
Irr_width = 60 [us]
Lock_status = IDLE
Recvr_gain = 8
Relaxation_delay = 4 [s]
Scans = 8
Solvent = CHLOROFORM-D
Spin_get = 4 [Hz]
Spin_lock_90 = 12.5 [dB]
Spin_lock_attn = 12.5 [dB]
Spin_set_attn = 15 [Hz]
Spin_status = SPIN ON
Temp_get = 25 [dC]
Temp_set = 25 [dC]
Temp_status = TEMP ON
X90_hi = 24.5 [us]
X90_lo = 60 [us]
X_acq_duration = 2.7312128 [s]
X_domain = 1H
X_freq = 399.78219838 [MHz]
X_offset = 7 [ppm]
X_points = 16384
X_prescans = 0
X_pulses = 35 [us]
X_pulse_attn = 0.35413771 [Hz]
X_pulse_duration = 5.99880024 [kHz]
X_sweep =



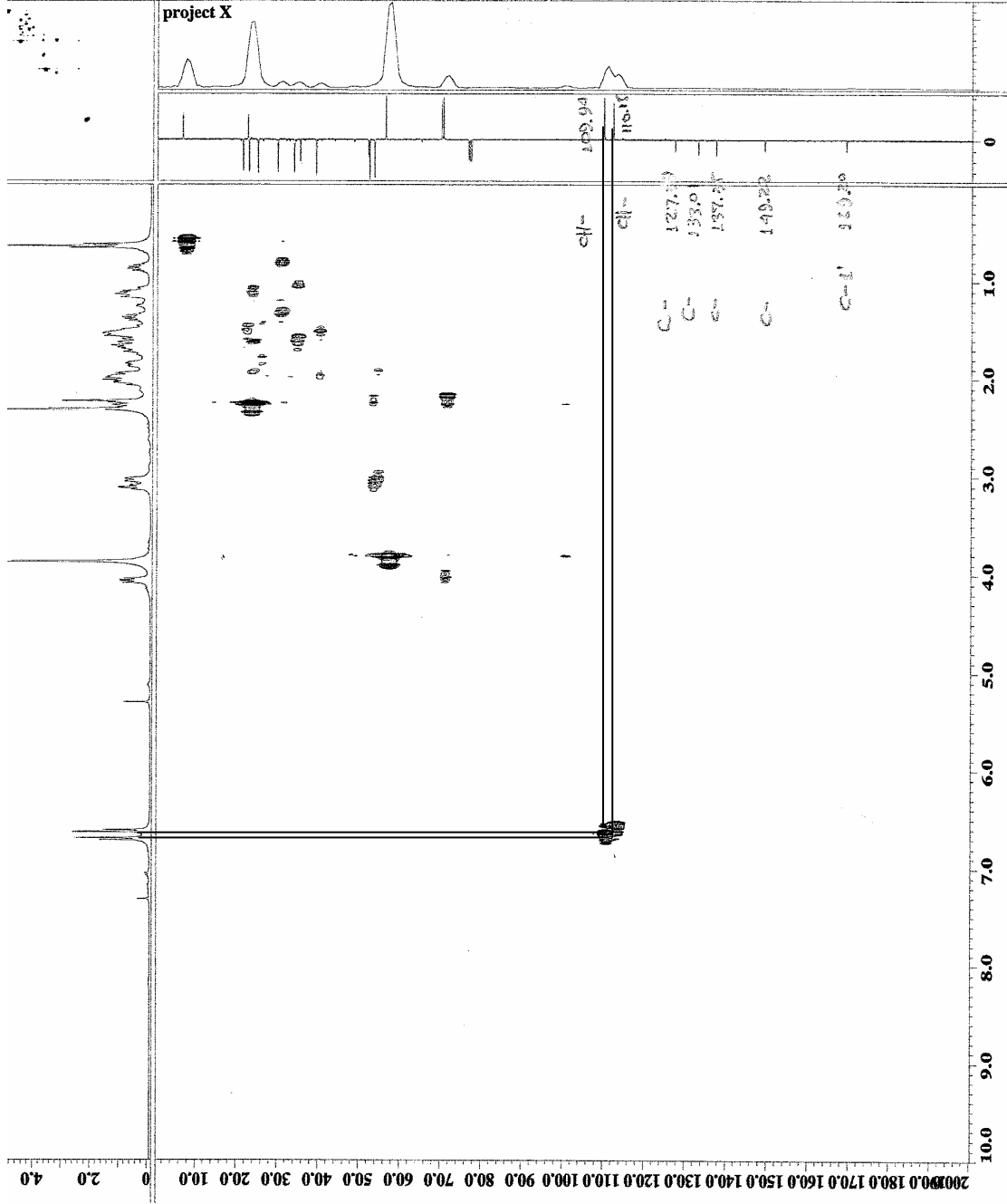
Espectro 42 Ampliação da região de δ_H 0,5-2,6 do espectro de RMN 1H (400 MHz) em $CDCl_3$ do alcalóide (+)-aspidocarpina.



----- ACQUISITION PARAMETERS -----
File Name = 5582030-spt.5
Author = Jan Schripsema
Sample ID = 5582030
Content = APT Experiment
Creation Date = 4-MAY-2005 13:58:35
Revision Date = 5-MAY-2005 10:53:29
Spec Site = Eclipset 400
Spec Type = DIRECTA NMR
Data Format = 1D COMPLEX
Dimensions = X
Dim Title = 13C
Dim Size = 32768
Dim Units = [ppm]
Acq_delay = 38.7 [us]
Changer_sample = 0
Experiment = 95t_swp
F2_offset_strength = 14.7 [us]
Irr90_hi = 23.5 [us]
Irr90_lo = 60 [us]
Irr_domain = 1H
Irr_pwidth = 60 [us]
J_constant = 140 [Hz]
Lock_status = IDLE
Nuc1_gain = 15
Nuc1_offset_delay = 719
Scans = 719
Solvent = CHLOROFORM-D
Spin_set = 16 [Hz]
Spin_lock_90 = 90 [us]
Spin_lock_attn = 12.5 [dB]
Spin_set = 15 [Hz]
Spin_status = SPIN ON
Temp_set = 25 [C]
Temp_status = TEMP ON
X90_hi = 10 [us]
X90_lo = 9.5 [us]
X_acq_duration = 1.3008896 [s]
X_domain = 13C
X_freq = 100.62530333 [MHz]
X_points = 32768
X_prescans = 4
X_pulse = 5 [us]
X_resolution = 0.76870474 [Hz]
X_sweep = 25.18891688 [kHz]



Espectro 43. Espectro de RMN ¹³C (100 MHz-APT) em CDCl₃ do alcalóide (+)-aspidocarpina.

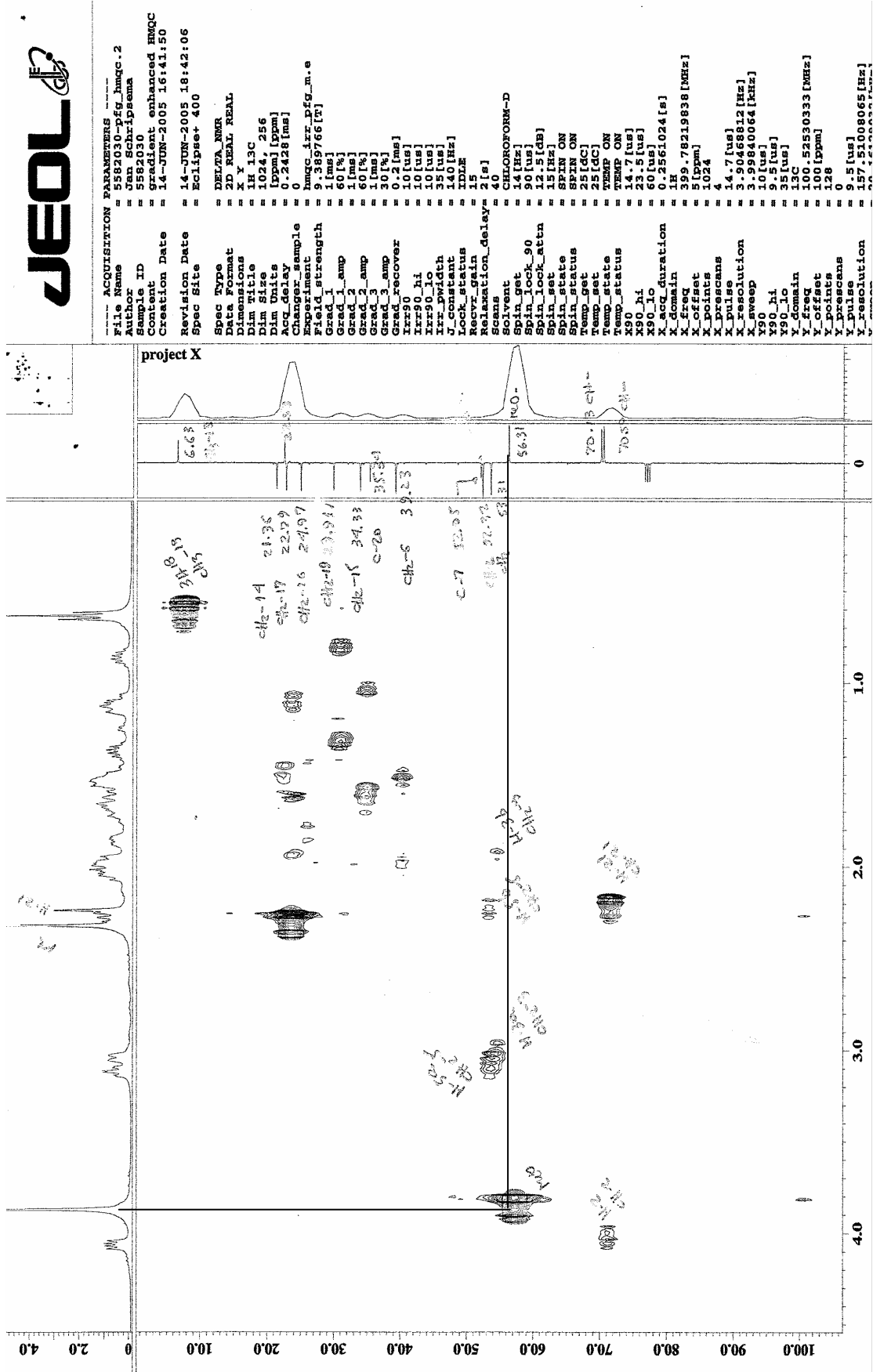


```

----- ACQUISITION PARAMETERS -----
File Name      = 5582030-pfg_hmqc.2
Author        = Ren Schripsema
Date         = 5582030
Content      = 5582030t enhanced HMQC
Creation Date = 14-JUN-2005 16:41:50
Revision Date = 14-JUN-2005 18:42:06
Spec Site    = Eclipse+ 400

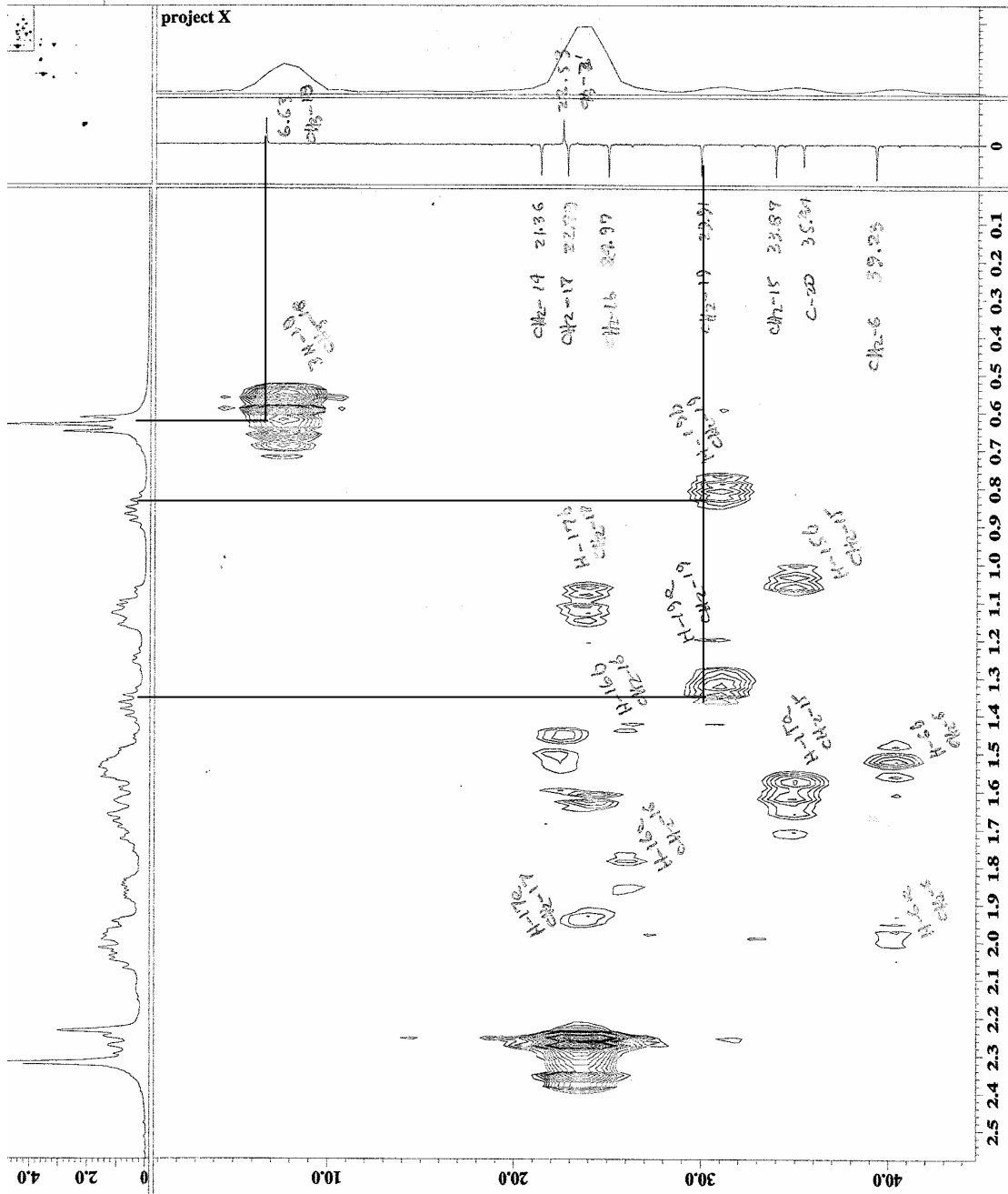
Spec Type    = DELTA_MM8
Data Format  = 2D_REAL_REAL
Pulse Prog  = XY13C
P1          = 1K13C
P2          = 1024, 256
P3          = [ppm] [ppm]
Acq_delay   = 0.2428 [ms]
Changer_sample
Experiment   = hmqc_1zz_pfg_m.e
Field_strength
Grad_1_amp   = 9.389766 [T]
Grad_2_amp   = 60 [%]
Grad_3_amp   = 1 [ms]
Grad_4_amp   = 30 [%]
Grad_5_amp   = 0.2 [ms]
Grad_recovery
Irr90_hi    = 10 [us]
Irr90_lo    = 10 [us]
Irr90_rch   = 30 [us]
Lock_status = 140 [Hz]
Lock_start   = 15
Relaxation_delay = 2 [s]
Scans       = 40
Solvent     = CHLOROFORM-D
Spin_lock_90 = 14 [Hz]
Spin_lock_atn = 90 [us]
Spin_lock_atn = 15 [dB]
Spin_on     = SPIN ON
Spin_status = SPIN ON
Temp_get    = 25 [GC]
Temp_set    = 25 [GC]
Temp_status = TEMP ON
X90_hi     = 14.7 [us]
X90_lo     = 23.5 [us]
X90_rch    = 6 [us]
X_acq_duration = 0.3561024 [s]
X_domain   = 399.78219838 [MHz]
X_freq     = 5 [ppm]
X_offset   = 1024
X_points   = 4
X_prescans = 14.7 [us]
X_resolution = 3.90468812 [Hz]
Y90_lo     = 10 [us]
Y90_hi     = 9.5 [us]
Y_domain   = 35 [us]
Y_freq     = 13C
Y_offset   = 100.52530333 [MHz]
Y_points   = 100 [ppm]
Y_prescans = 128
Y_resolution = 9.5 [us]
Y_sweep    = 157.51008065 [Hz]
Y_sweep    = 20.16120072 [Hz]
  
```

Espectro 44. Mapa de correlação heteronuclear HMQC em CDCl₃ do alcalóide (+)-aspidocarpina.



----- ACQUISITION PARAMETERS -----
 File Name = 5582030-pfg_hmqc.2
 Author = Jen Schripsema
 Sample ID = 5582030
 Count = 43
 Creation Date = 14-JUN-2005 16:41:50
 Revision Date = 14-JUN-2005 18:42:06
 Spec Site = Eclipse+ 400
 Spec Type = DELTA_NMR
 Data Format = 2D REAL REAL
 Dimensions = 1x 13C
 Dim 1 Size = 1024 256
 Dim Units = [ppm] [ppm]
 Acq delay = 0.2428 [ms]
 Changer_sample = hmqc_1rr_pfg_m.e
 Experiment = 9.389766 [T]
 Field_strength = 1 [ms]
 Grad_1_amp = 60 [%]
 Grad_2_amp = 60 [%]
 Grad_3_amp = 1 [ms]
 Grad_3_amp = 30 [%]
 Grad_recover = 0.2 [ms]
 Irr90_hi = 10 [us]
 Irr90_lo = 10 [us]
 Irr_width = 30 [us]
 Lock_status = LOCK
 Recv_gain = 15
 Relaxation_delay = 2 [s]
 Scans = 40
 Solvent = CHLOROFORM-D
 Spin_get = 14 [Hz]
 Spin_lock_90 = 90 [us]
 Spin_lock_attn = 12.5 [dB]
 Spin_set = 35 [ON]
 Spin_on = 35 [ON]
 Spin_status = 25 [DC]
 Temp_get = 25 [DC]
 Temp_set = 25 [DC]
 Temp_status = TEMP ON
 X90_hi = 14.7 [us]
 X90_lo = 23.5 [us]
 X_duration = 18.8561024 [s]
 X_domain = 399.78219838 [MHz]
 X_freq = 5 [ppm]
 X_offset = 1024
 X_prescans = 4
 X_pulse = 14.7 [us]
 X_resolution = 3.90468812 [Hz]
 X_sweep = 3.9840064 [kHz]
 Y90_hi = 9.5 [us]
 Y90_lo = 35 [us]
 Y_domain = 15C
 Y_freq = 100.52530333 [MHz]
 Y_offset = 100 [ppm]
 Y_points = 128
 Y_prescans = 0
 Y_pulse = 9.5 [us]
 Y_resolution = 37.20000000 [Hz]

Espectro 45. Ampliação do mapa de correlação heteronuclear HMQC em CDCl₃ do alcalóide (+)-aspidocarpina.

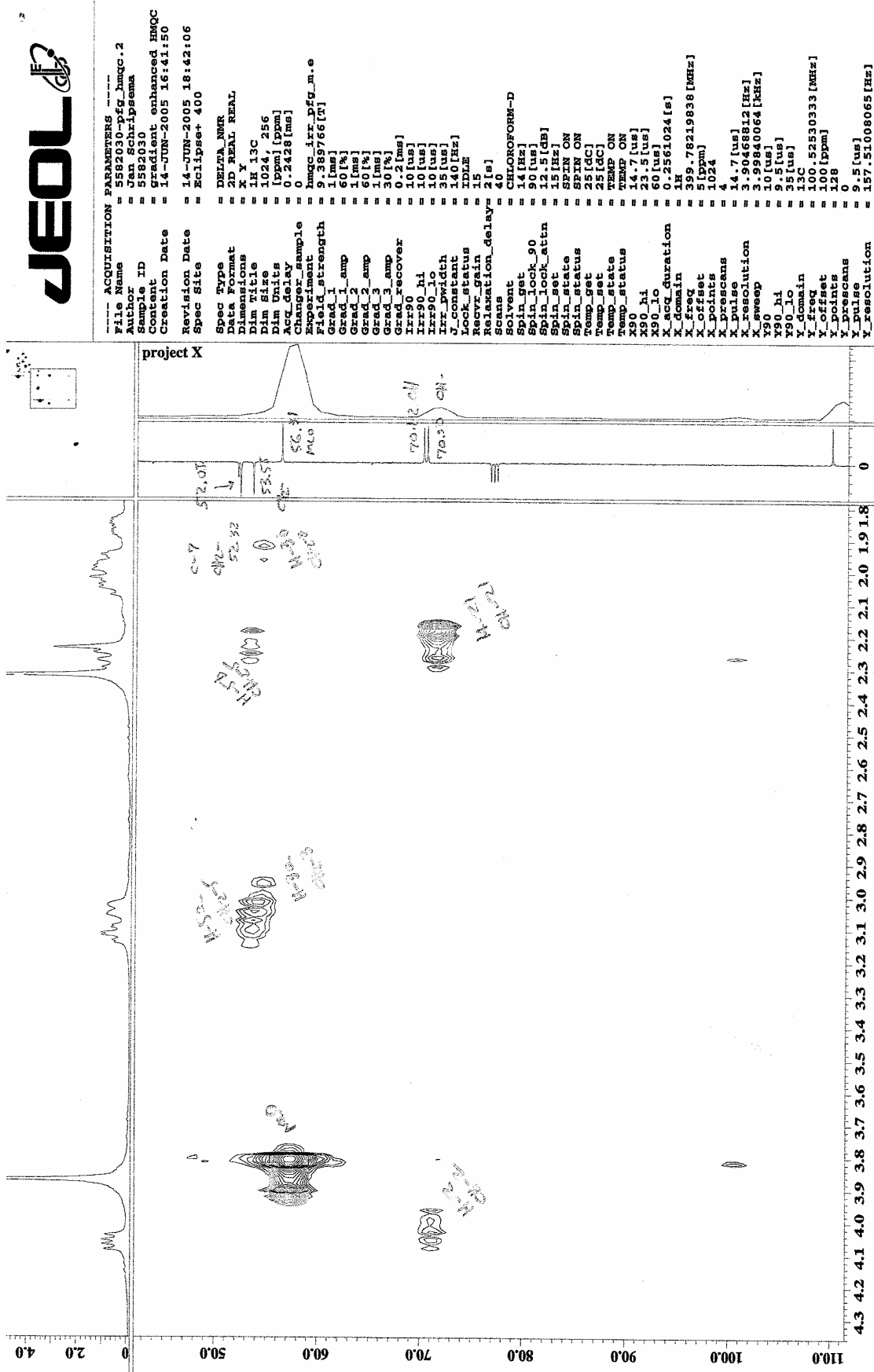


ACQUISITION PARAMETERS

File Name = 5582030-pfg_hmqc.2
 Auth = 5582030
 Sample ID = 5582030
 Content = Gradient enhanced HMQC
 Creation Date = 14-JUN-2005 16:41:50
 Revision Date = 14-JUN-2005 18:42:06
 Spec Site = Eclipse+ 400

Spec Type = DELTA_NMR
 Data Format = X_REAL_REAL
 Dim 1 = 1H 13C
 Dim 2 = 1024 256
 Dim Units = [ppm] [ppm]
 Acq Delay = 0.2428 [ms]
 Changer_Sample = 0
 Experiment = hmqc_1rr_pfg_m.e
 Field Strength = 9.385766 [T]
 Grad_1_amp = 1 [ms]
 Grad_2_amp = 1 [ms]
 Grad_3_amp = 60 [%]
 Grad_3_amp = 1 [ms]
 Grad_3_amp = 30 [%]
 Grad_recover = 0.2 [ms]
 Irr90 = 10 [us]
 Irr90_lo = 10 [us]
 Irr90_hi = 10 [us]
 Lock Status = 140 [Hz]
 Lock Status = TDLE
 Recvx Gain = 15
 Relaxation_delay = 2 [s]
 Scans = 40
 Solvent = CHLOROFORM-D
 Spin_lock_90 = 14 [Hz]
 Spin_lock_attn = 90 [us]
 Spin_lock_attn = 1.5 [dB]
 Spin_status = SPIN ON
 Spin_status = SPIN ON
 Temp_get = 25 [dC]
 Temp_set = 25 [dC]
 Temp_status = TEMP ON
 X90_lo = 14.7 [us]
 X90_hi = 23.5 [us]
 X90_lo = 60 [us]
 X_domain = 17.5501024 [s]
 X_freq = 399.78219838 [MHz]
 X_offset = 5 [ppm]
 X_points = 1024
 X_prescans = 4
 X_pulse = 14.7 [us]
 X_resolution = 3.90468812 [Hz]
 X_sweep = 3.99840064 [kHz]
 Y90_lo = 50 [us]
 Y90_hi = 35 [us]
 Y_domain = 13C
 Y_freq = 100.52530333 [MHz]
 Y_offset = 100 [ppm]
 Y_points = 128
 Y_prescans = 0
 Y_pulse = 9.5 [us]
 Y_resolution = 237.21008055 [kHz]

Espectro 46. Ampliação do mapa de correlação heteronuclear HMQC em CDCl_3 do alcalóide (+)-aspidocarpina.



```

---- ACQUISITION PARAMETERS ----
File Name      = 5582030-pfg_hmqc.2
Author        = Jan Schripsema
Sample ID     = 5582030
Experiment    = 5582030 enhanced HMQC
Creation Date = 14-JUN-2005 16:41:50
Revision Date = 14-JUN-2005 18:42:06
Spec Site    = Eclipse 400

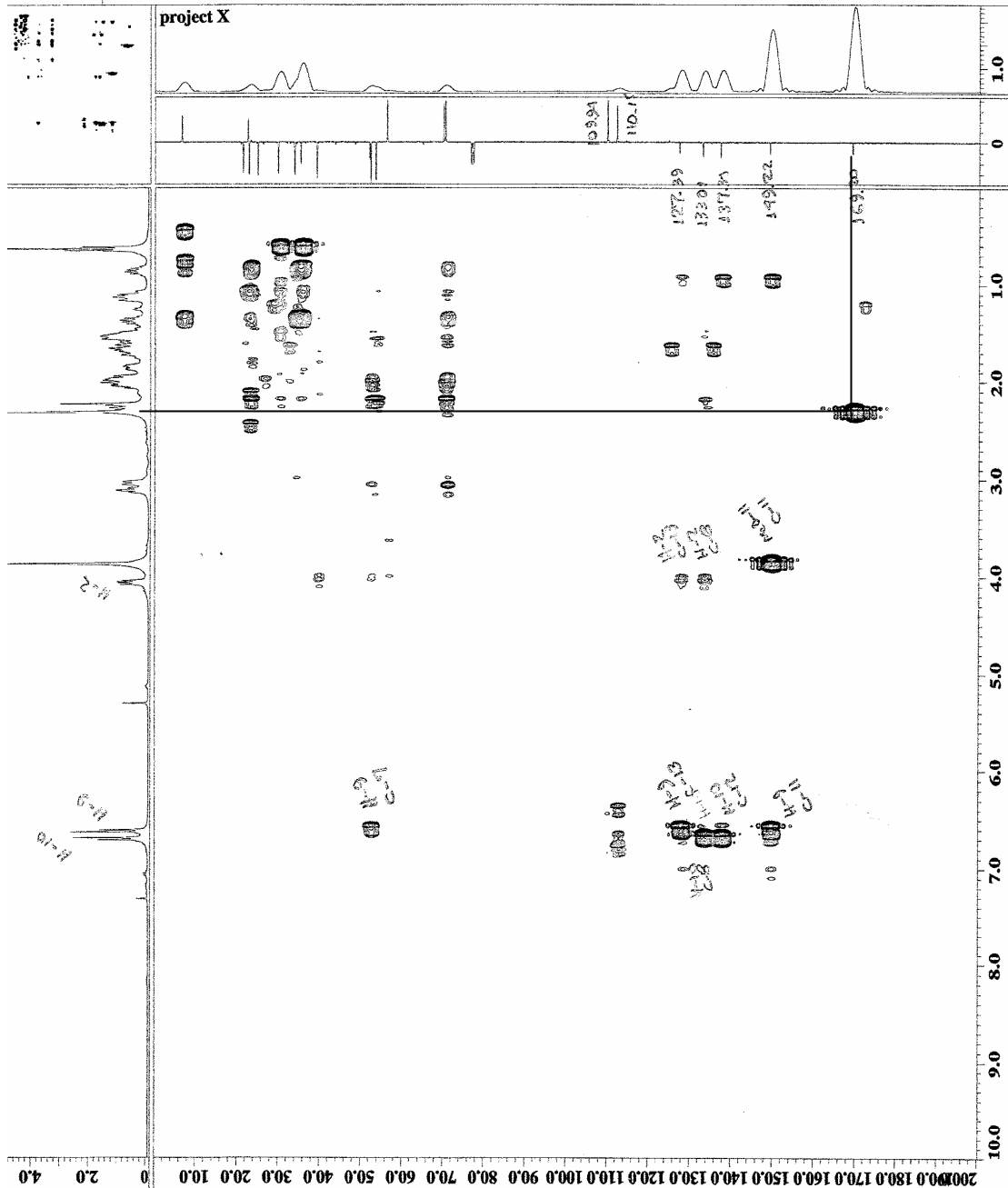
Spec Type     = DELTA_NMR
Data Format   = 2D REAL REAL
Dimensions   = X Y
Dim Site     = 1H 13C
Dim Units    = [ppm] [ppm]
Acq delay    = 0.2428 [ms]
Changer_sample = hmqc_1rr_pfg_m.e
Experiment   = 9.389766 [T]
Field_strength = 1 [ms]
Grad 1 amp   = 60 [%]
Grad 2 amp   = 10 [%]
Grad 3 amp   = 10 [%]
Grad 4 amp   = 30 [%]
Grad 5 amp   = 30 [%]
Grad 6 amp   = 0.2 [ms]
Irr90        = 10 [us]
Irr90_lo     = 10 [us]
Irr90_hi     = 10 [us]
Irr_pwidth   = 35 [us]
J_constant   = 140 [Hz]
Lock_status  = 1 [ppm]
Relaxation_delay = 2 [s]
Scans        = 40
Solvent      = CHLOROFORM-D
Spin_get     = 14 [Hz]
Spin_lock_90 = 90 [us]
Spin_lock_attn = 12.5 [dB]
Spin_set     = 15 [Hz]
Spin_status  = SPIN ON
Temp_get     = 25 [degC]
Temp_set     = 25 [degC]
Temp_status  = TEMP ON
Temp_status  = TEMP ON
X90_lo       = 14.7 [us]
X90_hi       = 23.5 [us]
X_acq_duration = 0.2561024 [s]
X_domain     = 18
X_offset     = 59.78219898 [MHz]
X_points     = 1024
X_prescans   = 4
X_pulse      = 14.7 [us]
X_resolution = 3.90468812 [Hz]
X_sweep      = 3.98840064 [kHz]
Y90_lo       = 10 [us]
Y90_hi       = 9.5 [us]
Y_acq_duration = 25 [us]
Y_offset     = 100
Y_freq       = 100.52530333 [MHz]
Y_points     = 100 [ppm]
Y_prescans   = 128
Y_pulse      = 0
Y_resolution = 9.5 [us]
Y_sweep      = 157.51008065 [Hz]
  
```

Espectro 47. Ampliação do mapa de correlação heteronuclear HMQC em CDCl_3 do alcalóide (+)-aspidocarpina.

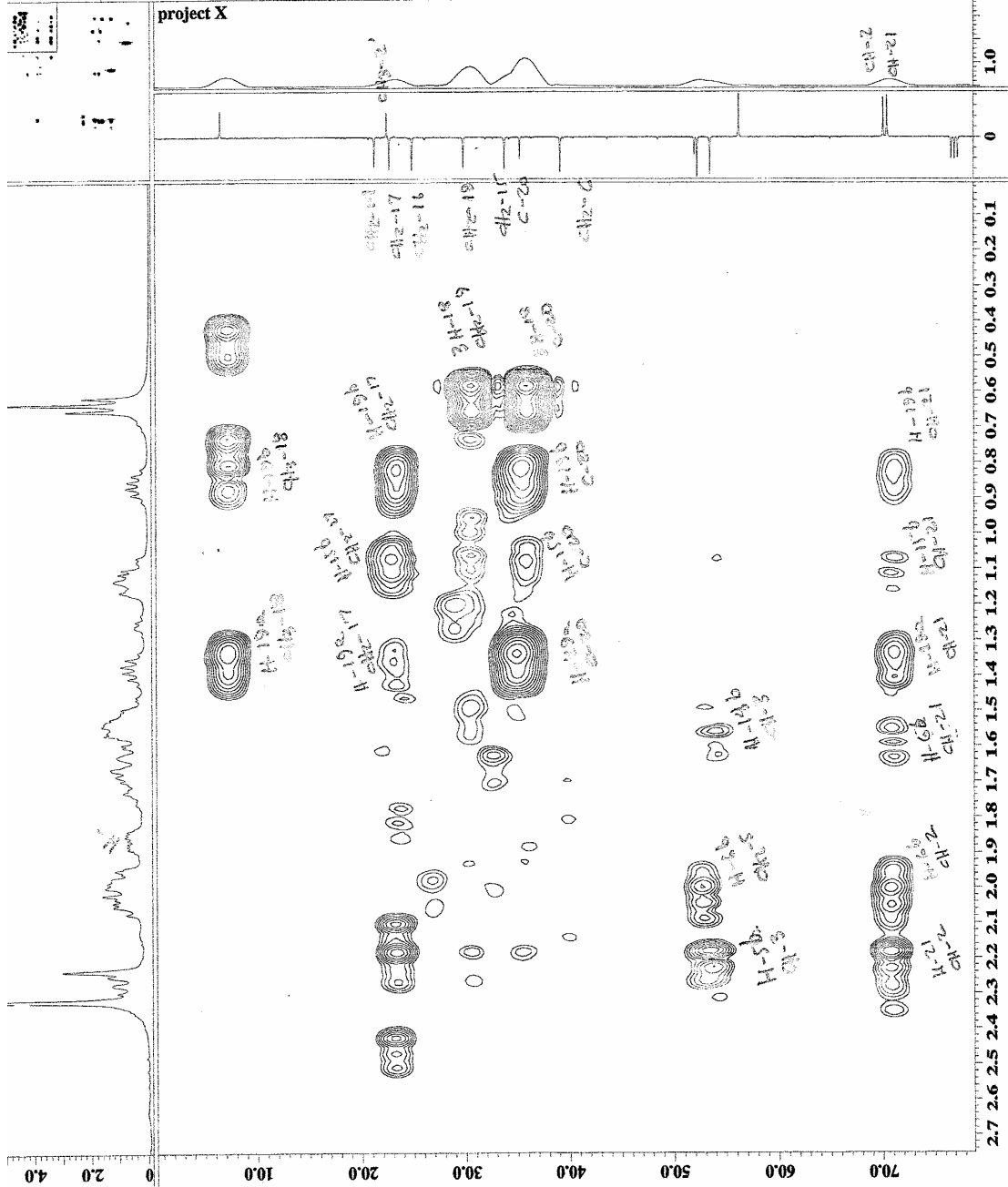


ACQUISITION PARAMETERS
File Name = 5582030-mpg_hmbc.2
Author = Van Schripsema
Sample ID = 5582030
Content = Gradient enhanced HMB
Creation Date = 14-JUN-2005 13:27:52
Revision Date = 14-JUN-2005 15:28:10
Spec Site = Eclipse+ 400

Spec Type = HMB NMR
Spec Freq = 200
Dim X = REAL
Dim Y = REAL
Dim Z = REAL
Dim Title = 1H 13C
Dim Size = 1024, 512
Dim Units = [ppm] [ppm]
Acq_delay = 0.2428 [ms]
Changer_sample = 0
Experiment = hmbc_pfg_m_exp
Field_strength = 9.385766 [T]
Grad_1_amp = 60 [%]
Grad_2_amp = 1 [ms]
Grad_3_amp = 60 [%]
Grad_recover = 30 [%]
Irr90_hi = 10 [us]
Irr90_lo = 10 [us]
Lock_status = 140 [Hz]
Lock_range_j = 8 [Hz]
Recv_gain = 15
Relaxation_delay = 2 [s]
Scans = 40
Solvent = CHLOROFORM-D
Spin_get = 14 [Hz]
Spin_lock_90 = 10 [us]
Spin_lock_atn = 15 [dB]
Spin_set_atn = 15 [dB]
Spin_status = SPIN ON
Temp_get = 25 [dc]
Temp_set = 25 [dc]
Temp_status = TEMP ON
X90_hi = 14.7 [us]
X90_lo = 28.5 [us]
X_acq_duration = 0.2561024 [s]
X_domain = 1H
X_freq = 399.78219838 [MHz]
X_offset = 5 [ppm]
X_points = 1024
X_prescans = 4
X_pulse = 14.7 [us]
X_resolution = 3.9468812 [Hz]
X_sweep = 1.07940064 [kHz]
Y90_hi = 9.5 [us]
Y90_lo = 35 [us]
Y_domain = 13C
Y_freq = 100.52830333 [MHz]
Y_offset = 100 [ppm]
Y_points = 128
Y_prescans = 0
Y_pulse = 9.5 [us]



Espectro 48. Mapa de correlação heteronuclear HMB em CDCl_3 do alcalóide (+)-aspidocarpina.

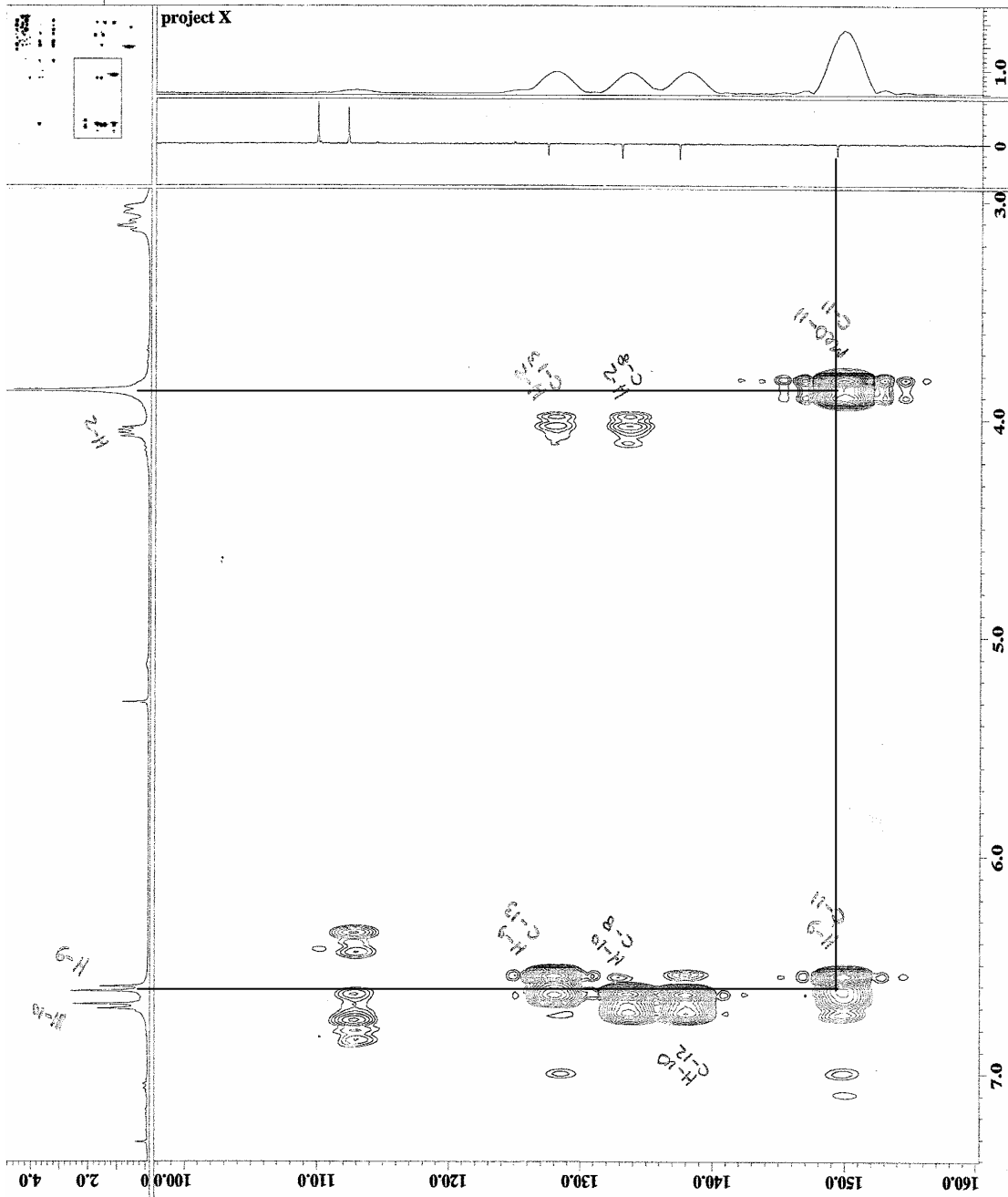


```

---- ACQUISITION PARAMETERS ----
File Name      = 5582030-pfg_hmbc.2
Author        = Jan Schripsema
Sample ID     = 5582030
Content       = gradient enhanced HMBC
Creation Date = 14-JUN-2005 13:27:52
Revision Date = 14-JUN-2005 15:28:10
Spec Site     = Eclipse 400

Spec Type     = DELTA NMR
Data Format    = 2D REAL REAL
Dimensions    = X Y
Dim Title     = 1H 13C
Dim Size      = 1024, 512
Dim Units     = [ppm], [ppm]
Acq_delay     = 0.2428 [ms]
Changer_sample = hmbc.pfg.m.exp
Field_strength = 9.389766 [T]
Grad_1_amp    = 1 [ms]
Grad_2_amp    = 60 [%]
Grad_3_amp    = 1 [ms]
Grad_4_amp    = 60 [%]
Grad_5_amp    = 30 [%]
Grad_6_amp    = 10 [%]
Grad_7_amp    = 10 [%]
Grad_8_amp    = 10 [%]
Irr90_hi      = 10 [us]
Irr90_lo      = 10 [us]
Irr90_width   = 35 [us]
J_constant    = 140 [Hz]
Lock_status   = IDLE
Long_range    = 8 [Hz]
Recvr_gain    = 15
Relaxation_delay = 40 [s]
Solvent       = CHLOROFORM-D
Spin_lock     = 14 [Hz]
Spin_lock_90 = 90 [us]
Spin_lock_attn = 12.5 [dB]
Spin_set      = 15 [Hz]
Spin_status   = SPIN ON
Temp_set      = 25 [C]
Temp_status   = TEMP ON
X90_hi        = 14.7 [us]
X90_lo        = 23.5 [us]
X90_domain    = 0.2561024 [s]
X_acq_duration = 1H
X_freq        = 99.78219836 [MHz]
X_gamma       = 1024
X_prescans    = 4
X_pulse       = 14.7 [us]
X_resolution  = 3.90468812 [Hz]
X_sweep       = 3.99840064 [kHz]
X90_hi        = 10 [us]
X90_lo        = 9.5 [us]
X90_domain    = 100
X_gamma       = 100
X_prescans    = 100 [ppm]
X_pulse       = 128
Y_pulse       = 9.5 [us]
Y_resolution  = 157.51008065 [Hz]
  
```

Espectro 49. Ampliação do mapa de correlação heteronuclear HMBC em CDCl_3 do alcalóide (+)-aspidocarpina.



----- ACQUISITION PARAMETERS -----
File Name = 5582030-pfg_hmbc.2
Sample = 5582030
Sample ID = 5582030
Content = Gradient enhanced HMB
Creation Date = 14-JUN-2005 13:27:52
Revision Date = 14-JUN-2005 15:28:10
Spec Site = Eclipse+ 400
Spec Type = DELTA_NMR
Data Format = 2D_REAL_REAL
Swept = 1
Dim 1 Size = 1K 13C
Dim 2 Size = 1024 512
Acq Units = [ppm] [ppm]
Acq Delay = 0.2428 [ms]
Changer_sample = 0
Experiment = hmbc_pfg_m_exp
Field_strength = 9.385766 [T]
Grad_1_amp = 1 [ms]
Grad_1_phase = 0 [deg]
Grad_2_amp = 60 [ms]
Grad_2_phase = 60 [deg]
Grad_3_amp = 1 [ms]
Grad_3_phase = 30 [deg]
Grad_recover = 1 [ms]
Irr90_hi = 10 [us]
Irr90_lo = 10 [us]
Irr_width = 3 [us]
Lock_status = 1 [kHz]
Lock_range_j = 8 [kHz]
Recvr_gain = 15
Relaxation_delay = 2 [s]
Scans = 40
Solvent = CHLOROFORM-D
Spin_get = 14 [Hz]
Spin_lock_90 = 90 [us]
Spin_lock_atn = 12.5 [dB]
Spin_status = SPIN ON
Temp_get = 25 [degC]
Temp_set = 25 [degC]
Temp_status = TEMP ON
X90_hi = 14.7 [us]
X90_lo = 23.5 [us]
X_duration = 60 [us]
X_gain = 18.2561024 [s]
X_freq = 399.78219838 [MHz]
X_offset = 5 [ppm]
X_points = 1024
X_prescans = 4
X_pulse = 14.7 [us]
X_resolution = 3.90468812 [Hz]
X_sweep = 3.99840064 [kHz]
Y90_hi = 10 [us]
Y90_lo = 35 [us]
Y_domain = 13C
Y_freq = 100.52530333 [MHz]
Y_offset = 100 [ppm]
Y_points = 128
Y_prescans = 0
Y_pulse = 9.5 [us]

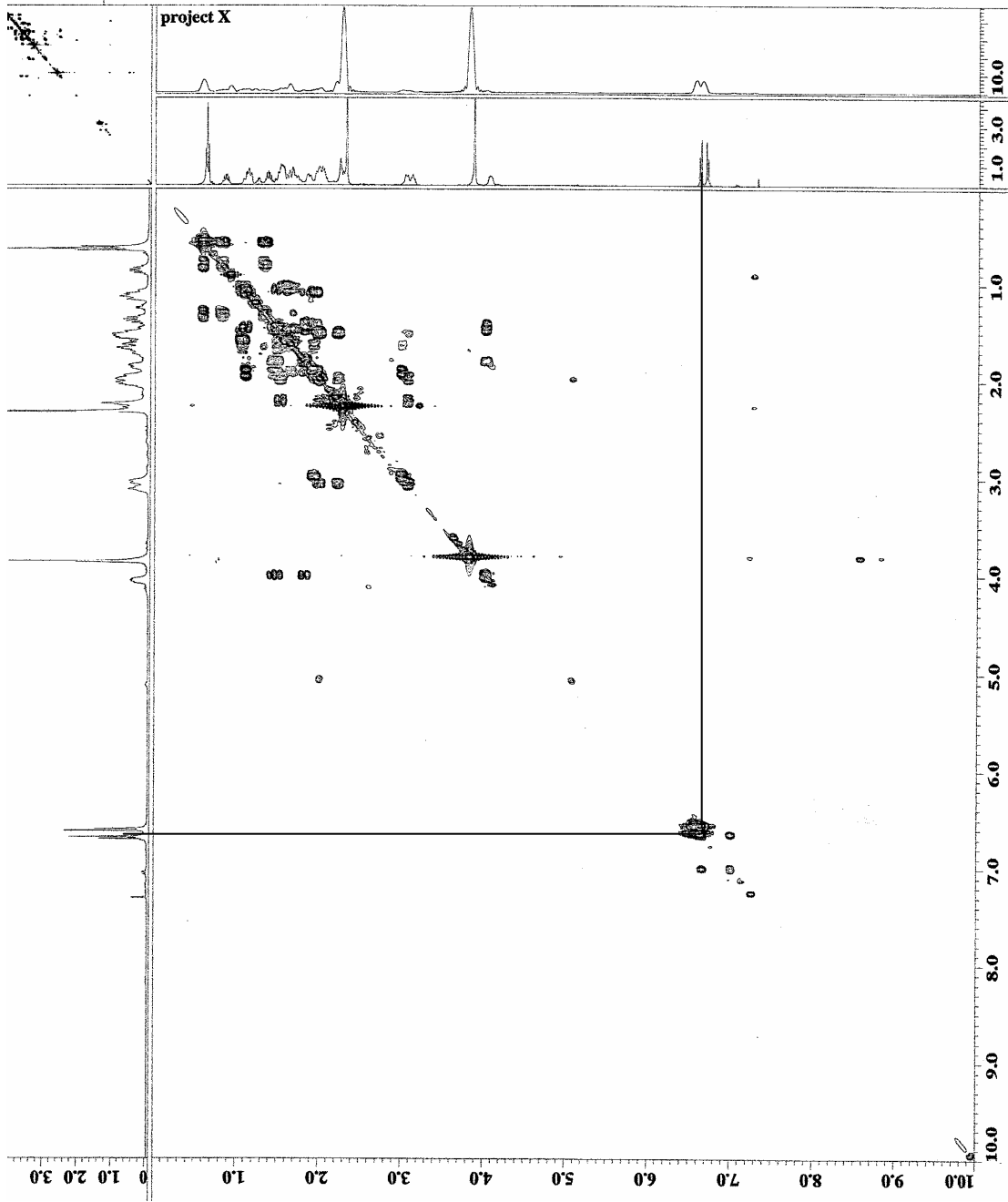
Espectro 50. Ampliação do mapa de correlação heteronuclear HMB em CDCl₃ do alcalóide (+)-aspidocarpina.


```

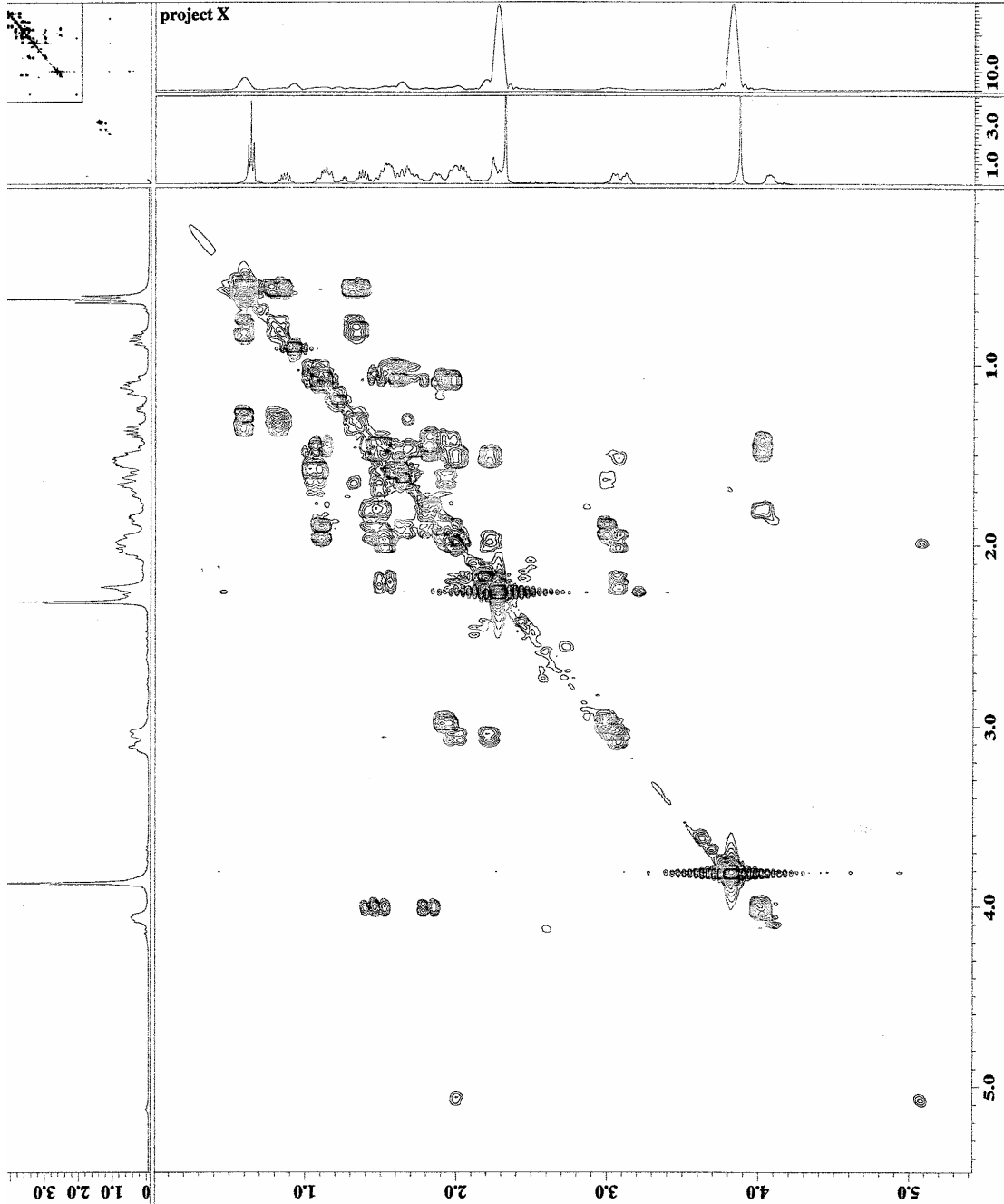
----- ACQUISITION PARAMETERS -----
File Name      = 5582030cosy.2
Author        = J Schiripenna
Sample ID     = 5582030
Content       = absolute value COSY
Creation Date = 29-JUN-2005 07:54:26
Revision Date = 29-JUN-2005 09:54:43
Spec Site    = Eclipse400

Spec Type    = DELTA_NMR
X1           = X REAL REAL
Dimensions   = 1H 1H
Dim Title    = 512, 1024
Dim Units    = [ppm] [ppm]
Acq_delay    = 0.2428 [ms]
Changer_sample = 0
Experiment    = cosy.exp
Field_strength = 9.389766 [T]
Irr90_hi     = 24.5 [us]
Irr90_lo     = 60 [us]
Irr_width    = 60 [us]
Lock_status  = IDLE
Recvz_gain   = 15
Relaxation_delay = 1.5 [s]
Scans        = 136
Solvent      = CHLOROFORM-D
Spin_lock    = 90
Spin_lock_atn = 12.5 [dB]
Spin_set     = 15 [Hz]
Spin_status  = SPIN ON
Temp_set     = 25 [dC]
Temp_status  = TEMP ON
X90_hi      = 24.5 [us]
X90_lo      = 60 [us]
X_acq_duration = 0.1280512 [s]
X_domain     = 1H
X_freq       = 399.78219838 [MHz]
X_offset     = 5 [ppm]
X_points     = 512
X_prescans   = 4
X_pulse_width = 4.7 [us]
X_resolution = 7.6037628 [Hz]
X_sweep      = 3.98840064 [kHz]
Y90         = 10 [us]
Y90_hi      = 10 [us]
Y90_lo      = 50 [us]
Y_domain     = 1H
Y_freq       = 399.78219838 [MHz]
Y_offset     = 5 [ppm]
Y_points     = 256
Y_prescans   = 1
Y_resolution = 15.6187528 [Hz]
Y_sweep      = 3.98840064 [kHz]

```



Espectro 51. Mapa de correlação homonuclear ¹H-¹H-COSY em CDCl₃ do alcalóide (+)-aspidocarpina.



```

----- ACQUISITION PARAMETERS -----
File Name      = 552010
Author        = Jan Schripsema
Sample ID     = 552030
Content       = absolute value COSY
Creation Date = 29-JUN-2005 07:54:26
Revision Date = 29-JUN-2005 09:54:43
Spec Site     = Eclipse+ 400

Spec Type     = DELTA_NMR
Pulse Program = 2D_REAL_REAL
Dimensions    = X Y
Dim 1 Size   = 1K 1K
Dim 2 Size   = 512, 1024
Dim 1 Units  = [ppm] [ppm]
Acq_delay    = 0.2428 [ms]
Changer_sample = 0
Experiment    = cosy.exp
Field_strength = 1.39766 [T]
F2_offset    = 14.7 [us]
F2_resolution = 23.5 [us]
F2_swept     = 60 [us]
F2_start     = 60 [us]
F2_stop      = 60 [us]
F2_width     = 60 [us]
Lock_status  = IDLE
Recvr_gain   = 15
Relaxation_delay = 1.5 [s]
Scans        = 136
Solvent      = CHLOROFORM-D
Spin_lock    = 90 [us]
Spin_lock_90 = 90 [us]
Spin_lock_attn = 12.5 [dB]
Spin_set     = 15 [Hz]
Spin_status  = SPIN ON
Temp_get     = 25 [dC]
Temp_set     = 25 [dC]
Temp_status = TEMP ON
X90_offset   = 14.7 [us]
X90_resolution = 23.5 [us]
X90_start    = 60 [us]
X90_stop     = 60 [us]
X90_width    = 60 [us]
X_acq_duration = 0.1280512 [s]
X_domain     = 399.78219838 [MHz]
X_freq       = 5 [ppm]
X_offset     = 512
X_points     = 4
X_resolution = 14.7 [us]
X_sweep      = 7.8037625 [kHz]
Y50         = 3.99840064 [kHz]
Y90         = 10 [us]
Y90_offset  = 10 [us]
Y90_resolution = 50 [us]
Y_domain     = 1K
Y_freq       = 399.78219838 [MHz]
Y_offset     = 5 [ppm]
Y_points     = 256
Y_resolution = 15.6187525 [kHz]
Y_sweep      = 3.99840064 [kHz]

```

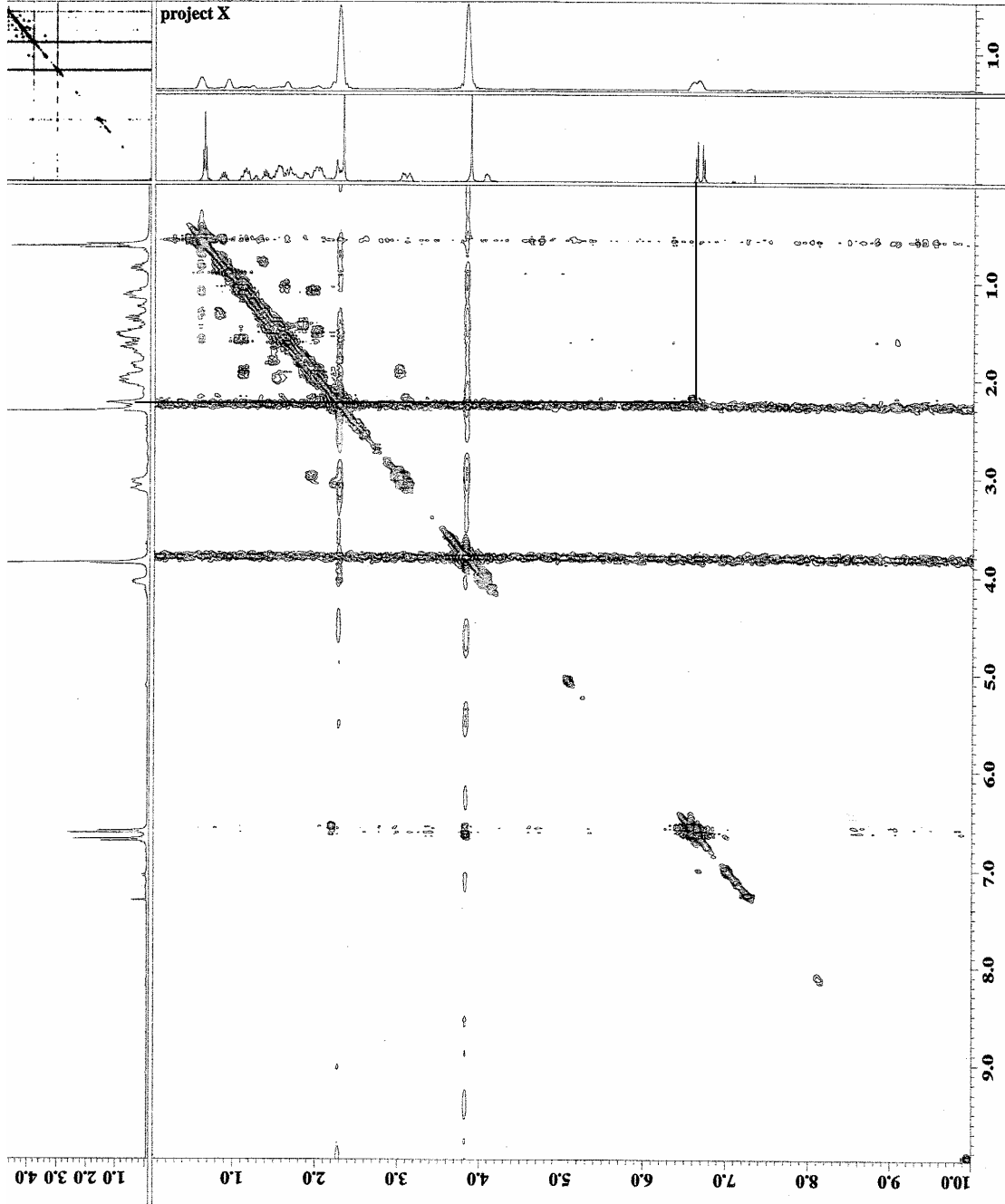
Espectro 52. Ampliação do mapa de correlação homonuclear ¹H-¹H-COSY em CDCl₃ do alcalóide (+)-aspidocarpina.

```

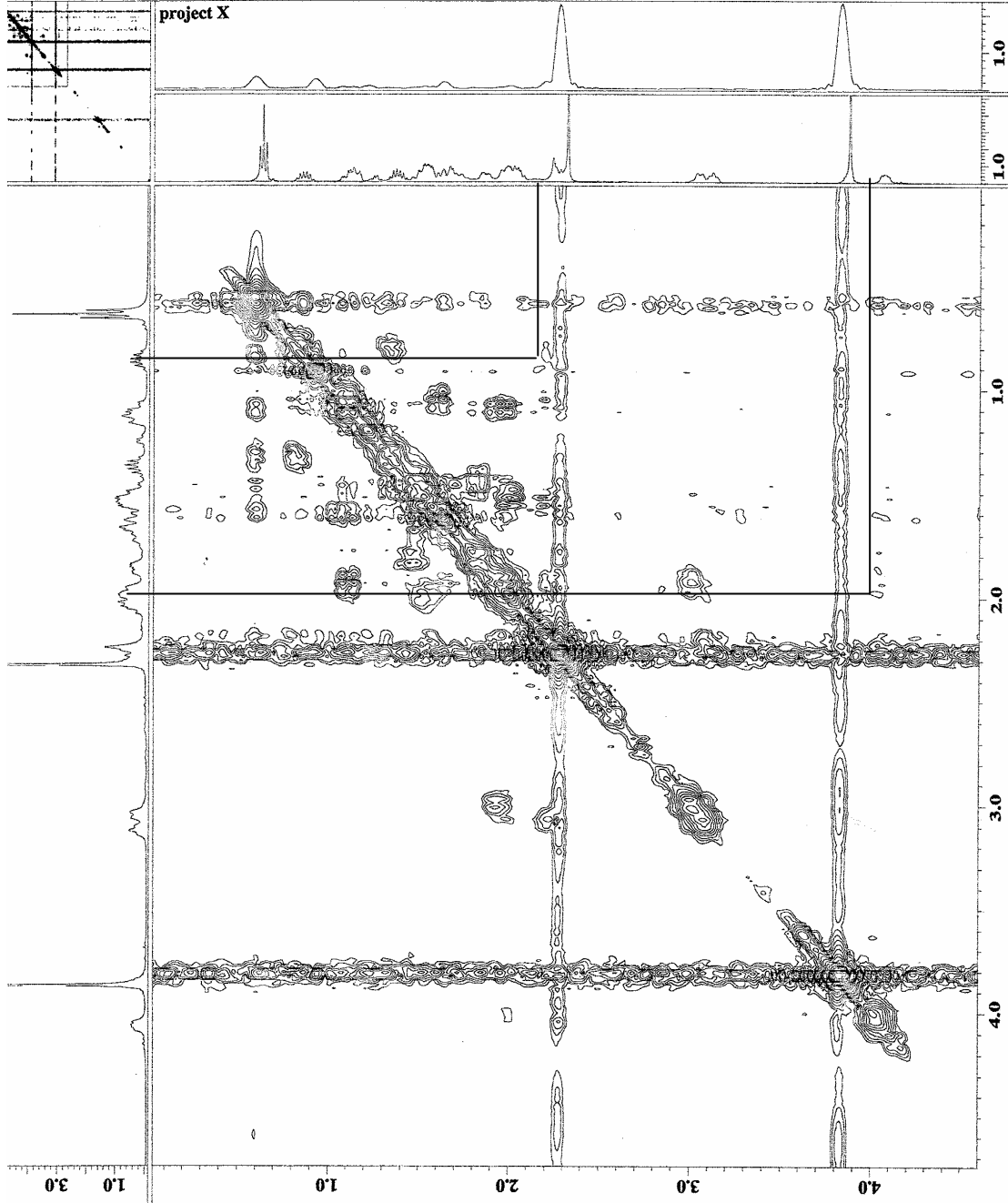
----- ACQUISITION PARAMETERS -----
File Name       = 252220-noesy.2
Sample ID      = 5582030
Content        = absolute value noesy
Creation Date   = 13-JUL-2005 10:52:45
Revision Date  = 13-JUL-2005 12:53:03
Spec Site     = Eclipse+ 400

Spec Type    = DELTA_NMR
P1           = 1.500 [s]
P2           = 1.500 [s]
X Y REAL     = X Y REAL REAL
Dim 1       = 1H 1H
Dim 2       = 512, 1024
Dim Units   = [ppm] [ppm]
Acq_delay   = 0.2428 [ms]
Changer_sample = 0
noesy_exp   = 0
Experiment   = noesy_exp
Field_strength = 9.385766 [T]
Irr90_lo    = 24.5 [us]
Irr90_hi    = 24.5 [us]
Irr20_lo    = 60 [us]
Irr20_hi    = 60 [us]
Irr_pwidth  = 60 [us]
Lock_status = 60 [us]
Recvr_gain  = 15
Relaxation_delay = 1.5 [s]
Scans       = 16
Solvent     = CHLOROFORM-D
Spin_get    = 14 [Hz]
Spin_lock_90 = 12.5 [dB]
Spin_lock_attn = 15 [Hz]
Spin_set    = 15 [Hz]
Spin_ON     = SPIN ON
Spin_status = SPIN ON
Temp_get    = 25 [dC]
Temp_set    = 25 [dC]
Temp_status = TEMP ON
Temp_ON     = TEMP ON
X90_lo     = 24.5 [us]
X90_hi     = 24.5 [us]
X90_lo     = 60 [us]
X90_hi     = 60 [us]
X_acq_duration = 0.1280512 [s]
X_domain    = 1H
X_freq      = 399.78219838 [MHz]
X_offset    = 5 [ppm]
X_points    = 512
X_prescans  = 4
X_pulse     = 14.7 [us]
X_resolution = 3.99840064 [kHz]
X_sweep     = 3.99840064 [kHz]
Y90_lo     = 10 [us]
Y90_hi     = 10 [us]
Y90_lo     = 50 [us]
Y90_hi     = 50 [us]
Y_domain    = 1H
Y_freq      = 399.78219838 [MHz]
Y_offset    = 5 [ppm]
Y_points    = 256
Y_resolution = 15.5187525 [kHz]
Y_sweep     = 3.99840064 [kHz]

```



Espectro 53. Mapa de correlação homonuclear ^1H - ^1H -NOESY em CDCl_3 do alcalóide (+)-aspidocarpina.



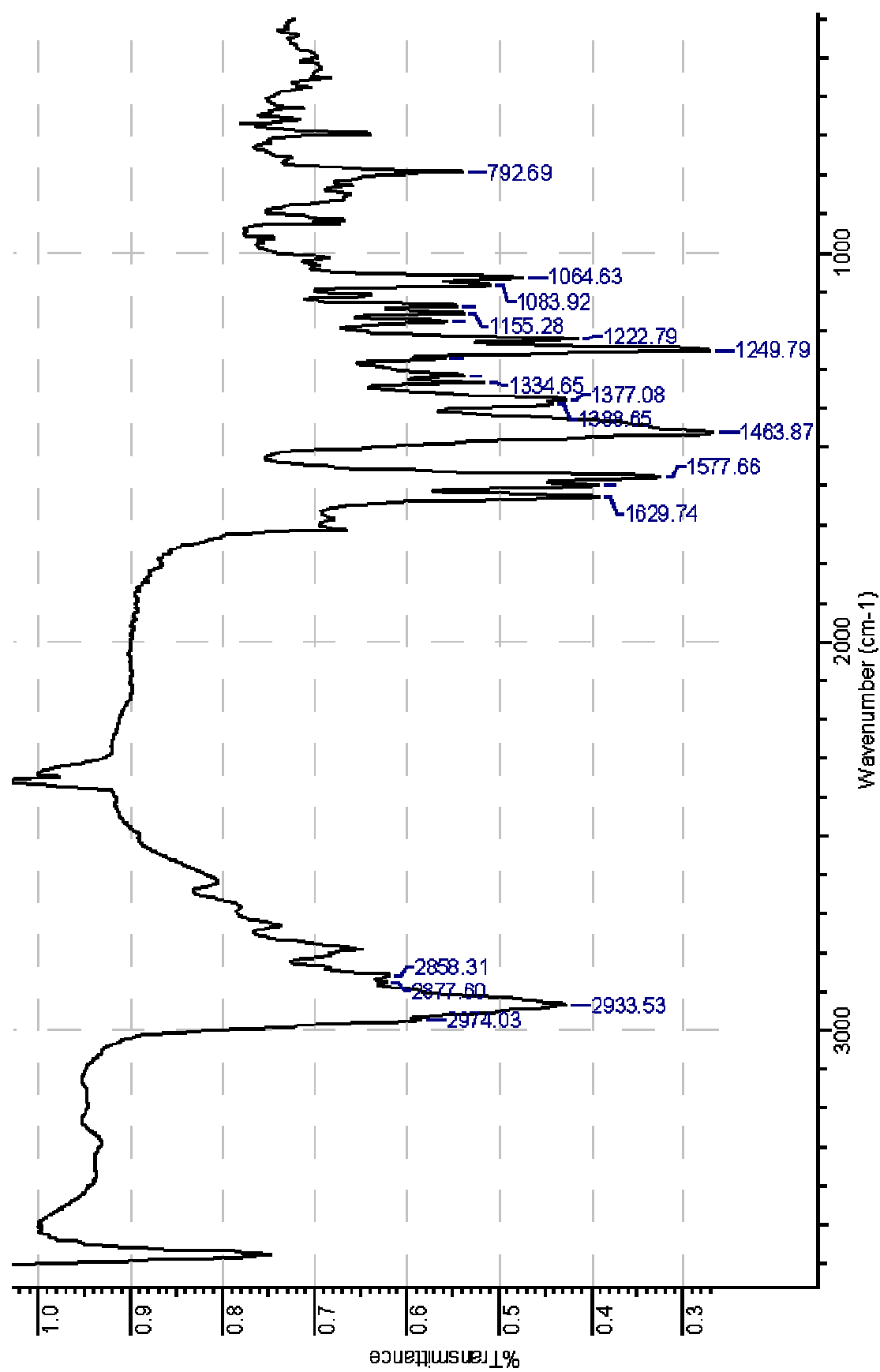
JEOL

```

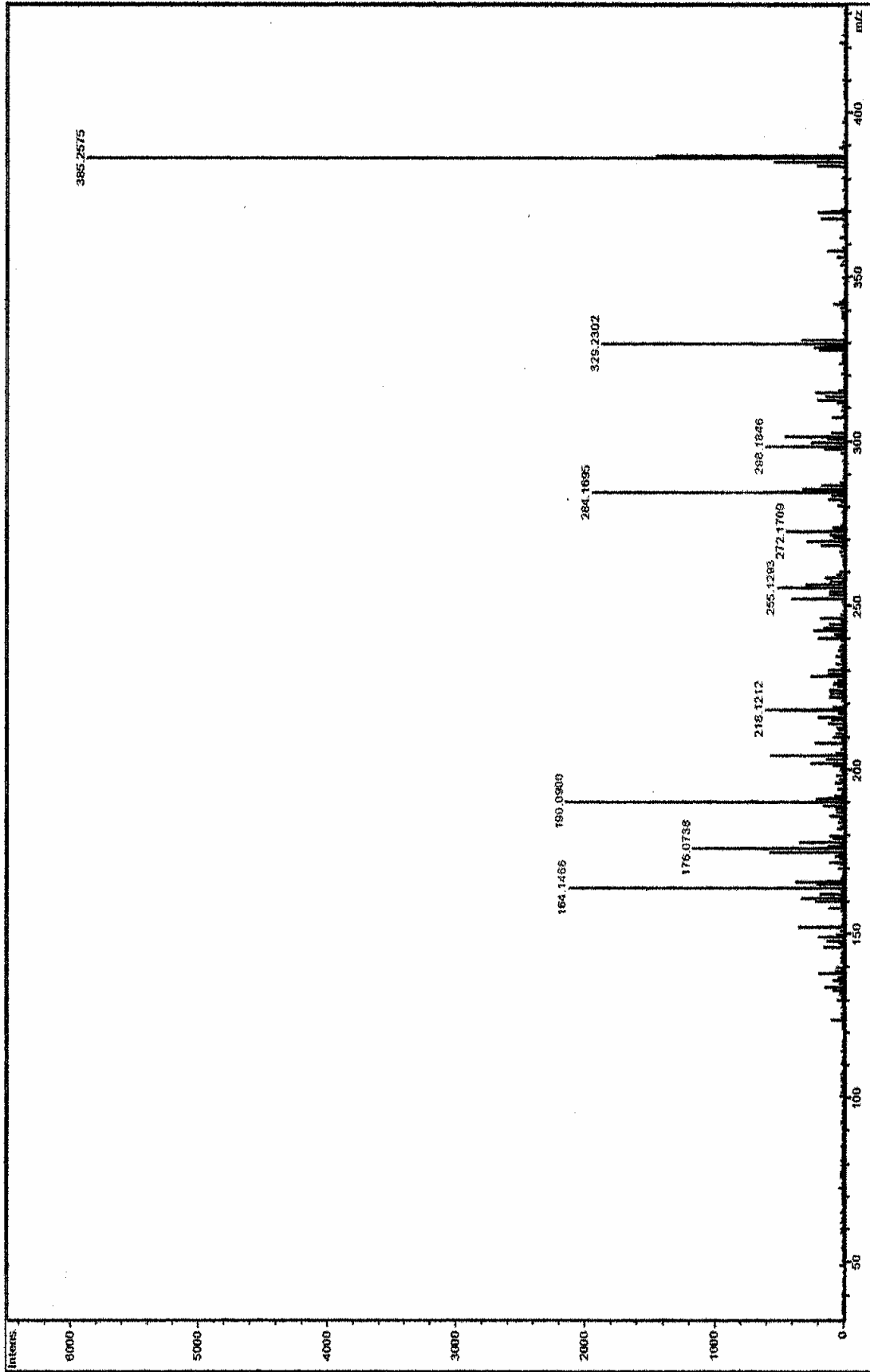
----- ACQUISITION PARAMETERS -----
File Name      = 5582030-noesy.2
Author        = Jan Schripsema
Sample ID     = 5582030
Content       = absolute value noesy
Creation Date = 13-JUL-2005 10:52:45
Revision Date = 21-JUL-2005 10:47:27
Spec Site     = Eclipse 400

Spec Type     = DELTA NMR
Data Format    = 2D REAL REAL
Dimensions    = X Y
Dim Title     = 1H 1H
Dim Size      = 512, 1024
Dim Units     = [ppm],[ppm]
Acq_delay     = 0.2428[ms]
Name_of_sample = noesy_exp
Name_of_sample = 9.389766[F]
Field_strength = 14.7[us]
Irr90_hi     = 23.5[us]
Irr90_lo     = 60[us]
Irr_width    = 60[us]
Lock_status   = IDLE
Recvr_gain    = 15
Relaxation_delay = 1.5[s]
Solve        = CUCOLORFORM-D
Spin_get     = 14[Hz]
Spin_lock_90 = 90[us]
Spin_lock_attn = 12.5[db]
Spin_set     = 15[Hz]
Spin_status   = SPIN ON
Temp_get     = 25[dc]
Temp_set     = 25[dc]
Temp_status   = TEMP ON
X90_hi       = 14.7[us]
X90_lo       = 23.5[us]
X_acq_duration = 60[us]
X_domain     = 0.1280512[s]
X_freq       = 399.78219838 [MHz]
X_offset     = 5[ppm]
X_points     = 212
X_pulses     = 14.7[us]
X_resolution = 7.80937625[Hz]
Y90          = 10[us]
Y90_hi       = 10[us]
Y90_lo       = 50[us]
Y_domain     = 399.78219838 [MHz]
Y_freq       = 5[ppm]
Y_offset     = 256
Y_pulses     = 15.6187525[Hz]
Y_resolution = 3.99840064[kHz]
  
```

Espectro 54. Ampliação do mapa de correlação homonuclear ¹H-¹H-NOESY em CDCl₃ do alcalóide (+)-aspidocarpina.



Espectro 55. Espectro de Infravermelho do alcalóide (+)-aspidolimina.

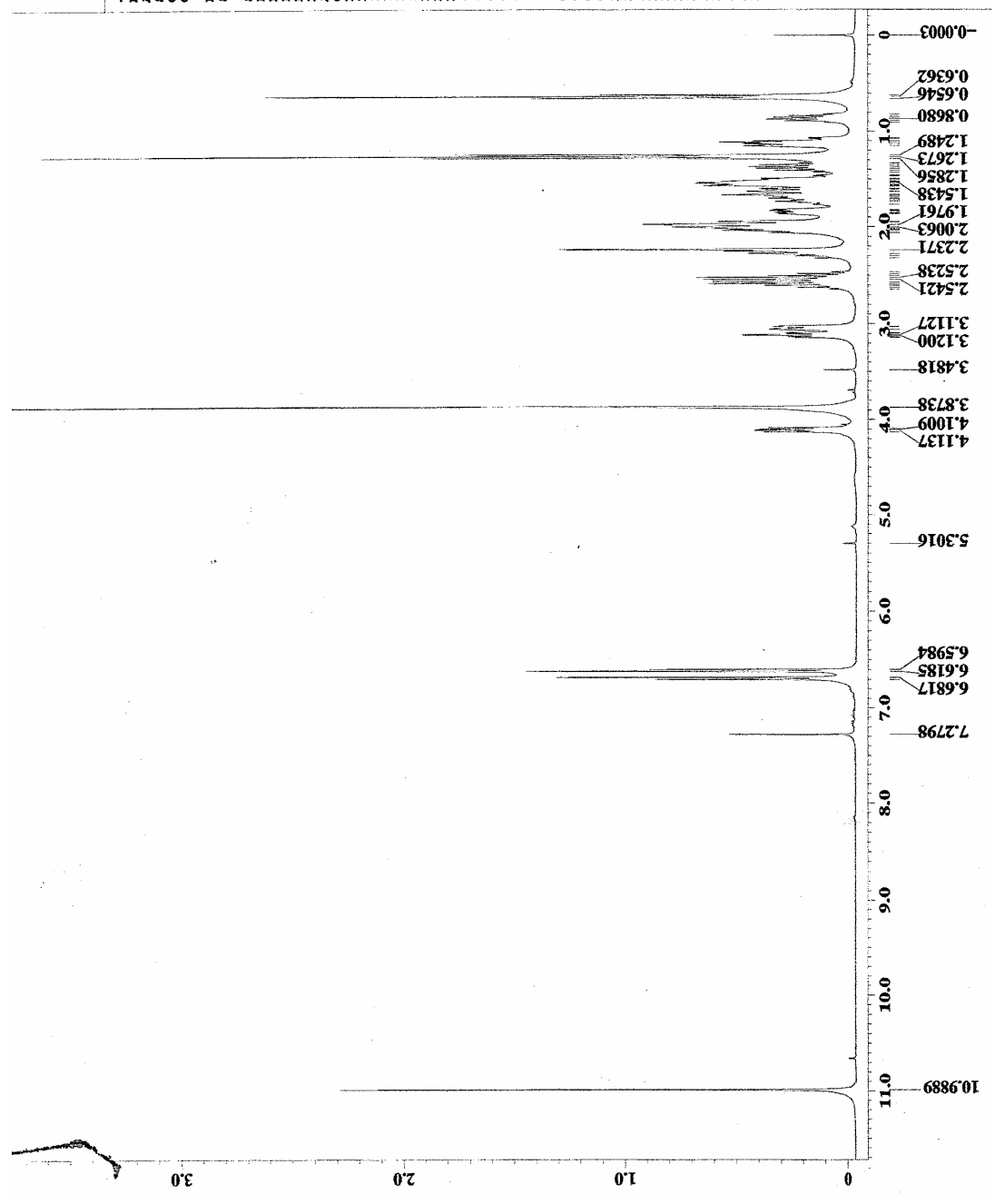


Espectro 56. Espectro de massas do alcalóide (+)-aspidolimina.

```

---- ACQUISITION PARAMETERS ----
File Name      = 4686-1d_spectrum.6
Author        = Jan Schripsema
Sample ID     = 4686
Content       = Single Pulse Experiment
Creation Date = 4-MAY-2005 08:50:15
Revision Date = 4-MAY-2005 15:33:12
Spec Site    = Eclipsa+ 400

Spec Type     = DELTA_NMR
Data Format    = 1D_COMPLEX
Dimensions    = X
Dim Title     = 1H
Dim Size      = 16384
Dim Units     = [ppm]
Acq_Units     = 1.651 [ms]
Changer_Sample = 0
Experiment     = single_pulse.exp
Field_Strength = 9.389766 [T]
Irr90         = 14.7 [us]
Irr90_hl     = 23.5 [us]
Irr90_lo     = 60 [us]
Irr_width    = 60 [us]
Lock         = 100kHz
Recvz_Gain   = 8
Relaxation_delay = 4 [s]
Scans         = 8
Solvent      = CHLOROFORM-D
Spin_lock_90 = 15 [Hz]
Spin_lock_90 = 90 [us]
Spin_lock_attn = 12 [dB]
Spin_lock     = 12 [dB]
Spin_status   = SPIN ON
Temp_set      = 25 [dC]
Temp_status   = TEMP ON
Temp_set      = 25 [dC]
Temp_status   = TEMP ON
X90_hl       = 24.5 [us]
X90_lo       = 60 [us]
X90          = 60 [us]
X_acq_duration = 2.7312128 [s]
X_domain     = 1H
X_freq       = 399.78219838 [MHz]
X_offset     = 7 [ppm]
X_points     = 16384
X_prescans   = 0
X_pulse      = 35 [us]
X_resolution = 0.36613771 [Hz]
X_sweep      = 5.99880024 [kHz]
  
```

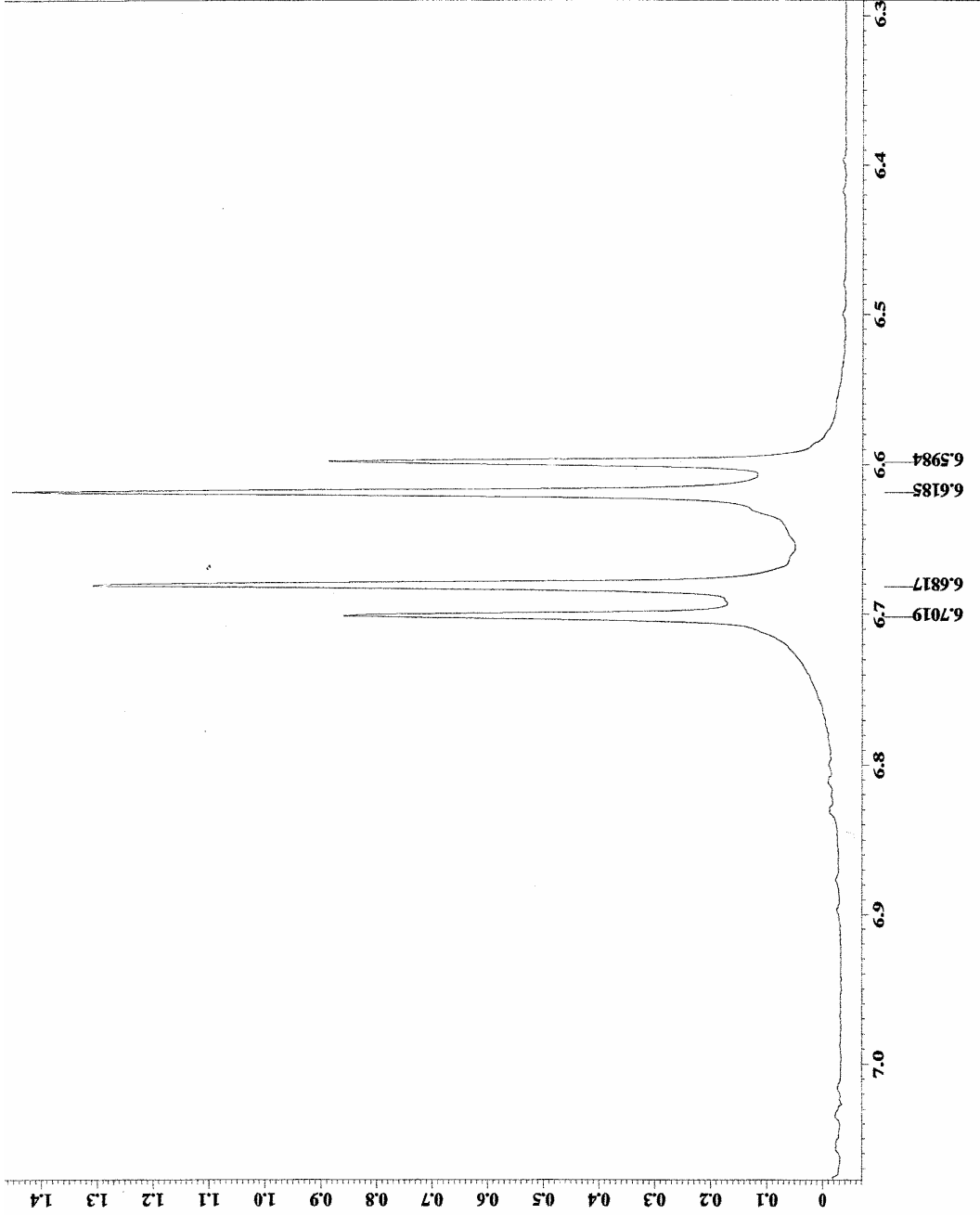


Espectro 57. Espectro de RMN ¹H (400 MHz) em CDCl₃ do alcalóide (+)-aspidolimina.

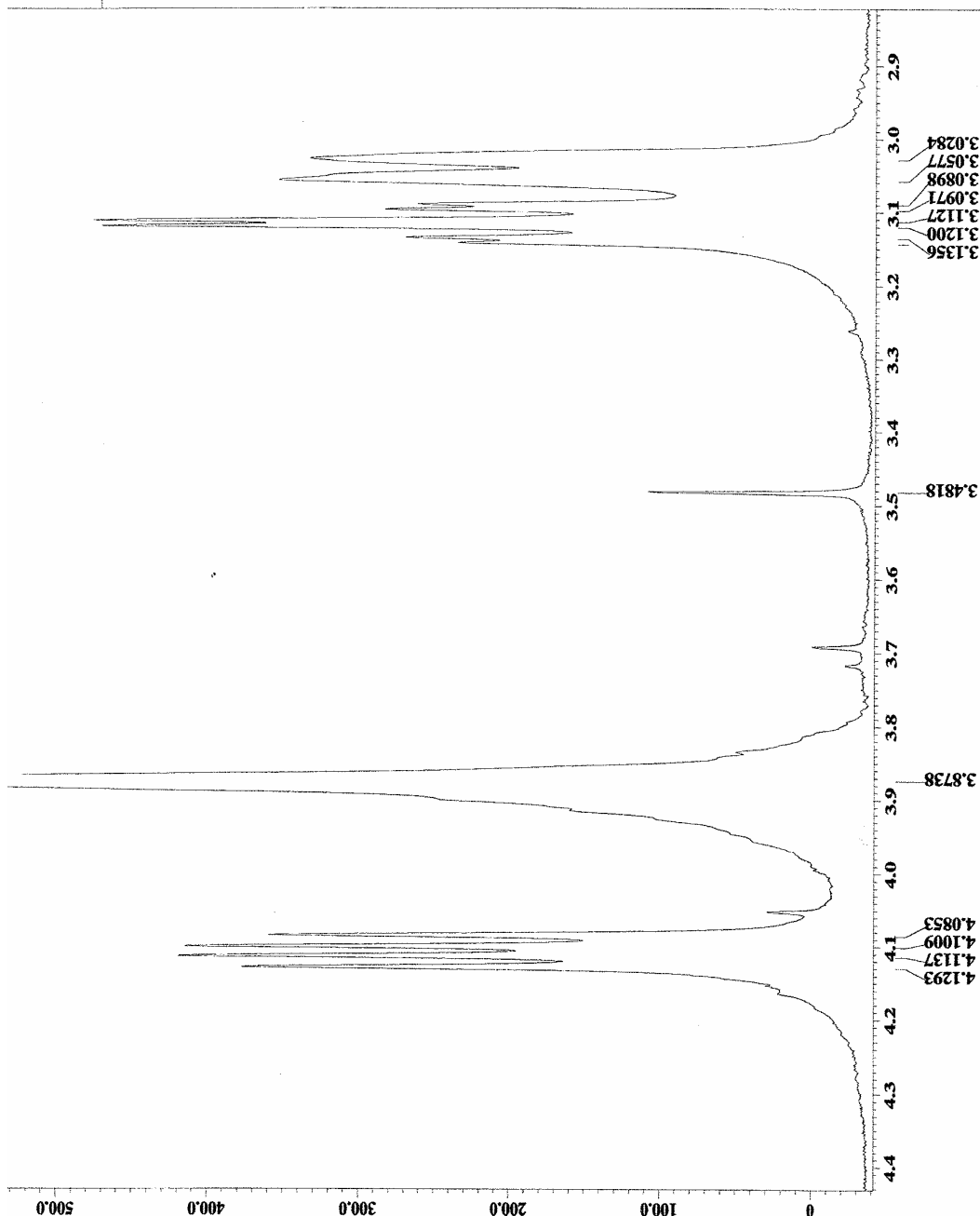
```

---- ACQUISITION PARAMETERS ----
File Name      = 4686-id_spectrum.6
Author        = Jan Schripsema
Sample ID     = 4686
Content       = Single Pulse Experiment
Creation Date = 4-MAY-2005 08:50:15
Revision Date = 4-MAY-2005 15:33:12
Spec Site    = Eclipse+ 400

Spec Type     = DELTA_NMR
Data Format   = ID COMPLEX
Dimensions   = 1H
Dim Size     = 16384
Dim Units    = [ppm]
Acq_delay    = 0.1631[ms]
Changer_sample = 0
Experiment    = single_pulse.exp
Field_strength = 1.39766[T]
F1r90_lo     = 1.7[us]
F1r90_hi     = 23.5[us]
F1r90_lo     = 60[us]
F1r90_hi     = 60[us]
Lock_status   = IDLE
Recvr_gain   = 8
Relaxation_delay = 4[s]
Solvent      = CHLOROFORM-D
Spin_get     = 15[KHz]
Spin_lock_90 = 90[us]
Spin_lock_attn = 12.5[db]
Spin_set     = 15[KHz]
Spin_status   = SPIN ON
Temp_set     = 25[degC]
Temp_status  = 25[degC]
X90_lo       = 14.7[us]
X90_hi       = 23.5[us]
X90_lo       = 20.7[us]
X90_hi       = 20.7[us]
X_duration   = 1H
X_freq       = 399.78219838[MHz]
X_offset     = 7[ppm]
X_points     = 16384
X_prescans   = 0
X_pulse      = 7.35[us]
X_resolution = 7.35[us]
X_sweep      = 5.29880024[KHz]
  
```



Espectro 58. Ampliação da região de δ_H 6,3-7,0 do espectro de RMN 1H (400 MHz) em $CDCl_3$ do alcalóide (+)-aspidolimina.



```

---- ACQUISITION PARAMETERS ----
File Name      = 4686-1d_spectrum.6
Author         = Jan Schripsema
Sample ID      = 4686
Content        = Single Pulse Experiment
Creation Date  = 4-MAY-2005 08:50:15
Revision Date  = 4-MAY-2005 15:33:12
Spec Site      = Eclipse 400

Spec Type      = DELTA_NMR
Data Format     = 1D COMPLEX
Dimensions     = 1H
Dim Title      = 16984
Dim Units      = 16984
Acq Delay      = 0.1631 [ms]
Changer_Sample = single_pulse.exp
Experiment      = 9.389766 [T]
Field Strength = 14.7 [us]
Irr90_hi       = 23.5 [us]
Irr90_lo       = 60 [us]
Irr Width      = 60 [us]
Lock Status    = IDLE
Recvr Gain     = 8
Relaxation_Delay = 4 [s]
Scans          = 8
Solvent        = CHLOROFORM-D
Spin_Jet       = 9 [Hz]
Spin_Lock_90   = 12.5 [dB]
Spin_Lock_Attn = 15 [Hz]
Spin_Set       = SPIN ON
Spin_Status    = SPIN ON
Temp_Set       = 25 [dC]
Temp_Status    = TEMP ON
X90_hi         = 14.7 [us]
X90_lo         = 23.5 [us]
X_acq_duration = 60 [us]
X_domain       = 2.7312128 [s]
X_freq         = 399.78219838 [MHz]
X_points       = 16384
X_prescans     = 0
X_pulse        = 7.35 [us]
X_resolution   = 0.36613771 [Hz]
X_sweep        = 5.99880024 [kHz]
  
```

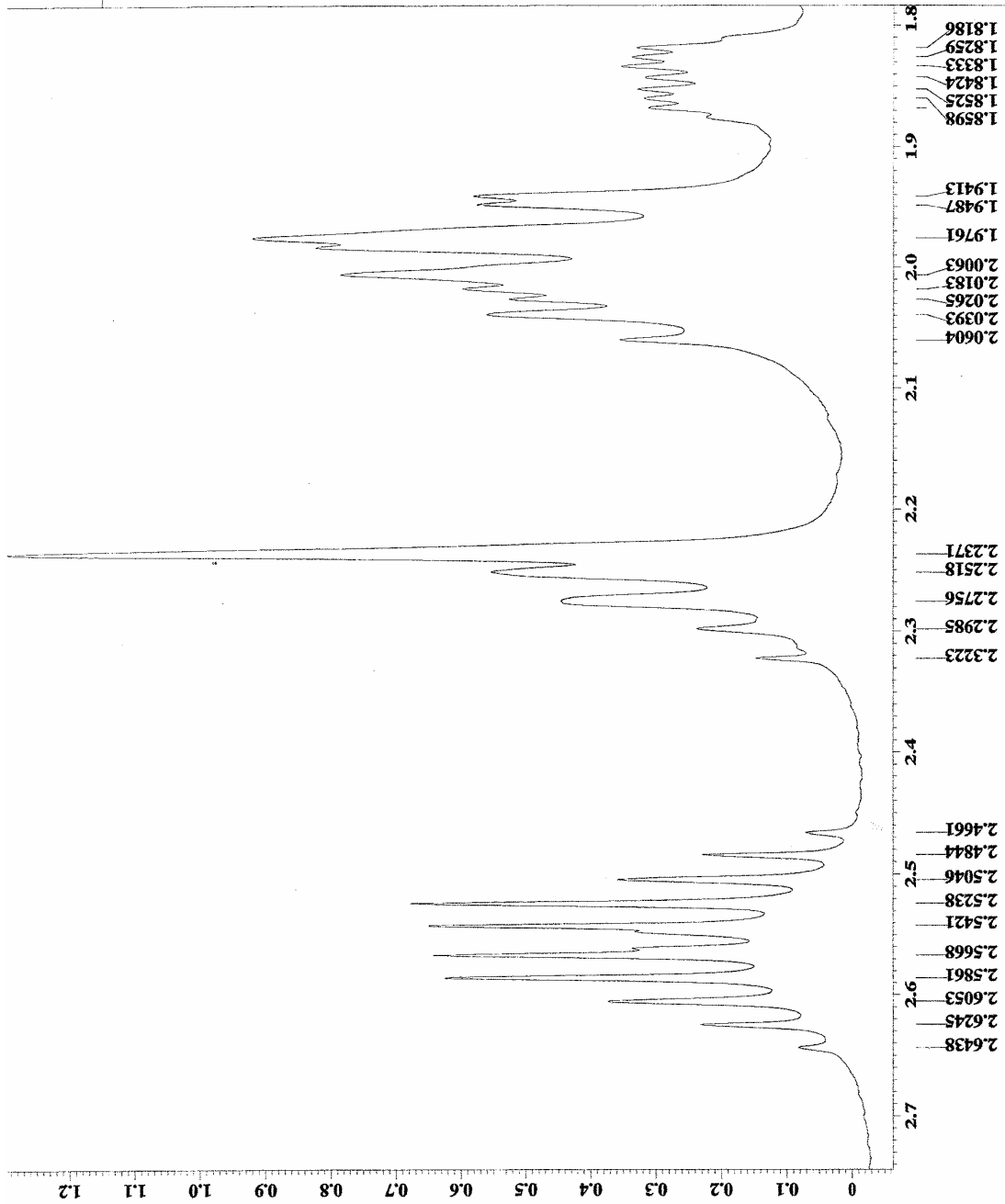
Espectro 59. Ampliação da região de δ_H 2,9-4,4 do espectro de RMN 1H (400 MHz) em $CDCl_3$ do alcalóide (+)-aspidolimina.

```

---- ACQUISITION PARAMETERS ----
File Name      = 4686-1d_spectrum.6
Author        = Jan Schripsema
Sample ID     = 4686
Content       = Single Pulse Experiment
Creation Date = 4-MAY-2005 08:50:15

Revision Date = 4-MAY-2005 15:33:12
Spec Site     = Eclipse400

Spec Type     = DELTA NMR
Data Format    = 1D COMPLEX
Dimensions    = 1H
Dim Title     = 16384
Dim Size      = [ppm]
Dim Units     = 0.1631 [ms]
Acq_Delay     = 0
Changer_sample = single_pulse.exp
Experiment     = 1
Field_strength = 12.7765 [T]
F2_offset     = 0 [Hz]
F2_offset_ppm = 23.5 [us]
F2_offset_us  = 60 [us]
F2_offset_ms  = 60 [us]
F2_offset_s   = 8
F2_offset_min = 8
F2_offset_max = 8
F2_offset_avg = 8
Lock_status   = IDLE
Lock_gain     = 8
Relaxation_delay = 4 [s]
Scans         = 8
Solvent       = CHLOROFORM-D
Spin_lock_90  = 0 [ms]
Spin_lock_180 = 12.5 [dB]
Spin_lock_attn = 15 [Hz]
Spin_set      = 15 [Hz]
Spin_status   = SPIN ON
Temp_get      = 25 [dC]
Temp_set      = 25 [dC]
Temp_status   = TEMP ON
Temp_on       = 4. [us]
Temp_off      = 2.5 [ms]
X90_lo        = 60 [us]
X90_hi        = 60 [us]
X_acq_duration = 2.7312128 [s]
X_domain      = 1H
X_freq        = 399.78219838 [MHz]
X_offset      = 7 [ppm]
X_points      = 16384
X_prescans    = 0
X_pulse       = 7.35 [us]
X_resolution  = 0.36623771 [kHz]
X_sweep       = 5.99860024 [kHz]
  
```



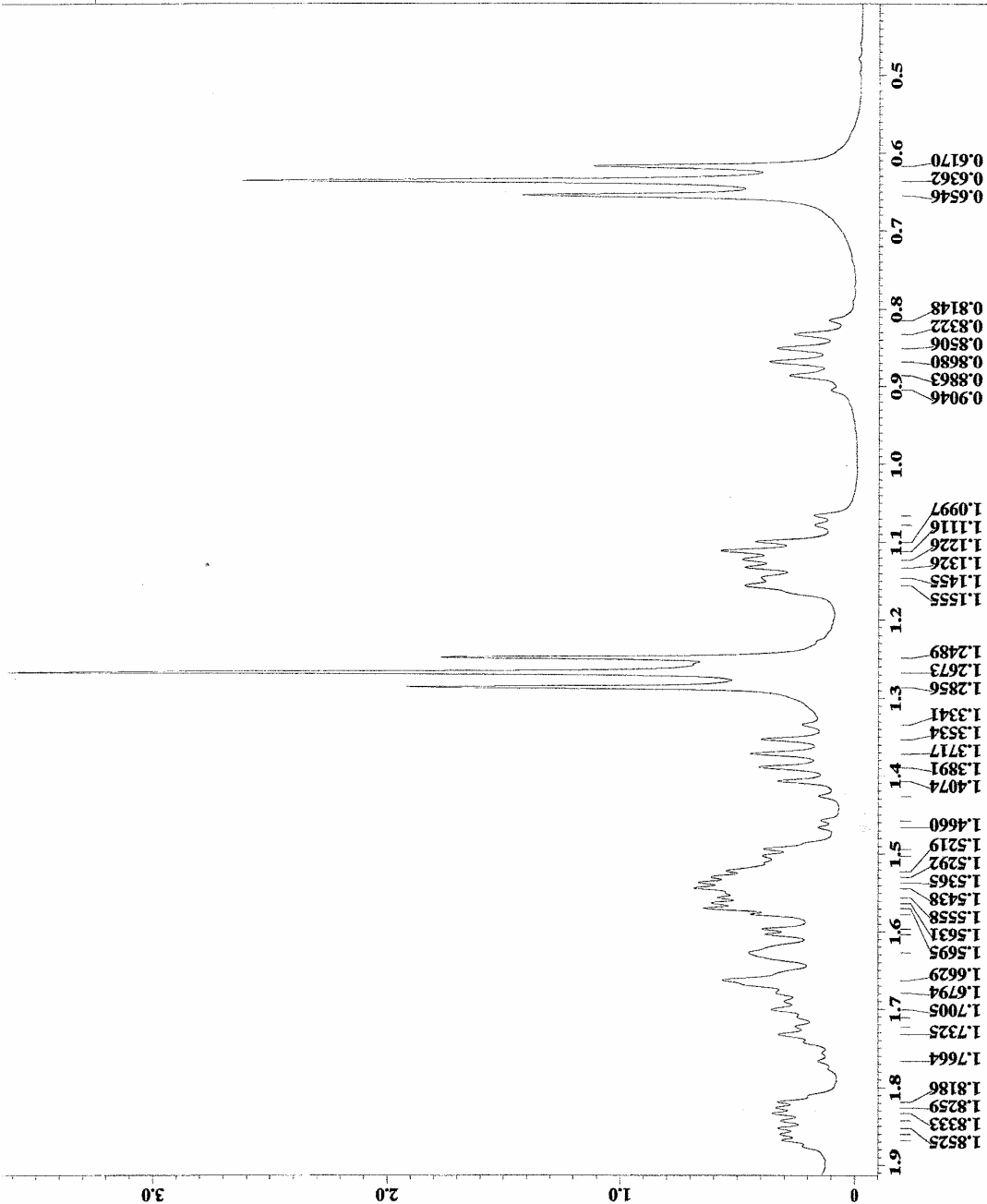
Espectro 60. Ampliação da região de δ_H 1,8-2,7 do espectro de RMN 1H (400 MHz) em $CDCl_3$ do alcalóide (+)-aspidolimina.

```

---- ACQUISITION PARAMETERS ----
File Name      = 4686-1d_spectrum.6
Author        = Jan Schripsema
Sample ID     = 4686
Content       = Single Pulse Experiment
Creation Date = 4-MAY-2005 08:50:15

Revision Date = 4-MAY-2005 15:33:12
Spec Site    = Eclipse-400

Spec Type    = DELTA NMR
Data Format   = 1D COMPLEX
Dimensions   = X
Dim Title    = 1H
Dim Size     = 16384
Dim Units    = [ppm]
Acq_delay    = 0.1631 [ms]
Chemical Shift = 0.000 [ppm]
Experiment    = single_pulse.exp
Field_strength = 9.389766 [T]
Irr90_hi     = 14.7 [us]
Irr90_lo     = 23.5 [us]
Irr_width    = 60 [us]
Lock_status   = IDLE
Nuc1         = 1H
Nuc2         = 13C
Polarization_delay = 4 [s]
Scans        = 8
Solvent      = CHLOROFORM-D
Spin_set     = 15 [Hz]
Spin_lock_90 = 90 [us]
Spin_lock_attn = 12.5 [dB]
Spin_set     = 15 [Hz]
Spin_status  = SPIN ON
Spin_status  = 25 [dCI]
Temp_set     = 25 [dCI]
Temp_status  = TEMP ON
Temp_status  = TEMP ON
X90          = 14.7 [us]
X90_lo      = 23.5 [us]
X90_hi      = 60 [us]
X_acq_duration = 2.7312128 [s]
X_channel    = 399.78219838 [MHz]
X_offset     = 7 [ppm]
X_points     = 16384
X_prescans   = 0
X_pulse      = 7.35 [us]
X_resolution = 0.36613771 [Hz]
X_sweep      = 5.99880024 [kHz]
  
```

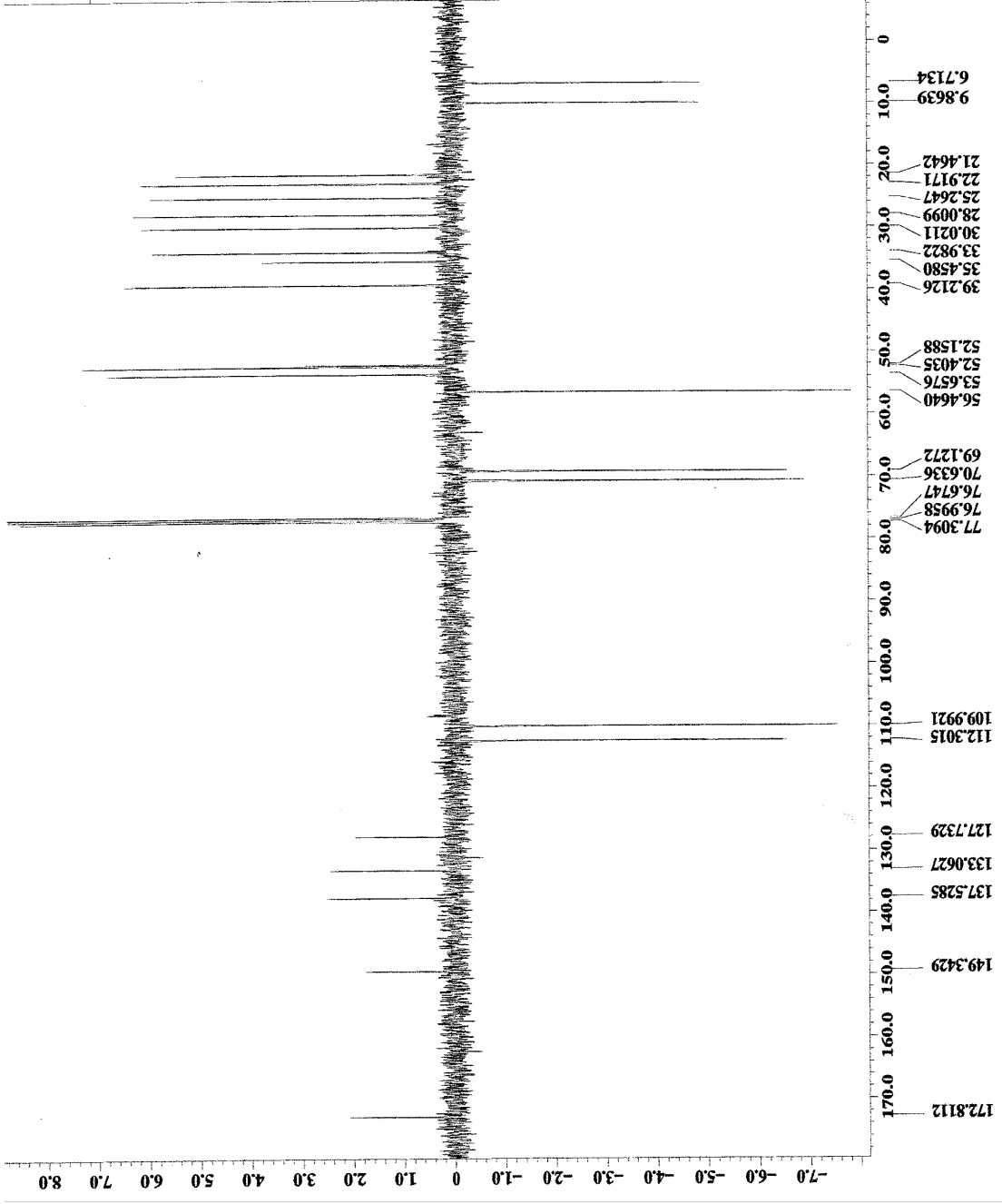


Espectro 61. Ampliação da região de δ_H 0,5-1,9 do espectro de RMN 1H (400 MHz) em $CDCl_3$ do alcalóide (+)-aspidolimina.

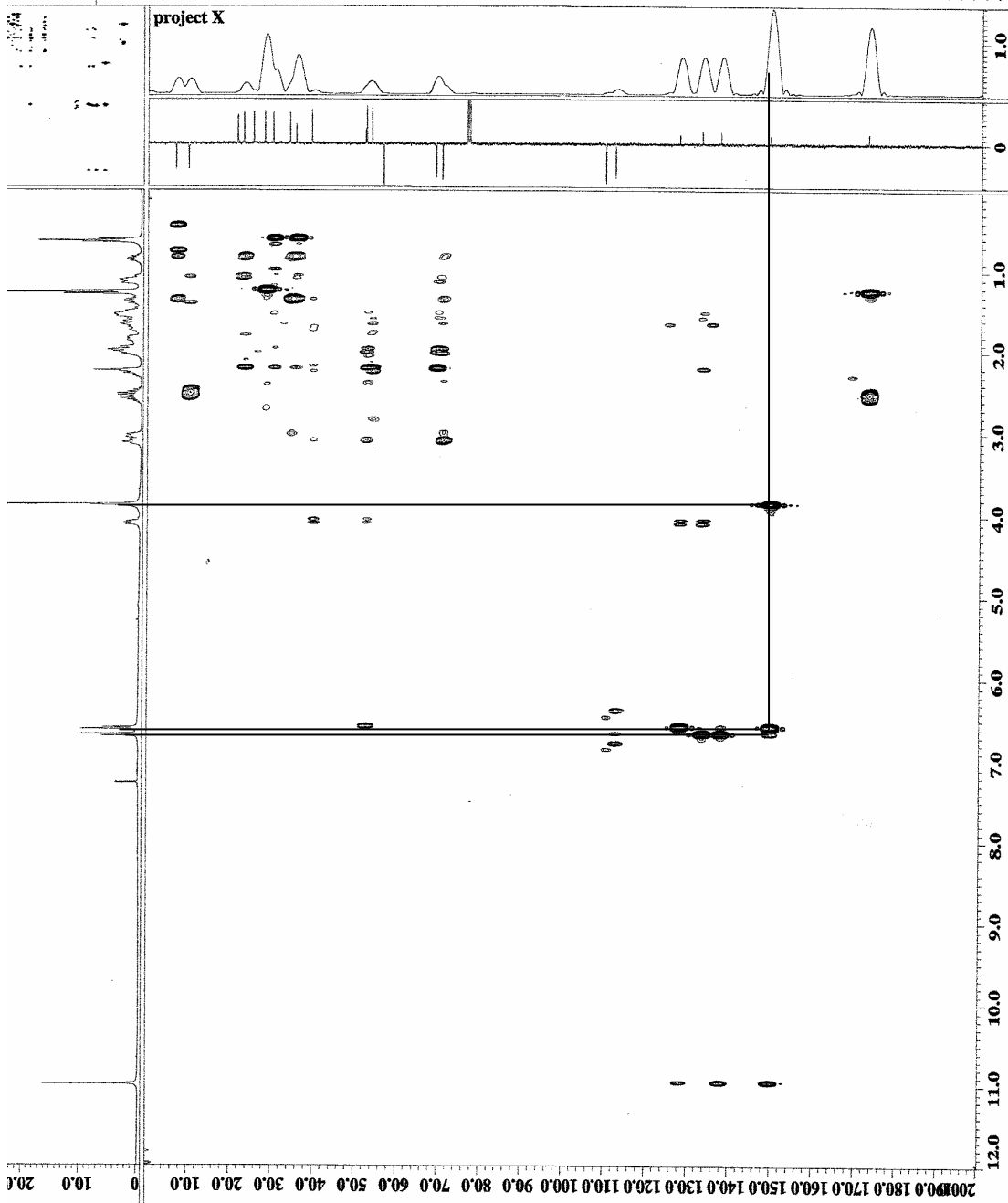
```

----- ACQUISITION PARAMETERS -----
File Name      = 4686-apt.4
Author        = UCR Schripsema
Sample ID     = APT Experiment
Creation Date  = 4-MAY-2005 09:08:27
Revision Date = 4-MAY-2005 15:43:10
Spec Site     = Eclipse+ 400

Spec Type     = DELTA_NMR
Data Format    = ID COMPLEX
Dimensions    = 13C
Dim Size      = 32768
Dim Units     = [ppm]
ACQ_delay     = 38.7[us]
Changer_sample = 0
Experiment    = apt.exp
Field_strength = 9.389766[T]
Irr90_hi     = 14.7[us]
Irr90_lo     = 23.5[us]
Irr90_wdth   = 54[us]
J_constant    = 60[us]
Lock_status   = 140[Hz]
Recvr_gain    = IDLE
Relaxation_delay = 15
Scans         = 307
Solvent       = CHLOROFORM-D
Spin_get     = 6[us]
Spin_lock_90 = 30[us]
Spin_lock_attn = 12.5[db]
Spin_set     = 15[Hz]
Spin_status   = SPIN ON
Temp_get     = 25[dc]
Temp_set     = 25[dc]
Temp_status   = TEMP ON
X90_lo       = 10[us]
X90_hi       = 9.5[us]
X90_lo       = 35[us]
X_acq_duration = 1.3008896[s]
X_domain     = 13C
X_freq       = 100.52530333[MHz]
X_offset     = 100[ppm]
X_points     = 32768
X_prescans   = 4[us]
X_pulse      = 0.76670474[Hz]
X_resolution = 25.18891688[Hz]
  
```



Espectro 62. Espectro de RMN ¹³C (100 MHz-APT) em CDCl₃ do alcalóide (+)-aspidolimina.



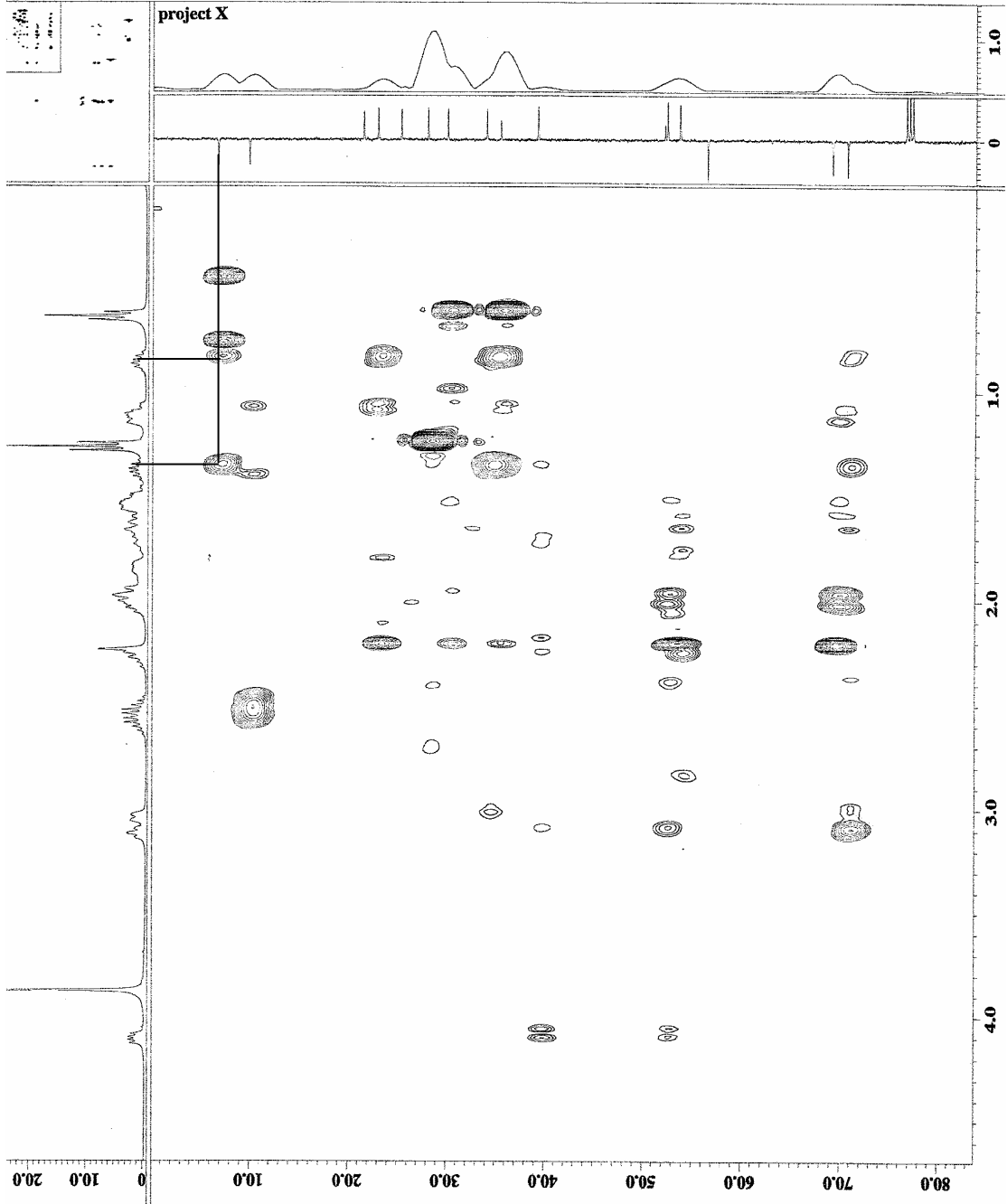
```

----- ACQUISITION PARAMETERS -----
File Name      = 4686-pfg_hmbc.2
Author        = Jan Schripsema
Sample ID     = 4686
Content       = gradient enhanced HMBC
Creation Date = 11-JUN-2005 12:54:43
Revision Date = 11-JUN-2005 14:55:05
Spec Sites   = Eclipse+ 400

Spec Type     = DELTA_NMR
Data Format    = 2D REAL REAL
Dimensions    = X Y
Dim Title     = 1H 13C
Dim Size      = 1024, 512
Dim Units     = [ppm] [ppm]
Acq_delay     = 0.2011 [ms]
Experiment    = hmbc_pfg_m_exp
Field strength = 9.389766 [T]
Grad_1_amp   = 1 [ms]
Grad_2_amp   = 60 [%]
Grad_3_amp   = 1 [ms]
Grad_4_amp   = 30 [%]
Grad_5_amp   = 1 [ms]
Grad_6_amp   = 23.5 [us]
Grad_7_amp   = 60 [us]
Grad_8_amp   = 35 [us]
Grad_9_amp   = 140 [Hz]
Grad_10_amp  = 8 [Hz]
Grad_11_amp  = 15
Relaxation_delay = 2 [s]
Scans         = 40
SOLVENT       = CDCl3
Spin_lock     = 15 [ms]
Spin_lock_90 = 90 [us]
Spin_lock_attn = 12.5 [dB]
Spin_set     = 15 [Hz]
Spin_status   = SPIN ON
Temp_set     = 25 [dC]
Temp_status  = TEMP ON
X90_lo      = 23.5 [us]
X90_hi      = 60 [us]
X90_lo_dur  = 0.2134016 [s]
X_domain    = 1H
X_freq      = 399.78219838 [MHz]
X_offset    = 6.0 [ppm]
X_points    = 1024
X_pulses    = 4
X_pulse     = 14.7 [us]
X_resolution = 4.8600048 [Hz]
X_sweep     = 10 [us]
Y90_lo     = 9.5 [us]
Y90_hi     = 35 [us]
Y_domain   = 13C
Y_freq     = 100.5250333 [MHz]
Y_offset   = 100 [ppm]
Y_points   = 0
Y_pulses   = 128
Y_pulse    = 9.5 [us]
  
```

Espectro 63. Mapa de correlação heteroclear HMBC em CDCl_3 do alcalóide (+)-aspidolimina.

ACQUISITION PARAMETERS
 File Name = 4686_2_1.hmbc.2
 Author = Yan Schripsema
 Sample ID = 4686
 Content = gradient enhanced HMBC
 Creation Date = 11-JUL-2005 12:54:43
 Revision Date = 11-JUL-2005 14:55:05
 Spec Site = Eclipse+ 400
 DELTA_NMR = 2
 X_REAL_REAL = 1
 X_Y = 1
 IR_13C = 1024, 512
 Dim Size [ppm] [ppm] [ms]
 Acq_delay = 0.2011 [ms]
 Changer_sample = 0
 Experiment = hmbc_pfg_m.exp
 Field_strength = 9.389766 [T]
 Grad_1_amp = 4 [ms]
 Grad_2_amp = 0 [%]
 Grad_3_amp = 60 [%]
 Grad_3_amp = 1 [ms]
 Grad_3_amp = 30 [%]
 Grad_recover = 1 [ms]
 Irr90 = 14.7 [us]
 Irr90_hi = 23.5 [us]
 Irr90_lo = 35 [us]
 Lock_strength = 100 [Hz]
 Lock_status = 1 [Hz]
 Long_range = 8 [Hz]
 Recv_gain = 15
 Relaxation_delay = 2 [s]
 Scans = 40
 Solvent = CHLOROFORM-D
 Spin_get = 16 [Hz]
 Spin_lock_90 = 90 [us]
 Spin_lock_atn = 12.5 [dB]
 Spin_off = 1 [Hz]
 Spin_on = SPIN ON
 Spin_status = 25 [GC]
 Temp_get = 25 [GC]
 Temp_set = TEMP ON
 Temp_status = TEMP ON
 X90 = 14.7 [us]
 X90_lo = 23.5 [us]
 X_acq_duration = 60 [us]
 X_delay = 0.2134016 [s]
 X_freq = 399.78219838 [MHz]
 X_offset = 6.0 [ppm]
 X_points = 1024
 X_prescans = 4
 X_resolution = 14.7 [us]
 X_pulse = 4.68600048 [Hz]
 X_sweep = 4.79846449 [MHz]
 Y90 = 10 [us]
 Y90_lo = 3.5 [us]
 Y_domain = 13 [us]
 Y_freq = 100.52530333 [MHz]
 Y_offset = 100 [ppm]
 Y_points = 128
 Y_prescans = 0
 Y_pulse = 9.5 [us]

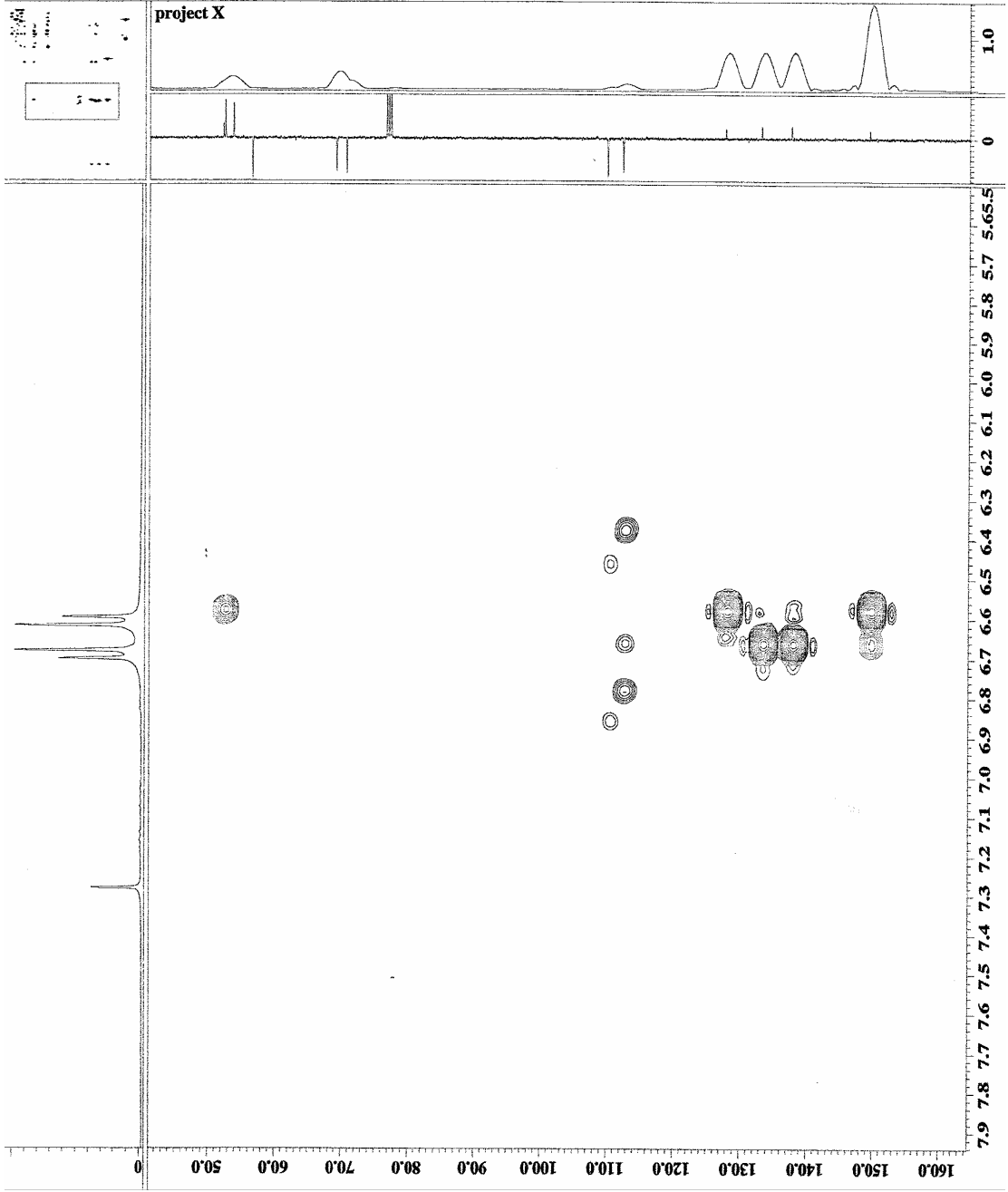


Espectro 64. Ampliação do mapa de correlação heteronuclear HMBC em CDCl_3 do alcalóide (+)-aspidolimina.

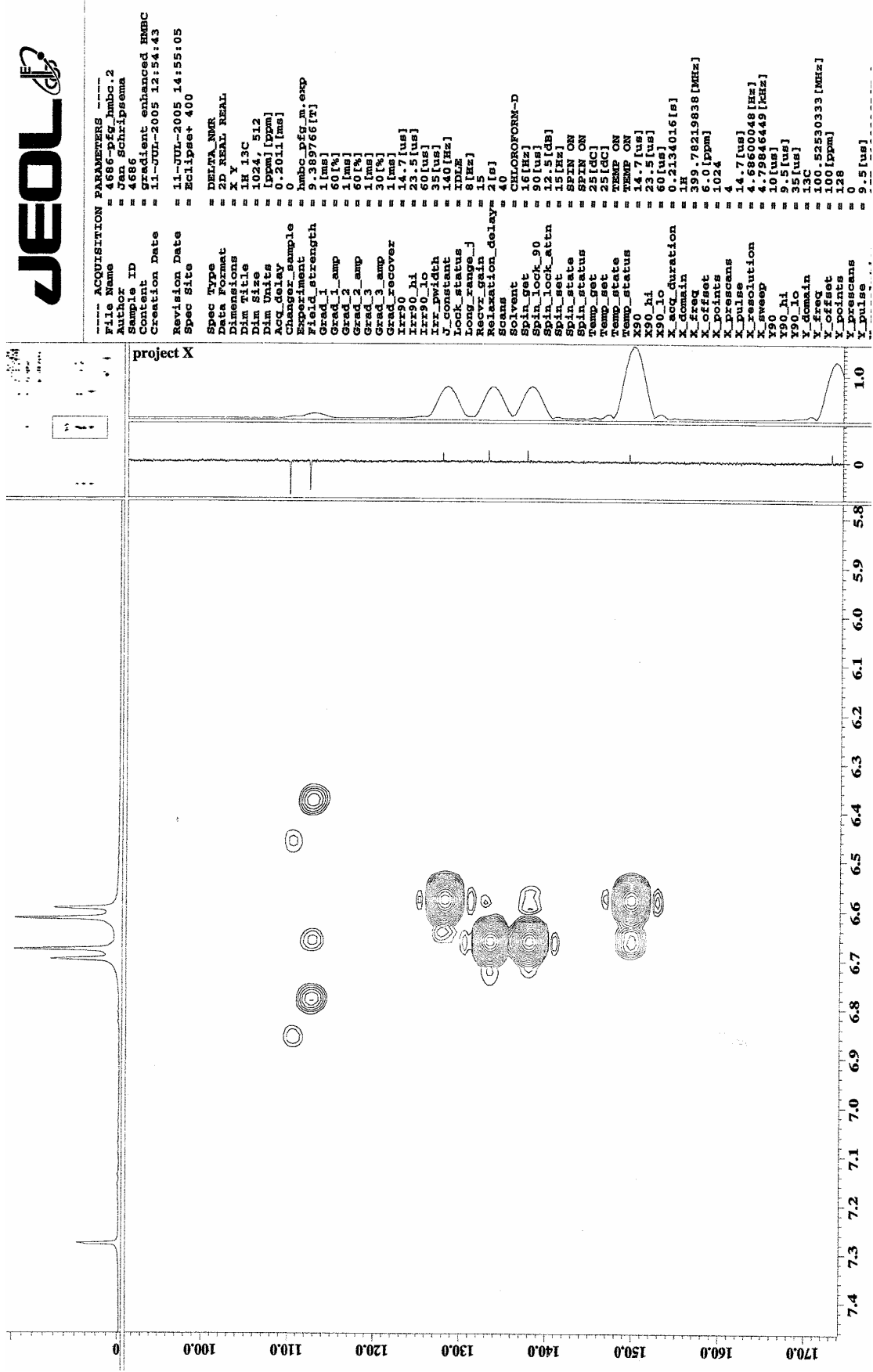
```

----- ACQUISITION PARAMETERS -----
File Name      = 4686-pfg_hmbc_2
Author        = Jan Schripsema
Sample ID     = 4686
Content       = gradient enhanced HMBC
Creation Date = 11-JUL-2005 12:54:43
Revision Date = 11-JUL-2005 14:55:05
Spec Site    = Eclipsev 400

Spec Type     = DELTA NMR
Data Format    = 2D REAL REAL
Dimensions    = X Y
Dim Title     = 1H 13C
Dim Size      = 1024, 512
Dim Units     = [ppm][ppm]
Acq_delay     = 0.2011[ms]
Changer_sample = 0
Experiment    = hmbc_pfg_m.exp
Fid_strength  = 1.389766[F]
Grad_1_amp    = 60[%]
Grad_2_amp    = 60[%]
Grad_3_amp    = 30[%]
Grad_recover  = 1[ms]
Irr90_hi     = 14.7[us]
Irr90_lo     = 20.5[us]
Irr_width    = 35[us]
J_constant    = 140[Hz]
Lock_status   = IDLE
Long_range_j  = 8[Hz]
Recvz_gain    = 15
Relaxation_delay = 2[fs]
Scans         = 40
Solvent       = CDCl3
Spin_lock     = CHLOROFORM-D
Spin_lock_90 = 30[us]
Spin_lock_attn = 12.5[db]
Spin_set      = 15[Hz]
Spin_status   = SFIN ON
Spin_status   = SFIN ON
Temp_get      = 25[degC]
Temp_set      = 25[degC]
Temp_status   = TEMP ON
Temp_status   = TEMP ON
X90_hi        = 4.7[us]
X90_lo        = 23.5[us]
X90_lo        = 60[us]
X_acq_duration = 0.2134016[fs]
X_domain      = 399.78219838[MHz]
X_freq        = 6.0[ppm]
X_offset      = 1024
X_points      = 4
X_prescans    = 4
X_resolution  = 14.7[us]
X_resolution  = 4.5664648[Hz]
X_resolution  = 4.7984648[Hz]
X_sweep       = 10[us]
Y90_hi        = 9.5[us]
Y90_lo        = 35[us]
Y_domain      = 13C
Y_freq        = 100.52530333[MHz]
Y_offset      = 100[ppm]
Y_points      = 0.28
Y_pulse       = 9.5[us]
Y_resolution  = 157.81400686[Hz]
  
```



Espectro 65. Ampliação do mapa de correlação heteronuclear HMBC em CDCl₃ do alcalóide (+)-aspodolimina.



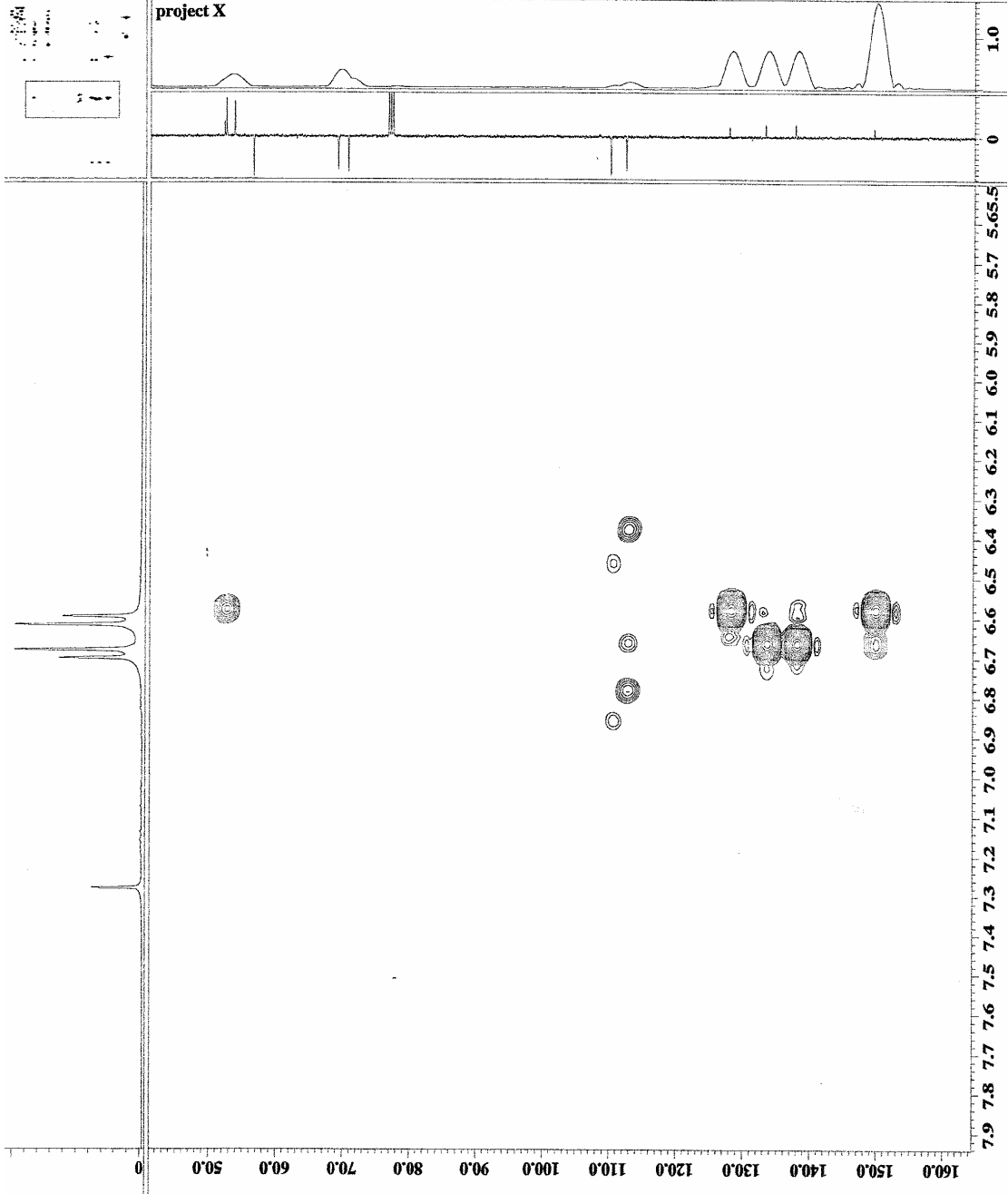
```

----- ACQUISITION PARAMETERS -----
File Name      = 4686-pfg_hmbc.2
Author        = Jan Schripsema
Sample ID     = 4686
Content       = Gradient enhanced HMBC
Creation Date = 11-JUL-2005 12:54:43
Revision Date = 11-JUL-2005 14:55:05
Spec Site    = Eclipsev 400

Spec Type    = DELTA NMR
Data Format  = 2D REAL REAL
Dimensions  = X Y
Dim Title   = 1H 13C
Dim Size    = 1024, 512
Dim Units   = [ppm],[ppm]
Acq_delay   = 0.2011[ms]
Changer_sample
Kspc_start  = 9.389766[E]
Fid4_strength
Grad_1_amp  = 60[%]
Grad_2_amp  = 1[ms]
Grad_3_amp  = 60[%]
Grad_recover
Irr0_hi     = 14.7[us]
Irr0_lo     = 20.5[us]
Irr20_lo    = 35[us]
Irr_width   = 140[Hz]
J_constant  = 8[Hz]
Lock_status = IDLE
Long_range_ = 15
Recvr_gain  = 40
Relaxation_delay= 2[fs]
Scans       = 40
Solvent     = CHLOROFORM-D
Spin_lock   = 50[Hz]
Spin_lock_90
Spin_lock_attn
Spin_set    = 12.8[dB]
Spin_status = 15[Hz]
Spin_status = SPIN ON
Temp_get    = 25[degC]
Temp_set    = 25[degC]
Temp_status = TRMP ON
X0_hi       = 14.7[us]
X0_lo       = 20.5[us]
X90_lo      = 60.5[us]
X_acq_duration
X_domain    = 0.2134016[s]
X_freq      = 399.78219838[MHz]
X_offset    = 6.0[ppm]
X_points    = 1024
X_prescans  = 4
X_pulse     = 14.7[us]
X_resolution
X_sweep     = 4.68600048[Hz]
Y0_hi       = 17.946449[Hz]
Y0_lo       = 9.5[us]
Y_domain    = 35[us]
Y_freq      = 13C
Y_offset    = 100.52530333[MHz]
Y_points    = 100[ppm]
Y_prescans  = 128
Y_pulse     = 9.5[us]

```

Espectro 66. Ampliação do mapa de correlação heteronuclear HMBC em $CDCl_3$ do alcalóide (+)-aspidolimina.



```

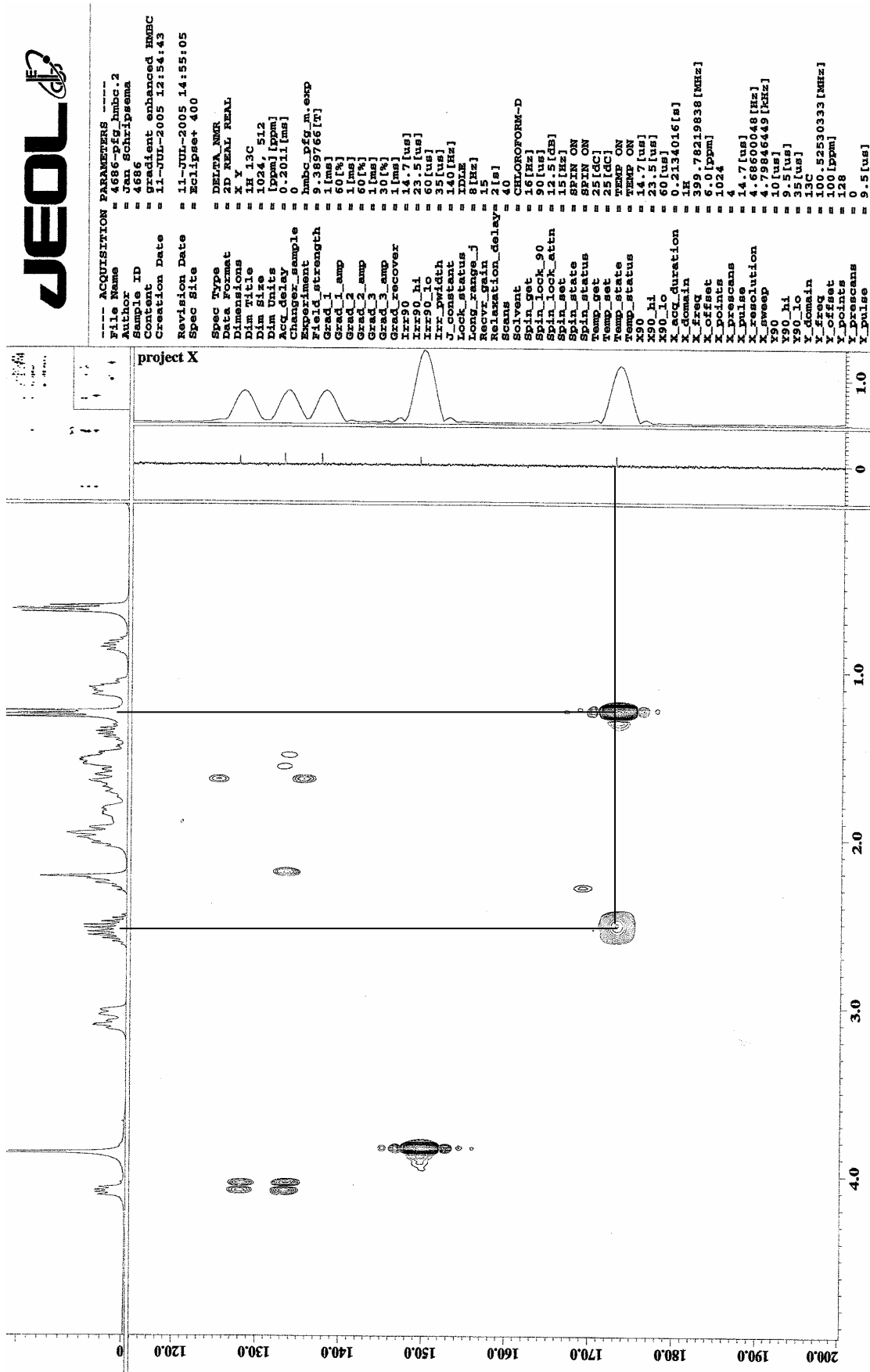
----- ACQUISITION PARAMETERS -----
File Name      = 4686-pfg_hmbc.2
Author        = Jan Schripsema
Sample ID     = 4686
Content       = Gradient enhanced HMBC
Creation Date = 11-JUL-2005 12:54:43

Revision Date = 11-JUL-2005 14:55:05
Spec Site     = Eclipse 400

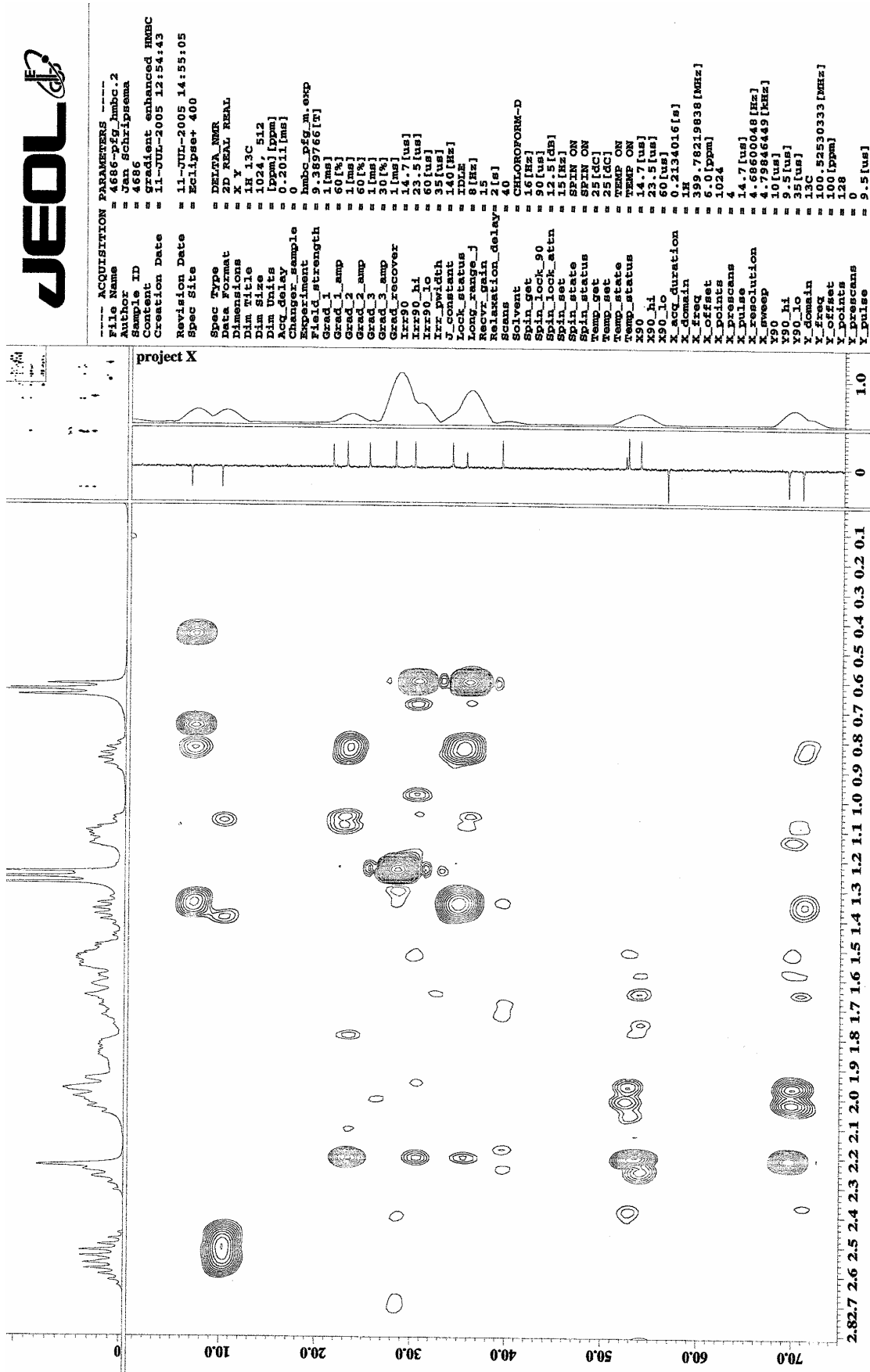
Spec Type     = DELTA NMR
Date Format    = 2D REAL REAL
Dimensions    = X Y
Dim Title     = 1H 13C
Dim Size      = 1024, 512
Dim Units     = [ppm] [ppm]
Acq_delay     = 0.2011 [ms]
Changer_sample = 0
Experiment     = hmbc_pfg_m_exp
Field_strength = 9.389766 [T]
Grad_1_amp    = 60 [%]
Grad_2_amp    = 1 [ms]
Grad_3_amp    = 60 [%]
Grad_recover  = 1 [ms]
Irr90         = 14.7 [us]
Irr90_hi     = 23.5 [us]
Irr90_lo     = 9 [us]
Lock_status   = 140 [Hz]
Lock_status_j = IDLE
Long_range_j  = 8 [Hz]
Recvr_gain    = 15
Relaxation_delay = 2 [s]
Scans         = 40
Solvent       = CHLOROFORM-D
Spin_get      = 16 [Hz]
Spin_lock_90  = 10 [us]
Spin_lock_atn = 15 [Hz]
Spin_status   = SPIN ON
Temp_get      = 25 [dC]
Temp_set      = 25 [dC]
Temp_status   = TEMP ON
X90_hi       = 14.7 [us]
X90_lo       = 23.5 [us]
X_acq_duration = 0.2134016 [s]
X_domain     = 1H
X_freq       = 399.78219838 [MHz]
X_offset     = 6.0 [ppm]
X_points     = 1024
X_prescans   = 4
X_resolution = 14.7 [us]
X_sweep      = 4.68600048 [Hz]
Y90_hi       = 10.7846449 [Hz]
Y90_lo       = 9.5 [us]
Y_domain     = 38 [us]
Y_freq       = 13C
Y_offset     = 100.52530333 [MHz]
Y_points     = 100 [ppm]
Y_prescans   = 128
X_pulse      = 0
Y_pulse      = 9.5 [us]

```

Espectro 67. Ampliação do mapa de correlação heteronuclear HMBC em CDCl_3 do alcalóide (+)-aspidolimina.



Espectro 68. Ampliação do mapa de correlação heteronuclear HMBC em CDCl_3 do alcalóide (+)-aspidinolina.



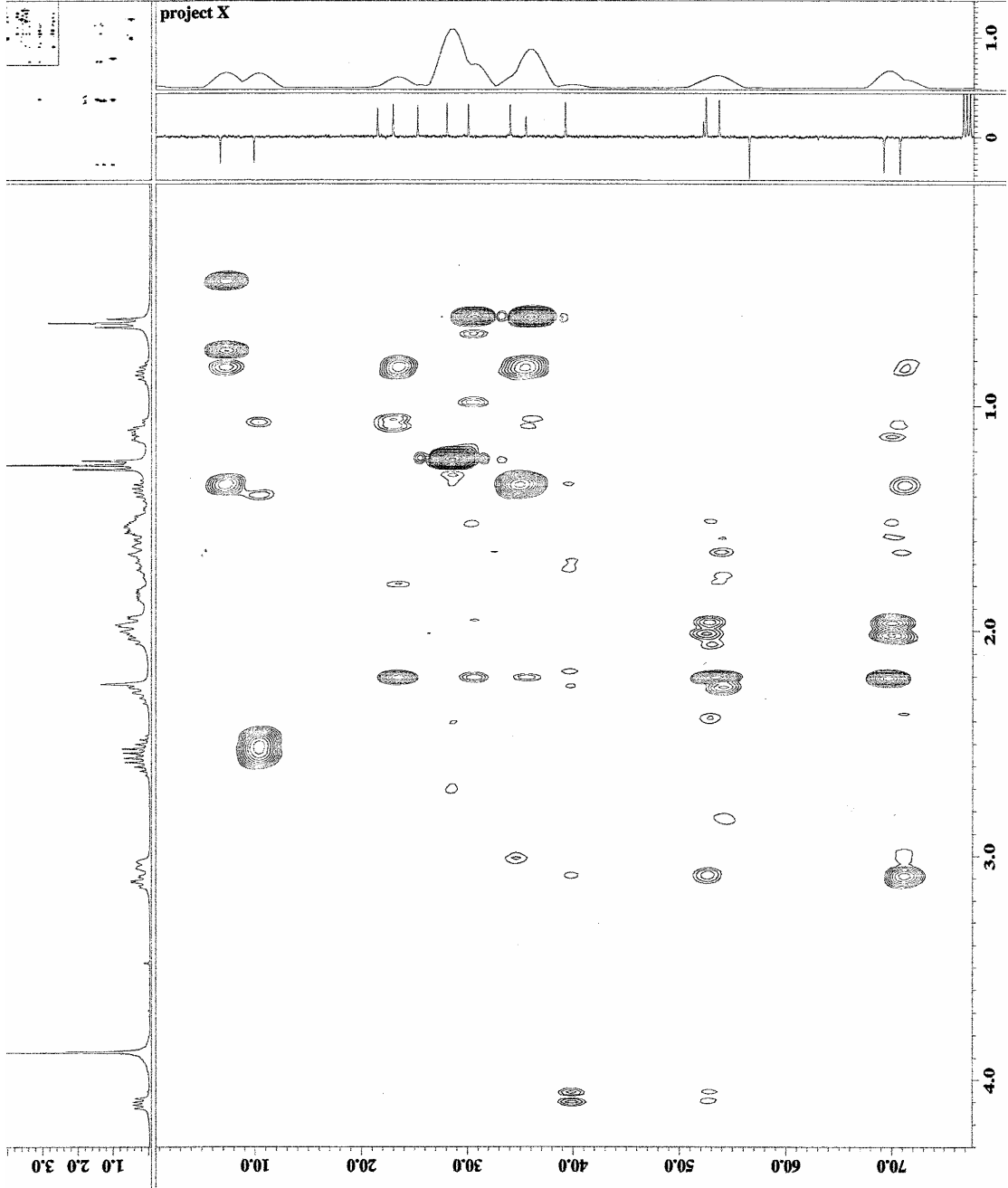
Espectro 69. Ampliação do mapa de correlação heteronuclear HMBC em CDCl₃ do alcalóide (+)-aspidolimina.

```

----- ACQUISITION PARAMETERS -----
File Name      = 4686-ppg_hmbc.2
Sample        = 4686 Schripsema
Content       = Gradient enhanced HMBC
Creation Date = 11-JUL-2005 12:54:43
Revision Date = 13-JUL-2005 15:03:38
Spec Site     = Eclipse+ 400

= DELTA_NMR
= X REAL REAL
= Y 13C
= 1024 512
= [ppm] [ppm]
= 0.2011 [ms]
= 0
= hmbc_ppg_m.exp
= 9.389766 [T]
= 1 [ms]
= 1 [ms]
= 60 [%]
= 1 [ms]
= 30 [%]
= 1 [ms]
= 14.7 [us]
= 23.5 [us]
= 80 [us]
= 340 [Hz]
= TDKE
= 8 [Hz]
= 15
= Relaxation_delay= 2 [s]
= 40
= CHLOROFORM-D
= 16 [Hz]
= 20 [um] [dB]
= 15 [Hz]
= SPIN ON
= SPIN ON
= 25 [dc]
= TEMP ON
= 14.7 [us]
= 20 [us]
= 0.2134016 [s]
= 1H
= 399.78219838 [MHz]
= 6.0 [ppm]
= 1024
= 4
= 14.7 [us]
= 4.5800048 [Hz]
= 10 [ms] 8443 [KHz]
= 9.5 [us]
= 35 [us]
= 13C
= 100.52830333 [MHz]
= 100 [ppm]
= 128
= 0.5 [us]
= 2.27

```

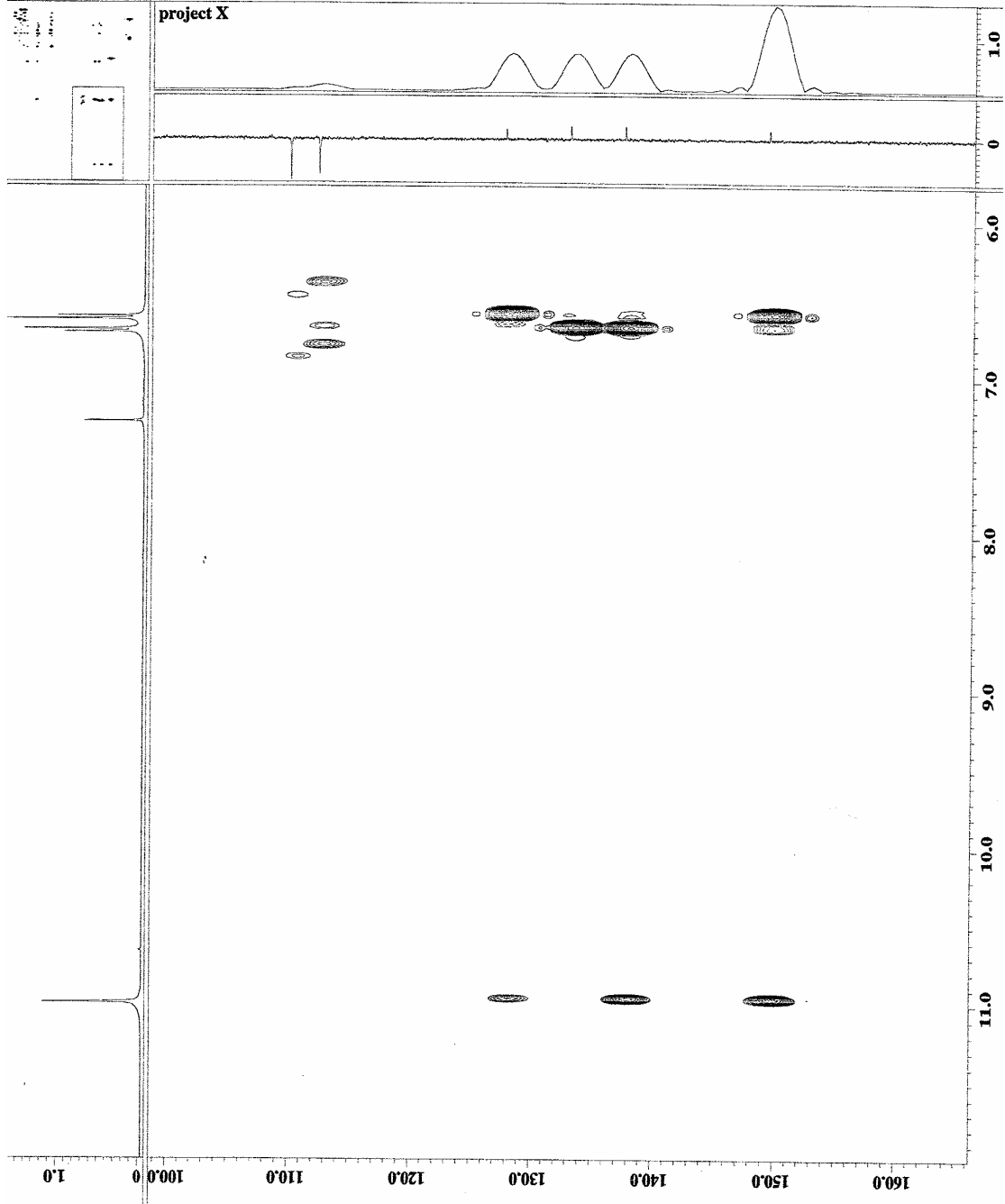


Espectro 70. Ampliação do mapa de correlação heteronuclear HMBC em CDCl_3 do alcalóide (+)-aspodilimina.

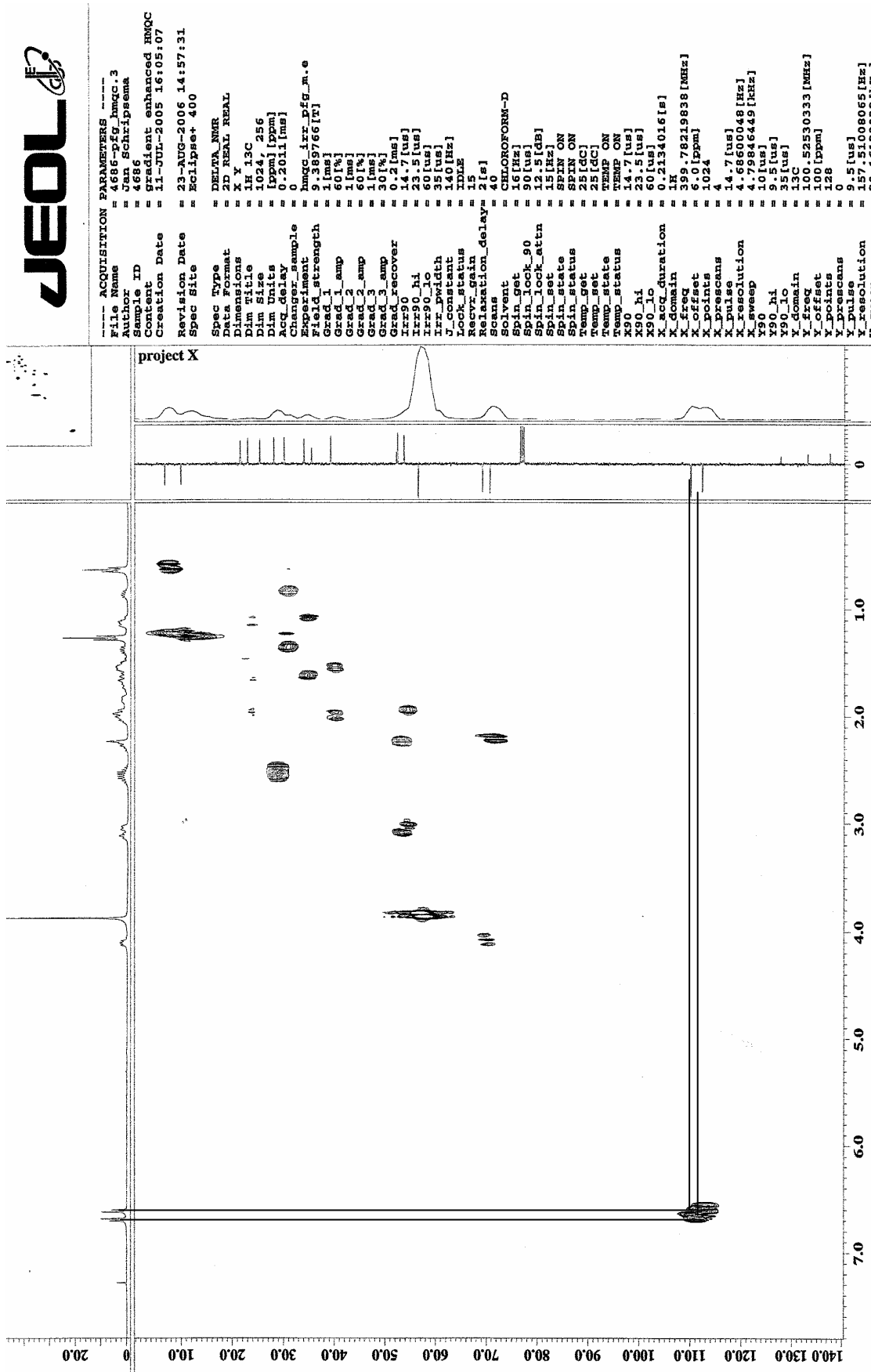


----- ACQUISITION PARAMETERS -----
File Name = 4686-pfg_hmbc.2
Authr = 4686 Schrippeema
Sample ID =
Content = Gradient enhanced HMBc
Creation Date = 11-JUL-2005 12:54:43
Revision Date = 13-JUL-2005 15:03:38
Spec Site = Eclipse+ 400

Spec Type = DELTA_NMR
Prgm Name = 2D_REAL_REAL
Dir = 1H_13C
Dim title = 1024_512
Dim Size = [ppm][ppm]
Acq_delay = 0.2011[ms]
Changer_sample = hmbc_pfg_m.emp
Experiment = 9.389766[F]
Field_strength = 1[ms]
Grad_1_amp = 60[%]
Grad_2_amp = 60[%]
Grad_3_amp = 1[ms]
Grad_3_amp = 30[%]
Grad_recover = 1[ms]
Irr90 = 14.7[us]
Irr90_hi = 23.5[us]
Irr90_lo = 60[us]
V_constant = 35[us]
Lock_status = 140[Hz]
Lock_gain = 8[Hz]
Recvr_gain = 25
Relaxation_delay = 2[us]
Scans = 40
Solvent = CHLOROFORM-D
Spin_get = 16[Hz]
Spin_lock_90 = 90[us]
Spin_lock_atn = 12.5[db]
Spin_set = 13[Hz]
Spin_status = SWH ON
Temp_get = 25[GC]
Temp_set = 25[GC]
Temp_status = TEMP ON
Temp_status = TEMP ON
X90_hi = 14.7[us]
X90_lo = 23.5[us]
X_acq_duration = 60[us]
X_domain = 39.78219838[MHz]
X_offset = 60[ppm]
X_points = 1024
X_prescans = 4
X_pulse = 14.7[us]
X_resolution = 4.68600048[Hz]
X_sweep = 4.79846449[kHz]
Y90_hi = 9.5[us]
Y90_lo = 35[us]
Y_acq_duration = 100[us]
Y_domain = 100.52530333[MHz]
Y_offset = 100[ppm]
Y_points = 128
Y_prescans = 0
Y_pulse = 9.5[us]



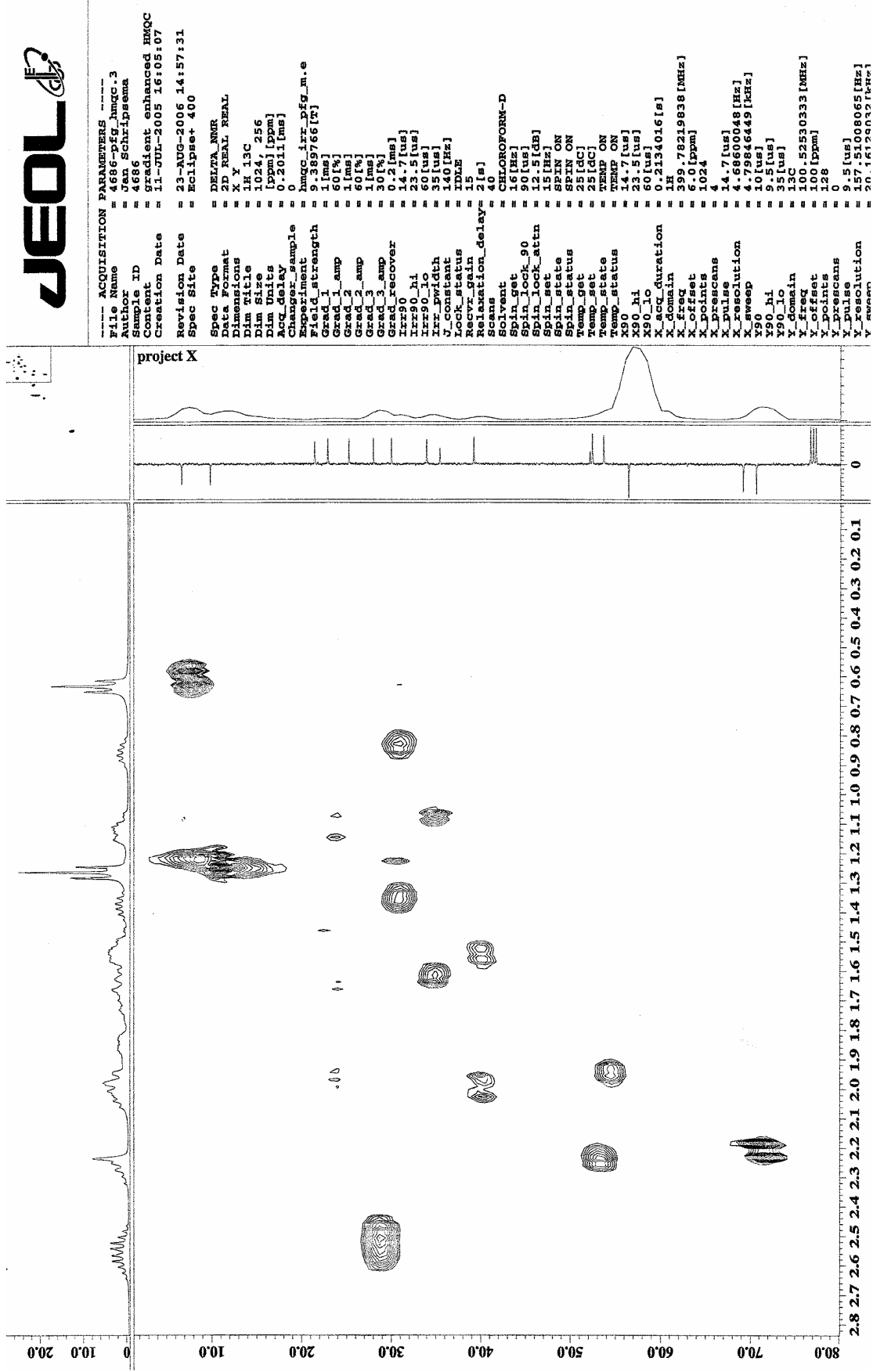
Espectro 71. Ampliação do mapa de correlação heteronuclear HMBc em CDC₃ do alcalóide (+)-aspidoilmina.



----- ACQUISITION PARAMETERS -----
 File Name = 4686-06-hmcc_3
 Author = Jan Schripsema
 Sample ID = 4686
 Content = Gradient enhanced HMQC
 Creation Date = 11-JUL-2005 16:05:07
 Revision Date = 23-AUG-2006 14:57:31
 Spec Site = Eclipse4 400

Spec Type = DELTA_NMR
 Dim 1 = 2D REAL REAL
 Dim 2 = X Y
 Dim Title = 1H 13C
 Dim Size = 1024, 256
 Dim Units = [ppm] [ppm]
 Acq_delay = 0.2011 [ms]
 Changer_sample = 0
 Experiment = hmcc Irr_Pfg_A.e
 Field_strength = 9.389766 [T]
 Grad_1_amp = 60%
 Grad_2_amp = 1 [ms]
 Grad_3_amp = 60%
 Grad_3_time = 1 [ms]
 Grad_3_time = 30%
 Grad_recover = 0.2 [ms]
 Irr90_hi = 14.7 [us]
 Irr90_lo = 23.5 [us]
 Irr90_pulse = 9 [us]
 Lock_status = 140 [Hz]
 Lock_status = LOCK
 Recvr_gain = 15
 Relaxation_delay = 2 [s]
 Scans = 40
 Solvent = CHLOROFORM-D
 Spin_get = 16 [Hz]
 Spin_lock_90 = 90 [us]
 Spin_lock_attn = 15 [dB]
 Spin_lock = 15 [dB]
 Spin_status = SPIN ON
 Temp_get = 25 [dC]
 Temp_set = 25 [dC]
 Temp_status = TEMP ON
 X90_hi = 14.7 [us]
 X90_lo = 23.5 [us]
 X_pulse = 9 [us]
 X_duration = 0.2134016 [s]
 X_domain = 1H
 X_freq = 399.78219838 [MHz]
 X_offset = 6.0 [ppm]
 X_points = 1024
 X_prescans = 4
 X_resolution = 14.7 [us]
 X_resolution = 4.68600048 [Hz]
 X_sweep = 4.79846449 [MHz]
 Y90_hi = 9 [us]
 Y90_lo = 35 [us]
 Y_domain = 13C
 Y_freq = 100.52530333 [MHz]
 Y_offset = 100 [ppm]
 Y_points = 128
 Y_prescans = 0
 Y_resolution = 9.5 [us]
 Y_resolution = 27.21000051 [Hz]

Espectro 72. Mapa de correlação heteronuclear HMQC em CDCl₃ do alcalóide (+)-aspidolimina.



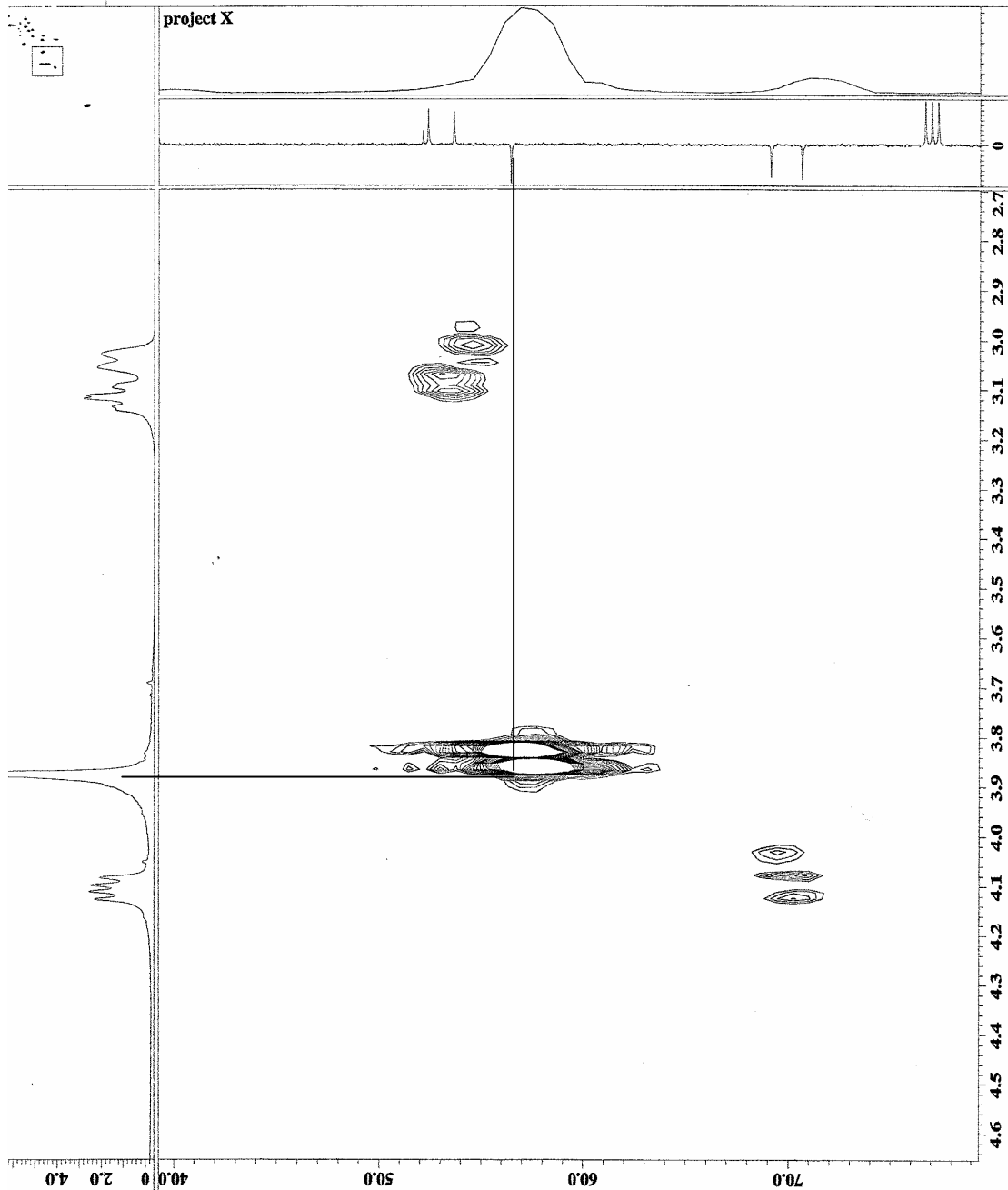
```

---- ACQUISITION PARAMETERS ----
File Name      = 4686-pfg_hmqc_3
Author        = Jan Schripsema
Sample ID     = 4686
Content       = gradient enhanced HMQC
Creation Date = 11-JUL-2005 16:05:07

Revision Date = 23-AUG-2006 14:57:31
Spec Site    = Eclipse+ 400

Spec Type    = DELTA NMR
Data Format  = 2D REAL REAL
Dimensions  = X Y
Dim 1 Title = 1H 13C
Dim 1 Size  = 1024, 256
Dim Units   = [ppm] [ppm]
Acq_Delay   = 0.2011 [ms]
Changer_sample
Experiment   = hmqc_1rr_pfg_m.e
F2_offset    = 1.387766 [Hz]
F2_resolution = 60 [Hz]
Grad_1_amp   = 1 [ms]
Grad_2_amp   = 60 [Hz]
Grad_3_amp   = 1 [ms]
Grad_recover = 0.2 [ms]
Irr90_hi     = 14.7 [us]
Irr90_lo     = 40.5 [us]
Irr_pwidth   = 35 [us]
J_constant   = 140 [Hz]
Lock_status  = IDLE
Recvz_gain   = 15
Relaxation_delay = 2 [s]
Scans        = 40
Solvent      = CHLOROFORM-D
Spin_get     = 50 [Hz]
Spin_lock_90 = 12.5 [dB]
Spin_lock_attn = 15 [Hz]
Spin_set     = SPIN ON
Spin_status  = SPIN ON
Temp_get     = 25 [dC]
Temp_set     = 25 [dC]
Temp_status  = TEMP ON
X90_hi       = 4.7 [us]
X90_lo       = 23.5 [us]
X90_lo       = 60 [us]
X_acq_duration = 0.2134016 [s]
X_domain     = 1H
X_freq       = 399.78219838 [MHz]
X_offset     = 6.0 [ppm]
X_points     = 1024
X_prescans   = 4
X_pulse      = 14.7 [us]
X_resolution = 4.7880848 [Hz]
X_sweep      = 40 [us]
Y90_hi       = 9.5 [us]
Y90_lo       = 35 [us]
Y_domain     = 13C
Y_freq       = 100.52530333 [MHz]
Y_offset     = 100 [ppm]
Y_points     = 256
Y_prescans   = 9
Y_pulse      = 9.5 [us]
Y_resolution = 157.51008065 [Hz]
Y_sweep     = 20.16120032 [Hz]
  
```

Espectro 73. Ampliação do mapa de correlação heteronuclear HMQC em CDCl_3 do alcalóide (+)-aspidolimina.

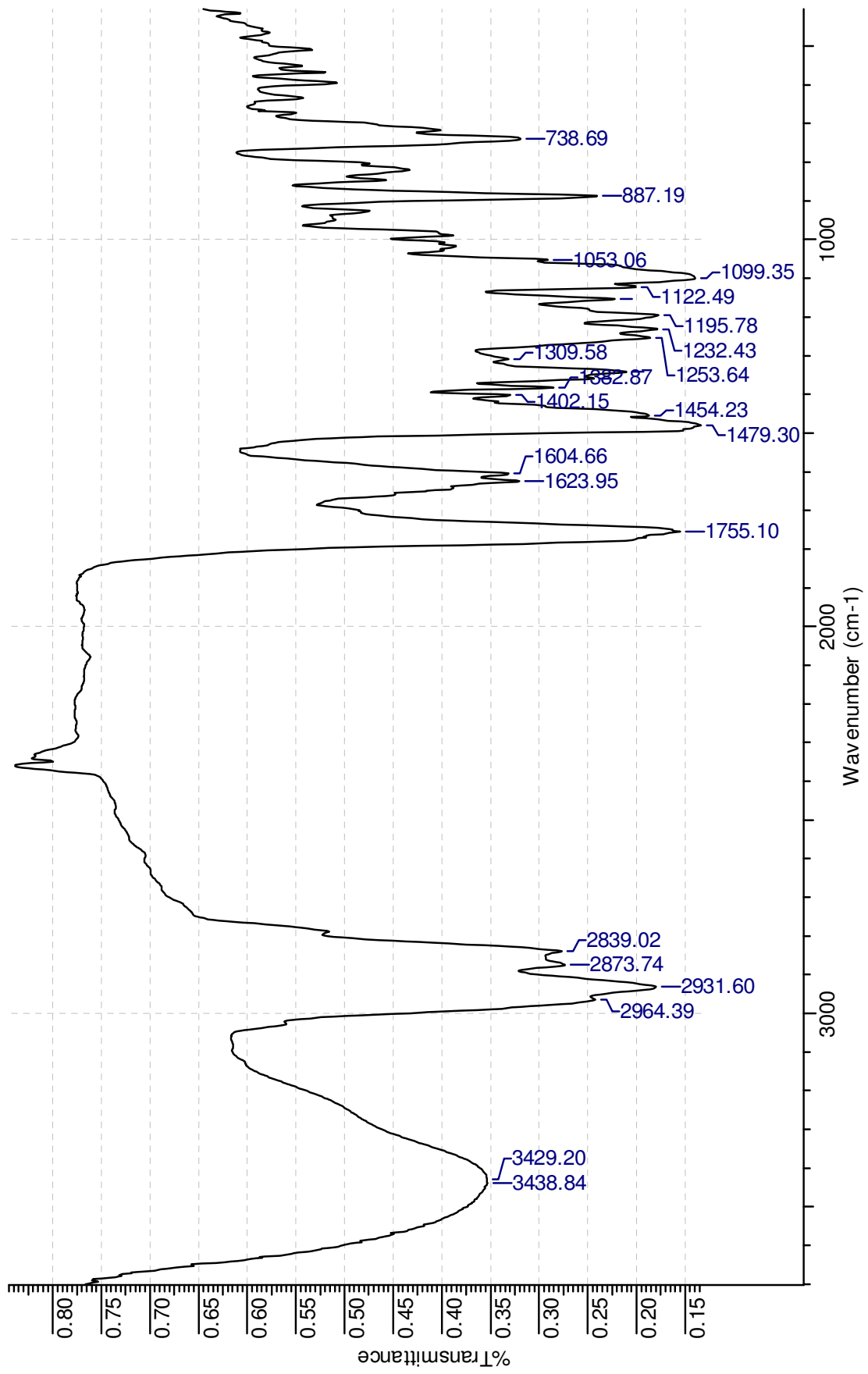


```

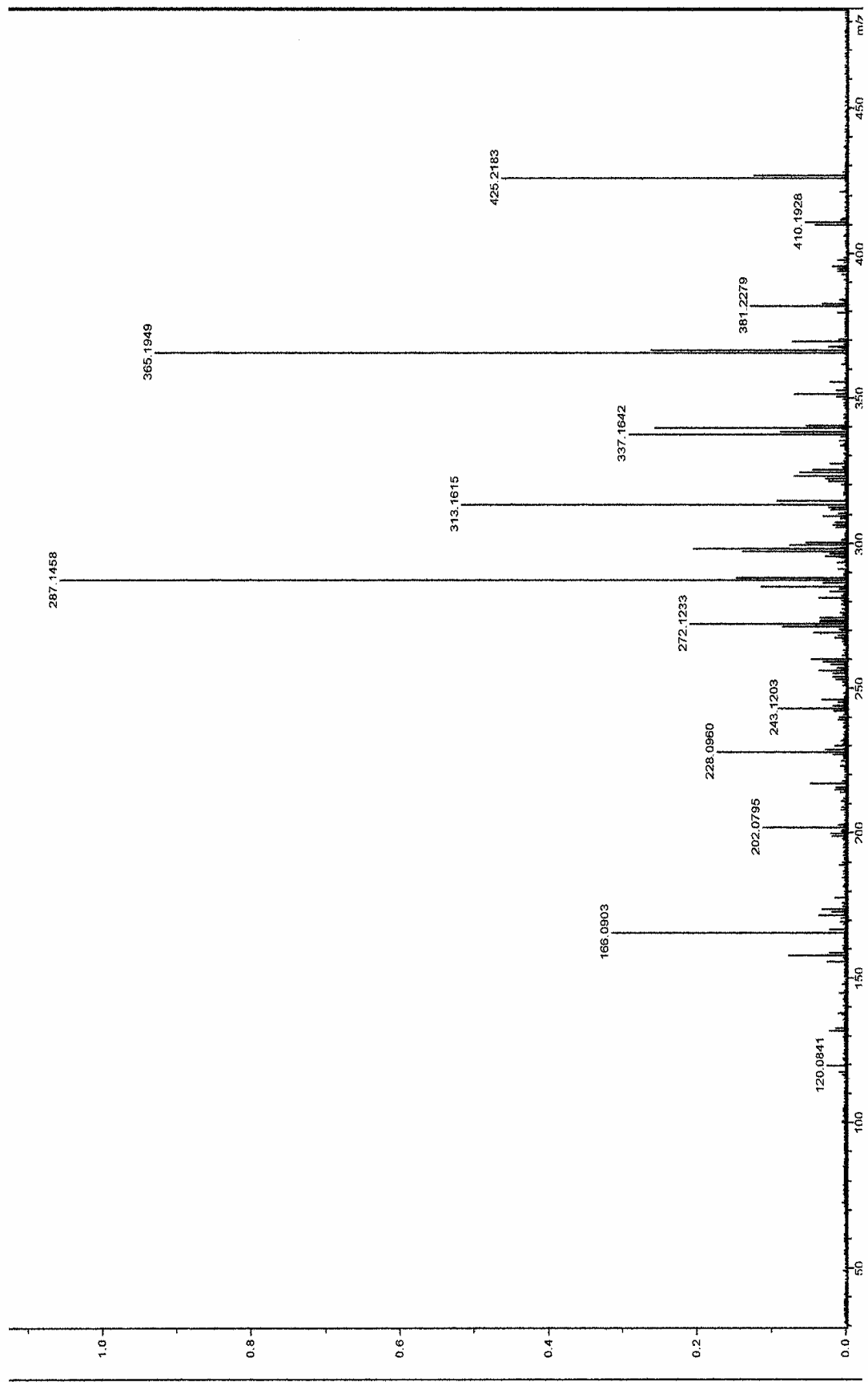
----- ACQUISITION PARAMETERS -----
File Name      = 4686-pfg_hmqc.3
Author        = Jan Schripsema
Sample ID     = 4686
Content       = gradient enhanced HMQC
Creation Date  = 11-JUL-2005 16:05:07
Revision Date  = 23-AUG-2006 14:57:31
Spec Site     = Eclipse+ 400

Spec Type     = DELTA NMR
Data Format    = 2D REAL REAL
Dimensions    = X Y
Dim 1 title   = 1H 13C
Dim 1 size    = 1024, 256
Dim 1 units   = [ppm][ppm]
Acq_delay     = 0.2011[ms]
Changer_sample = 0
Experiment     = hmqc_1hz_pfg_m.e
P1            = 1.000000[us]
P2            = 1.000000[us]
P3            = 60[us]
Grad_1_amp    = 1[ms]
Grad_2_amp    = 60[%]
Grad_3_amp    = 30[%]
Grad_recover  = 0.2[ms]
Irr90_hi     = 14.7[us]
Irr90_lo     = 60[us]
Irr_width    = 35[us]
J_constant    = 140[Hz]
Lock_status   = IDLE
Recvr_gain    = 15
Relaxation_delay = 2[us]
Scans         = 40
Solvent       = CHLOROFORM-D
Spin_lock_90  = 60[ms]
Spin_lock_attn = 12.5[db]
Spin_set      = 15[Hz]
Spin_status   = SPIN ON
Temp_set      = 25[dc]
Temp_status   = TEMP ON
X90_lo       = 23.5[us]
X90_hi       = 60[us]
X_acq_duration = 0.2134016[s]
X_domain      = 1H
X_freq        = 399.78219838[MHz]
X_offset      = 6.0[ppm]
X_points      = 1024
X_prescans    = 4
X_pulse       = 14.7[us]
X_resolution  = 4.78828449[kHz]
Y90_lo       = 10[us]
Y90_hi       = 9.5[us]
Y_domain      = 13C
Y_freq        = 100.52530333[MHz]
Y_offset      = 100[ppm]
Y_points      = 128
Y_prescans    = 9
Y_pulse       = 9.5[us]
Y_resolution  = 157.51008065[kHz]
  
```

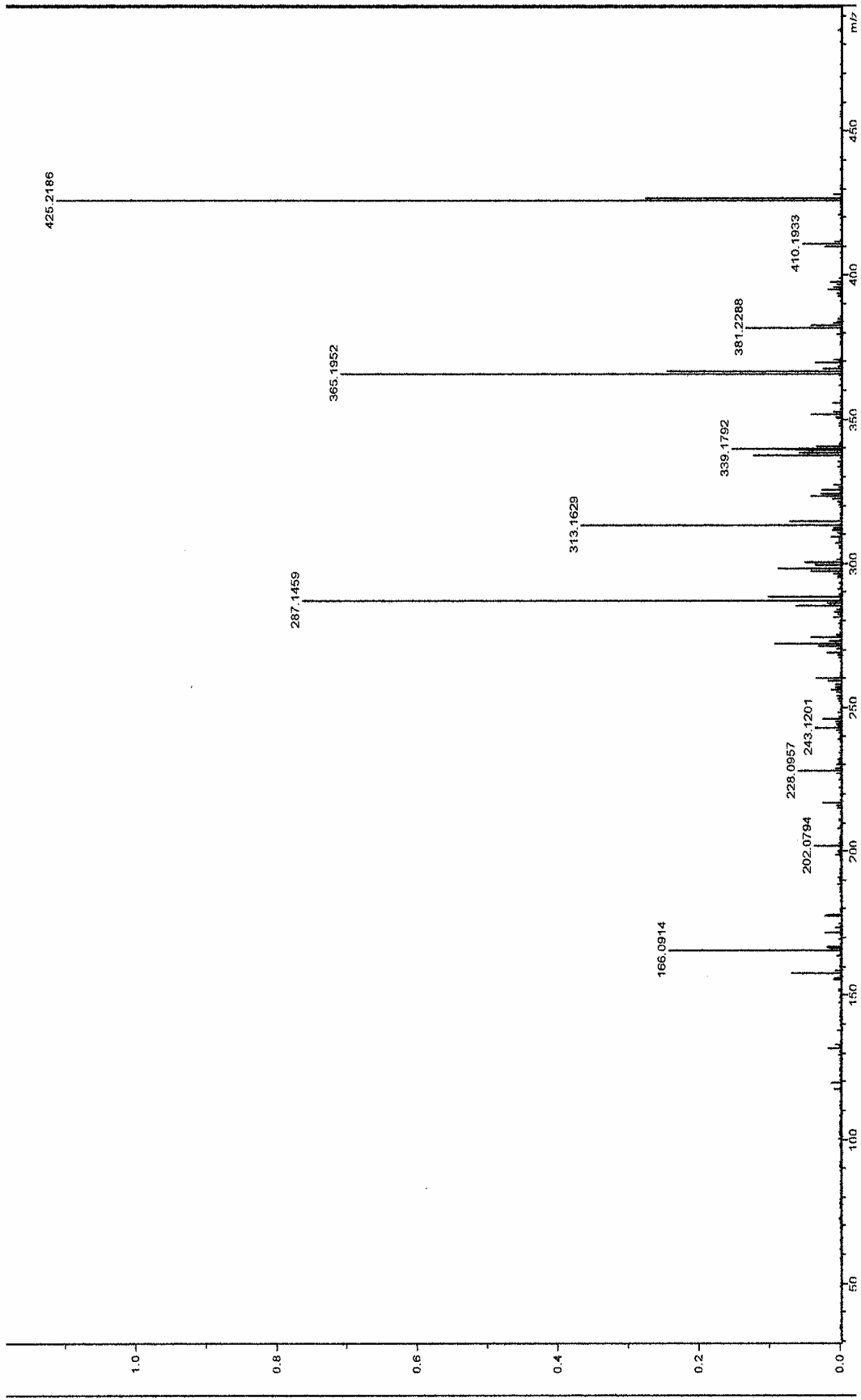
Espectro 74. Ampliação do mapa de correlação heteronuclear HMQC em CDCl_3 do alcalóide (+)-aspidolimina.



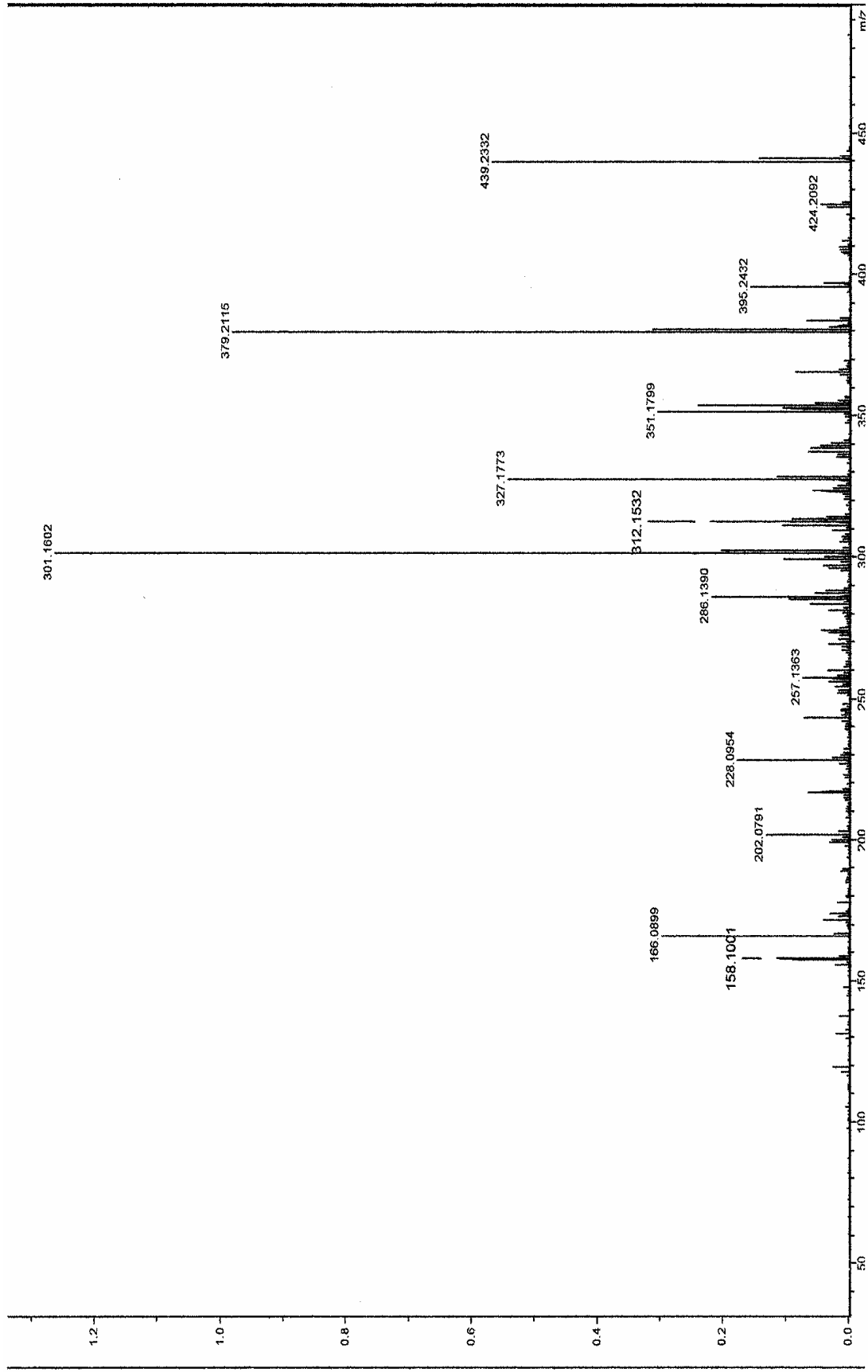
Espectro 75. Espectro de infravermelho da mistura dos alcalóides spruceanumina A e spruceanumina B.



Espectro 76. Espectro de massas da mistura dos alcalóides spruceanumina A e spruceanumina B.



Espectro 77. Espectro de massas da mistura dos alcalóides spruceanumina A e spruceanumina B.



Espectro 78. Espectro de massas da mistura dos alcalóides spruceanumina A e spruceanumina B.

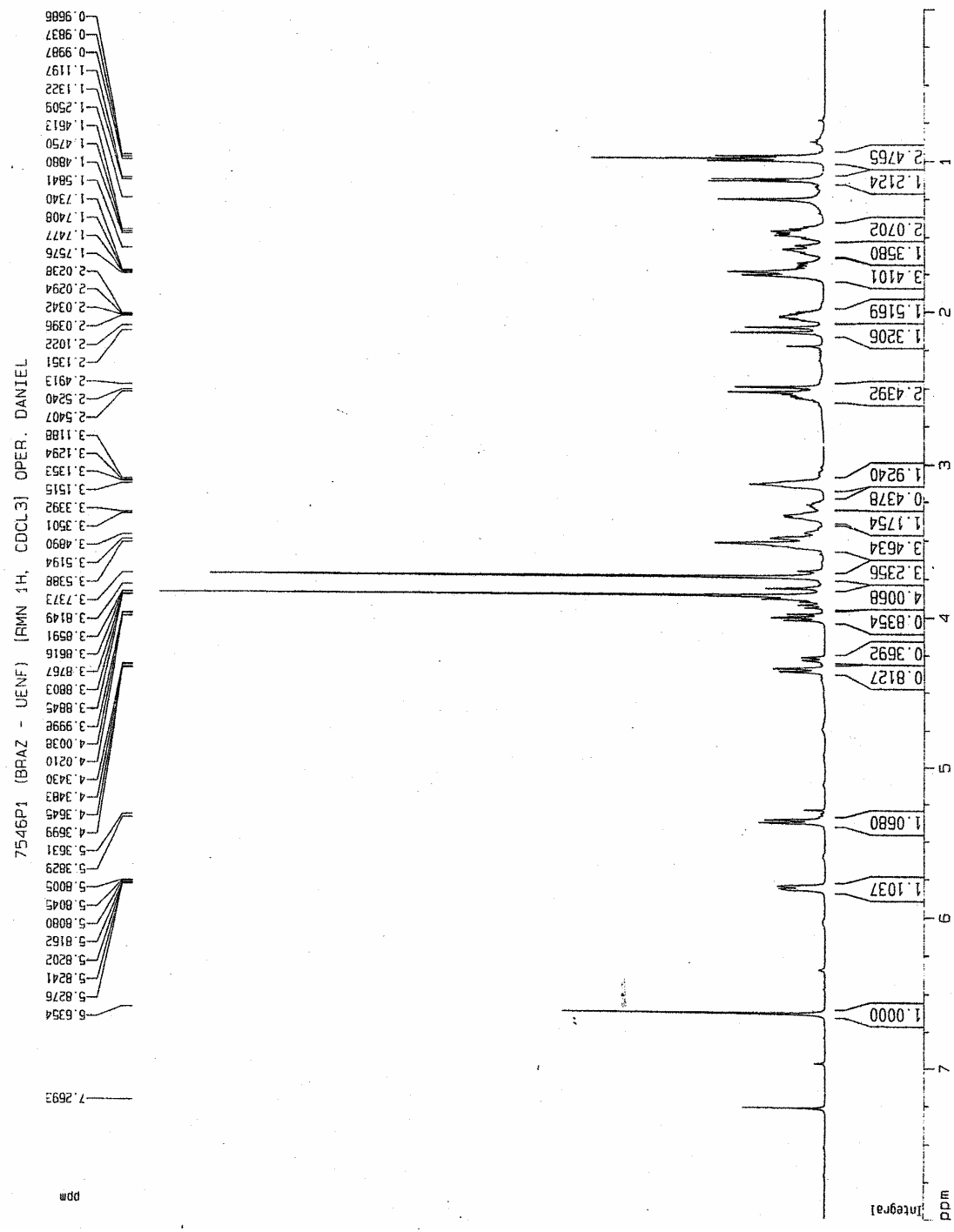
Current Data Parameters
 NAME 7546p1
 EXPNO 1
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20081013
 Time 19:20
 INSTRUM spect
 PROBHD 5 mm Dual 13C/
 PULPROG zg
 TD 65536
 SOLVENT CDCl3
 NS 8
 DS 0
 SWH 12019.230 Hz
 FIDRES 0.183399 Hz
 AQ 2.7263477 sec
 RG 90.5
 DW 41.600 usec
 DE 6.00 usec
 TE 0.0 K
 D1 1.0000000 sec
 MCREST 0.0000000 sec
 MCMRK 0.01500000 sec

***** CHANNEL f1 *****
 NUC1 JH
 P1 10.60 usec
 PL1 0.00 dB
 SFO1 500.0040001 MHz

F2 - Processing parameters
 S1 32768
 SF 500.0000225 MHz
 MDW no
 SSB 0
 LB 0.00 Hz
 GB 0
 PC 0.30

ID NMR plot parameters
 CX 20.00 cm
 CY 13.00 cm
 F1P 8.000 ppm
 F1 4000.00 Hz
 F2P 0.000 ppm
 F2 0.00 Hz
 PPMCM 0.40000 ppm/cm
 HZCM 200.00002 Hz/cm



Espectro 79. Espectro de RMN ¹H (500 MHz) em CDCl₃ da mistura dos alcalóides spruceanumina A e spruceanumina B.

7546P1 (BRAZ - UENF) (RMN 1H, CDCL3) OPER. DANIEL

```

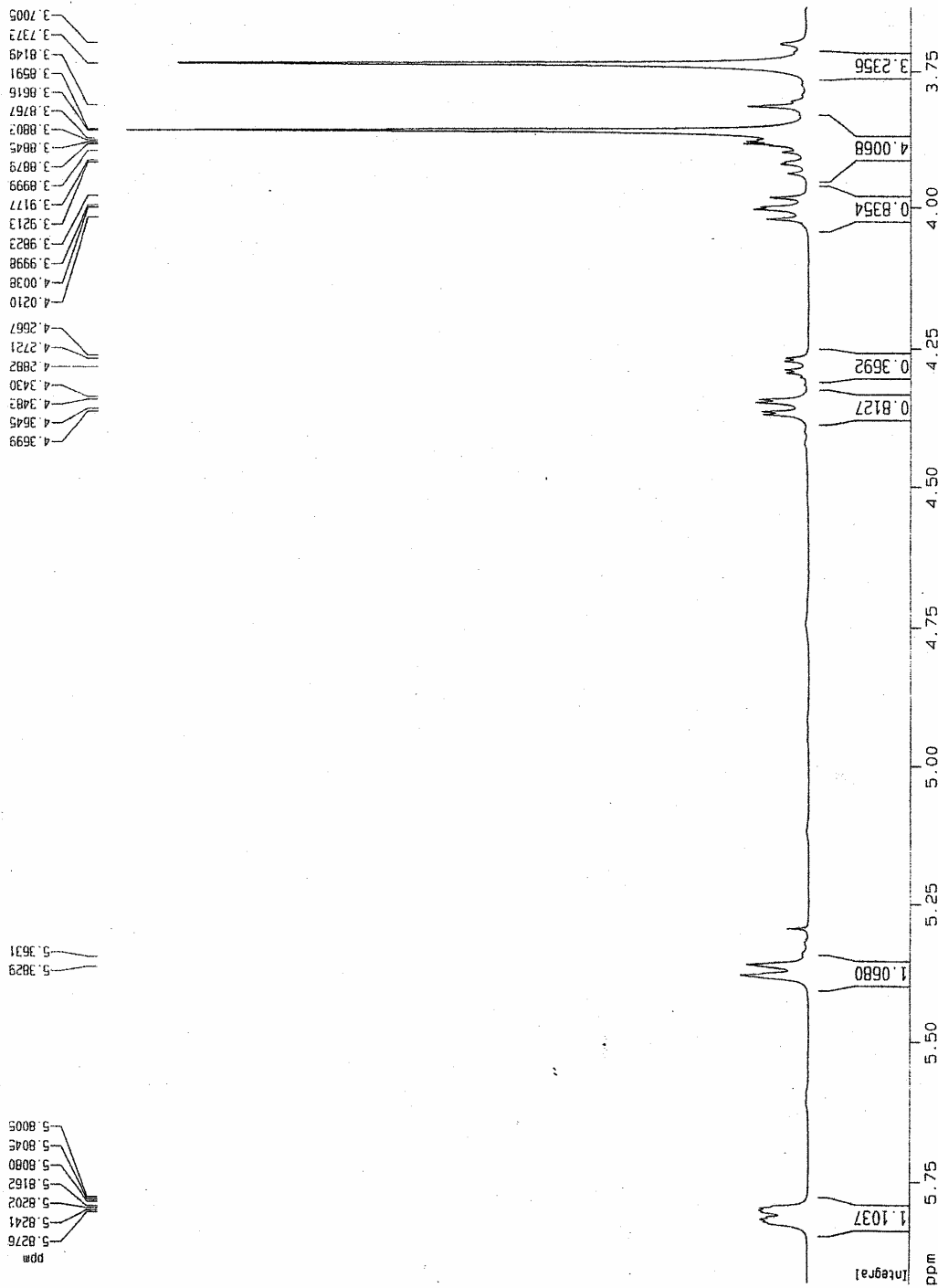
Current Data Parameters
NAME      7546P1
EXPNO    1
PROCNO   1

F2 - Acquisition Parameters
Date_    20051018
Time     19:20
INSTRUM spect
PROBHD   5 mm Dui1 13C/
PULPROG zgpg30
SOLVENT  CDC13
NS       8
DS       0
SWH      12019.230 Hz
FIDRES   0.183399 Hz
AQ       2.7263477 sec
RG       90.5
DM       41.600 usec
DE       6.00 usec
TE       0.0 K
D1       1.00000000 sec
MCREST   0.00000000 sec
MCNRK    0.01500000 sec

***** CHANNEL f1 *****
NUC1      1H
P1        10.60 usec
PL1       0.00 dB
SFO1      500.0040001 MHz

F2 - Processing parameters
SI        32768
SF        500.0000263 MHz
WDW       no
SSB       0
LB        0.00 Hz
GB        0
PC        0.30

1D NMR plot parameters
CX        20.00 cm
CY        13.00 cm
F1P       5.934 ppm
F1        2967.15 Hz
F2P       3.635 ppm
F2        1817.52 Hz
P1MCH    0.11496 ppm/cm
HZCM     57.48176 Hz/cm
    
```



Espectro 80. Ampliação da região de δ_H 3,7-5,8 do espectro de RMN 1H (500 MHz) em $CDCl_3$ da mistura dos alcóides spruceanumina A e spruceanumina B.

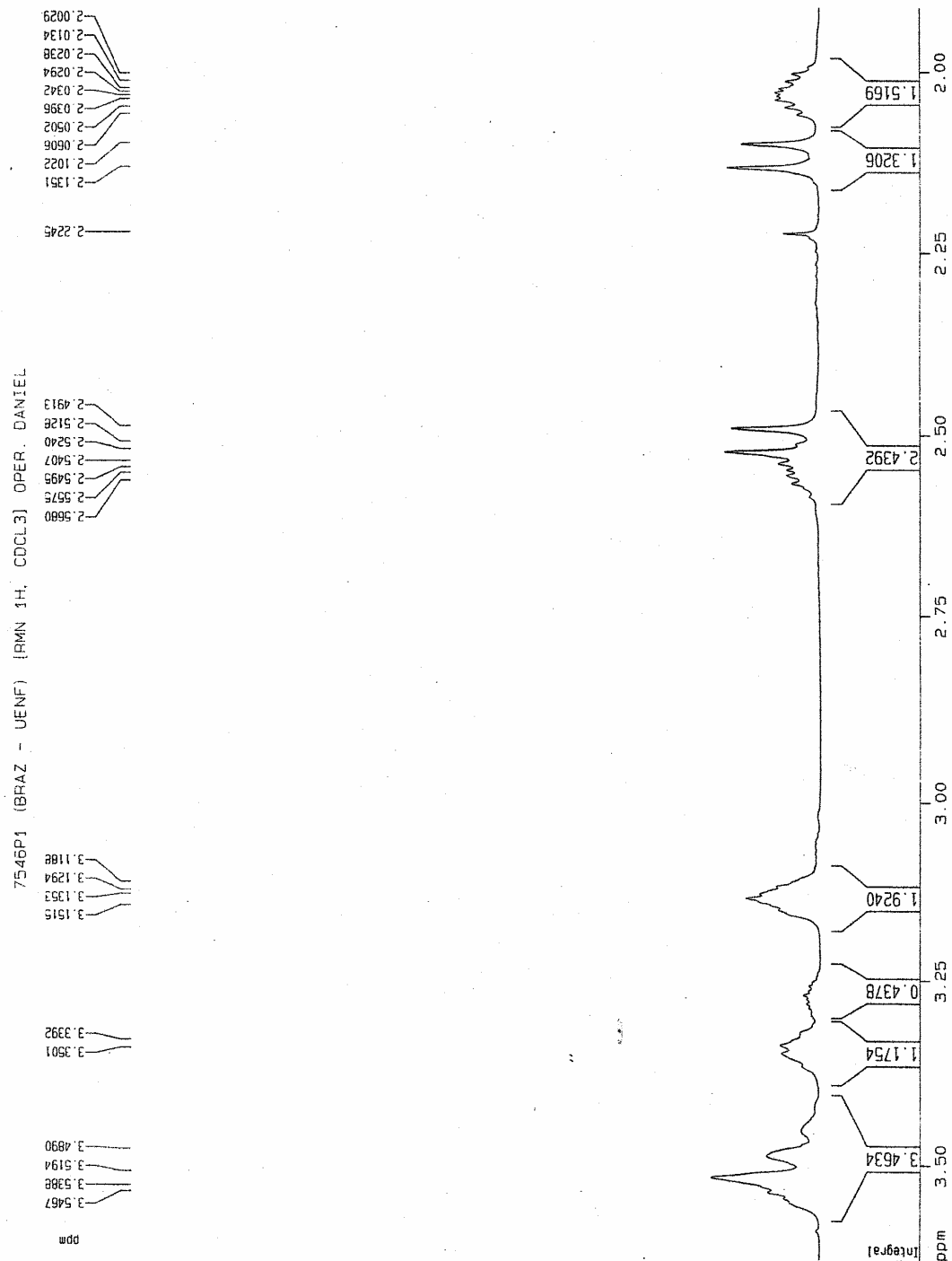
Current Data Parameters
 NAME 7546P1
 EXPNO 1
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20051018
 Time 19.20
 INSTRUM spect
 PROBHD 5 mm Dual 13C/
 PULPROG zg
 TD 65536
 SOLVENT CDCl3
 NS 8
 DS 0
 SWH 12019.230 Hz
 FIDRES 0.183398 Hz
 AQ 2.7263477 sec
 RG 90.5
 DW 41.500 usec
 DE 6.00 usec
 TE 0.0 K
 D1 1.00000000 sec
 MCREST 0.00000000 sec
 MCMRK 0.01500000 sec

***** CHANNEL f1 *****
 NUC1 1H
 P1 10.60 usec
 PL1 0.00 dB
 SFO1 500.0040001 MHz

F2 - Processing parameters
 SI 32768
 SF 500.0000225 MHz
 ADW no
 SSB 0
 LB 0.00 Hz
 GB 0
 PC 0.30

ID NMR plot parameters
 CX 20.00 cm
 CY 13.00 cm
 F1P 3.631 DDm
 F1 1815.58 Hz
 F2P 1.911 DDm
 F2 955.51 Hz
 PPMCM 0.08601 ppm/cm
 HZCM 43.00330 Hz/cm



Espectro 81. Ampliação da região de δ_H 2,0-3,5 do espectro de RMN 1H (500 MHz) em $CDCl_3$ da mistura dos alcalóides spruceanumina A e spruceanumina B.

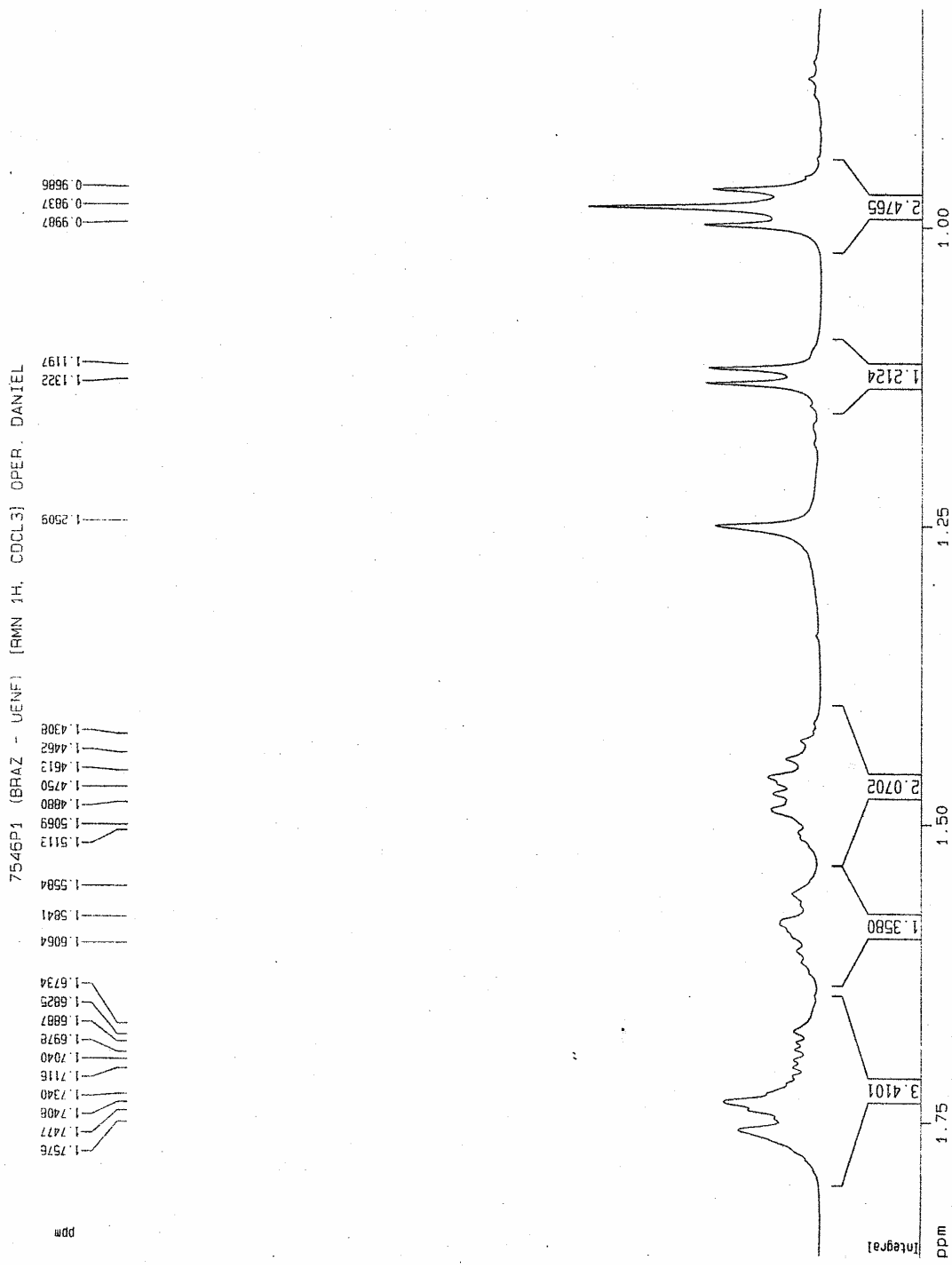
Current Data Parameters
 NAME 7546p1
 EXPNO 1
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20051018
 Time 19.20
 INSTRUM spect
 PROBHD 5 mm Dual 13C/
 PULPROG zg
 ID 65536
 SOLVENT CDCl3
 NS 8
 DS 0
 SMH 12019.230 Hz
 FIDRES 0.163999 Hz
 AQ 2.7263477 sec
 RG 90.5
 DW 41.600 usec
 DE 6.00 usec
 TE 0.0 K
 D1 1.0000000 sec
 MCREST 0.0000000 sec
 MCMRK 0.01500000 sec

***** CHANNEL f1 *****
 NUC1 1H
 P1 10.60 usec
 PL1 0.00 dB
 SF01 500.0040001 MHz

F2 - Processing parameters
 S1 32768
 SF 500.0000225 MHz
 HDW nd
 SSB 0
 LB 0.00 Hz
 GB 0
 PC 0.30

1D NMR plot parameters
 CX 20.00 cm
 CY 13.00 cm
 F1P 1.861 ppm
 F1 930.38 Hz
 F2P 0.816 ppm
 F2 407.91 Hz
 PPMCM 0.05225 ppm/cm
 HZCM 26.12337 Hz/cm



Espectro 82. Ampliação da região de δ_H 0,5-1,7 do espectro de RMN 1H (500 MHz) em $CDCl_3$ da mistura dos alcalóides spruceanumina A e spruceanumina B.

7546P1 (BRAZ - UENF) [RMN 13C-BB. CDC.3] OPER. DANIEL

Current Data Parameters
 NAME 7546P1
 EXPNO 2
 PROCNO 1

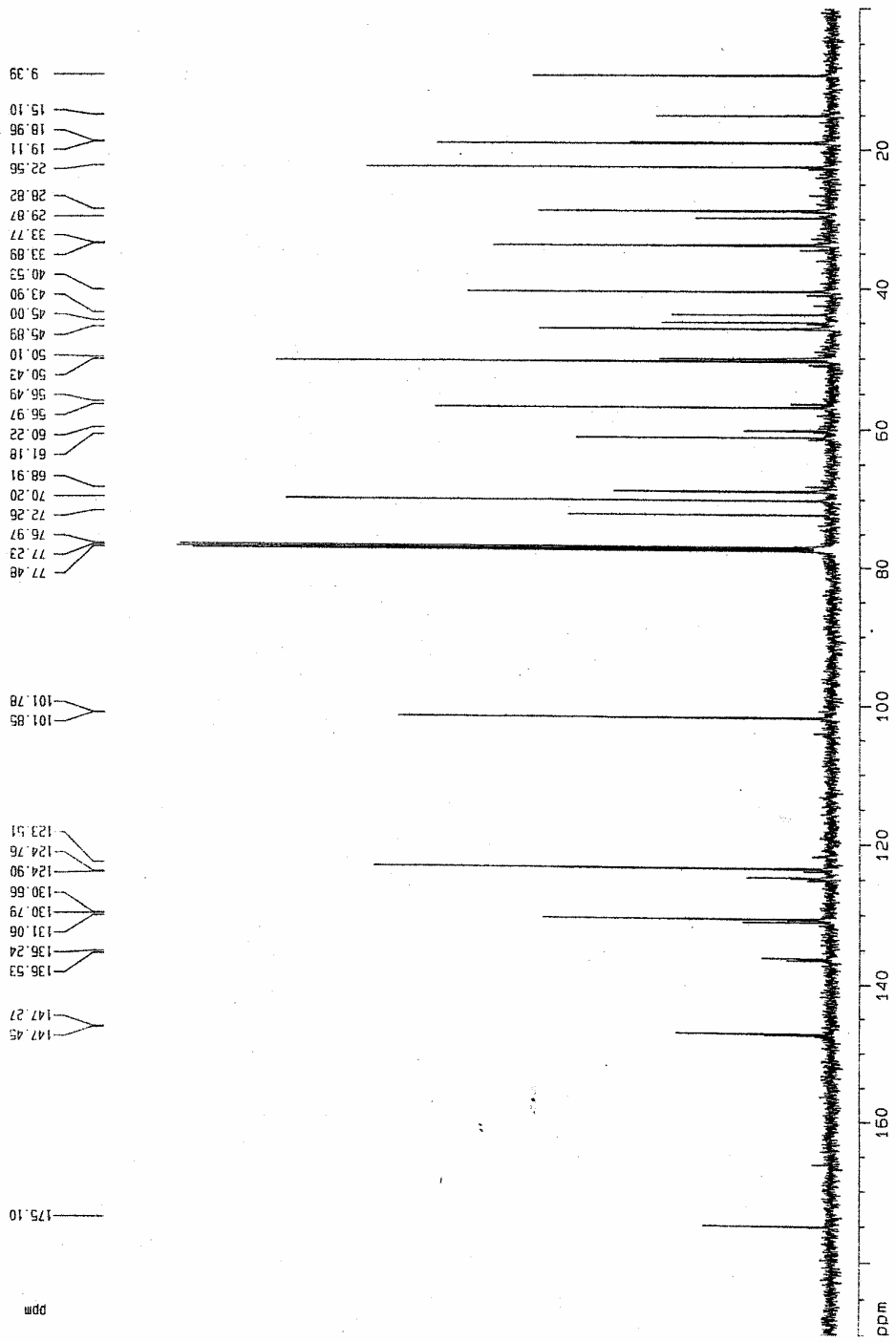
F2 - Acquisition Parameters
 Date_ 20051018
 Time 19.30
 INSTRUM spect
 PROBD 5 mm Dual 13C/
 PULPROG zgpg
 TD 32768
 SOLVENT CDC13
 NS 2048
 DS 0
 SWH 32679.738 Hz
 FIDRES 0.987306 Hz
 AQ 0.5014004 sec
 RG 8192
 DW 15.300 usec
 DE 6.00 usec
 TE 0.0 K
 D1 1.00000000 sec
 d11 0.03000000 sec
 DELTA 0.89999998 sec
 MCREST 0.00000000 sec
 MCMRK 0.01500000 sec

***** CHANNEL f1 *****
 NUC1 13C
 P1 6.10 usec
 PL1 0.00 dB
 SFO1 125.737625 MHz

***** CHANNEL f2 *****
 CDP002 wa1z16
 NUC2 1H
 P02 90.00 usec
 PL2 0.00 dB
 PL12 15.42 dB
 PL13 15.42 dB
 SFO2 500.0037825 MHz

F2 - Processing parameters
 SI 16384
 SF 125.7250605 MHz
 NDM EM
 SSB 0
 LB 1.00 Hz
 SB 0
 PC 1.40

1D NMR plot parameters
 EX 20.00 cm
 CY 12.00 cm
 F1P 190.000 ppm
 F1 23887.77 Hz
 F2 0.000 ppm
 F2 9.50000 ppm/cm
 ZPCM 1194.38831 Hz/cm



Espectro 83. Espectro de RMN ¹³C (125 MHz) em CDC1₃ mistura dos alcalóides spruceanumina A e spruceanumina B.

7546P1 (BRAZ - UENF) [RMN 13C-BB, CDCl3] OPER. DANIEL

Current Data Parameters
 NAME 7546P1
 EXPNO 2
 PROCNO 1

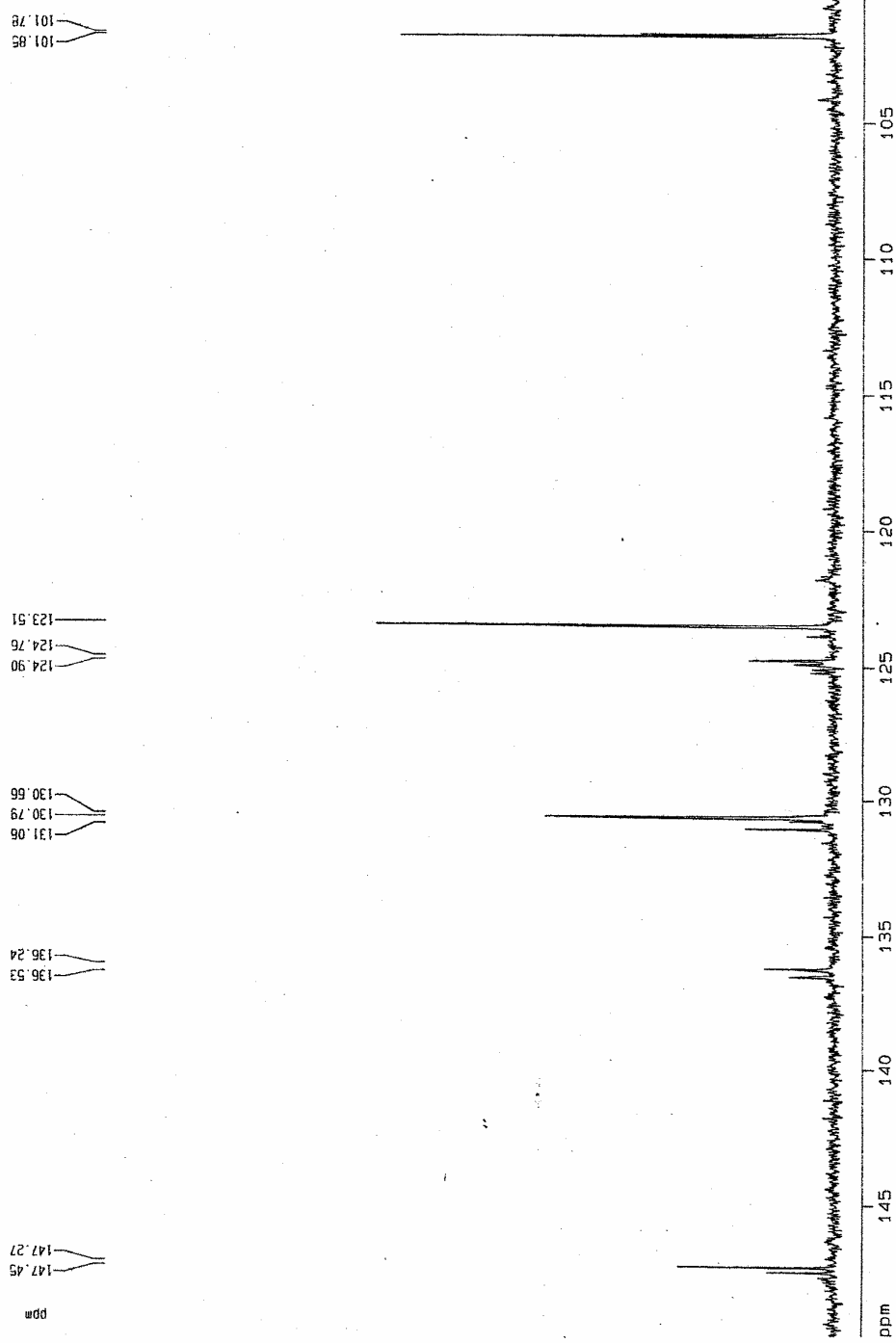
F2 - Acquisition Parameters
 Date_ 20051018
 Time 19.30
 INSTRUM spect
 PROBHD 5 mm Duij 13C/
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCl3
 NS 2048
 DS 0
 SWH 32679.738 Hz
 FIDRES 0.997305 Hz
 AQ 0.5014004 sec
 RG 8192
 CW 15.300 USEC
 DE 6.00 USEC
 TE 0.0 K
 D1 1.00000000 sec
 d11 0.03000000 sec
 DELTA 0.89999999 sec
 ACQRES 0.00000000 sec
 MCWRR 0.01500000 sec

===== CHANNEL f1 =====
 NUC1 13C
 P1 6.10 USEC
 PL1 0.00 dB
 SFO1 125.7376725 MHz

===== CHANNEL f2 =====
 CPROG2 waltz16
 NUC2 1H
 PCPD2 90.00 usec
 PL2 0.00 dB
 PL12 15.42 dB
 PL13 15.42 dB
 SFO2 500.0037826 MHz

F2 - Processing parameters
 SI 16384
 SF 125.7250805 MHz
 NQW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

1D NMR plot parameters
 CX 20.00 cm
 CY 12.00 cm
 F1F 149.781 ppm
 F1 15831.23 Hz
 F2P 100.374 ppm
 F2 12619.54 Hz
 PPMCM 2.47035 ppm/cm
 FZCM 310.56450 Hz/cm



Espectro 84. Ampliação da região δ_c 100-147 do espectro de RMN ^{13}C (125 MHz) em CDCl_3 da mistura dos alcólides spruceanumina A e spruceanumina B.

7546P1 (BRAZ - UENF) [RMN 13C-BB, CDCL3] OPER. DANIEL

```

Current Data Parameters
NAME      7546P1
EXPNO    2
PROCNO   1

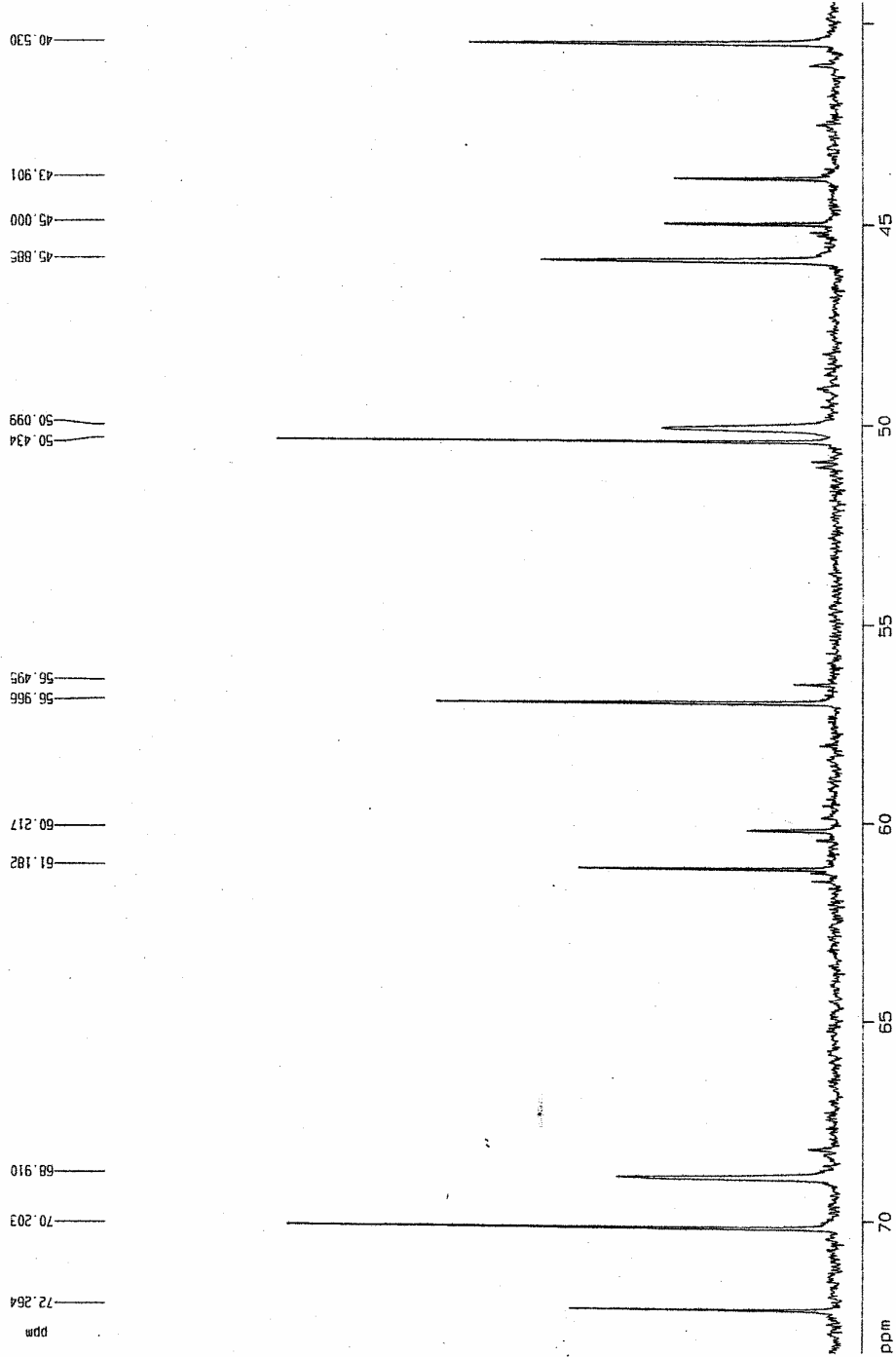
F2 - Acquisition Parameters
Date_    20051018
Time     19.30
INSTRUM  spect
PROBHD   5 mm Dual 13C/
PULPROG  zgpg
TD        32768
SOLVENT  CDCl3
NS        2048
DS        0
SWH       32679.738 Hz
FIDRES    0.997306 Hz
AQ         0.5014004 sec
RG         8192
CW         15.300 usec
DE         5.00 usec
TE         0.0 K
D1         1.00000000 sec
d11        0.03000000 sec
DELTA     0.89999998 sec
vCPREST   0.00000000 sec
vCWRRK    0.01500000 sec

***** CHANNEL f1 *****
NUC1      13C
P1         6.10 usec
PL1        0.00 dB
SFO1      125.7375725 MHz

***** CHANNEL f2 *****
CPDPRG2   waltz16
NUC2
P2         90.00 usec
PL2        0.00 dB
PL12       15.42 dB
PL13       15.42 dB
SFO2      500.0037826 MHz

F2 - Processing parameters
SI         16384
SF         125.7250806 MHz
WDW        EM
SSB        0
B          1.00 Hz
S8         0
PC         1.40

3D NMR plot parameters
CX         20.00 cm
CY         12.00 cm
F1P        73.316 ppm
F2P        9217.60 Hz
F3P        39.444 ppm
vPCMH      4959.14 Hz
vPCMK      1.69365 ppm/cm
vZCM       212.92285 Hz/cm
  
```



Espectro 85. Ampliação da região δ_c 40-72 do espectro de RMN ^{13}C (125 MHz) em CDCl_3 da mistura dos alcalóides spruceanumina A e spruceanumina B.

7546P1 (EFAZ - UENF) (RMN 13C-BB: CDCL3) OPER. DANIEL

Current Data Parameters
 NAME 7546P1
 EXPNO 2
 PROCNO 1

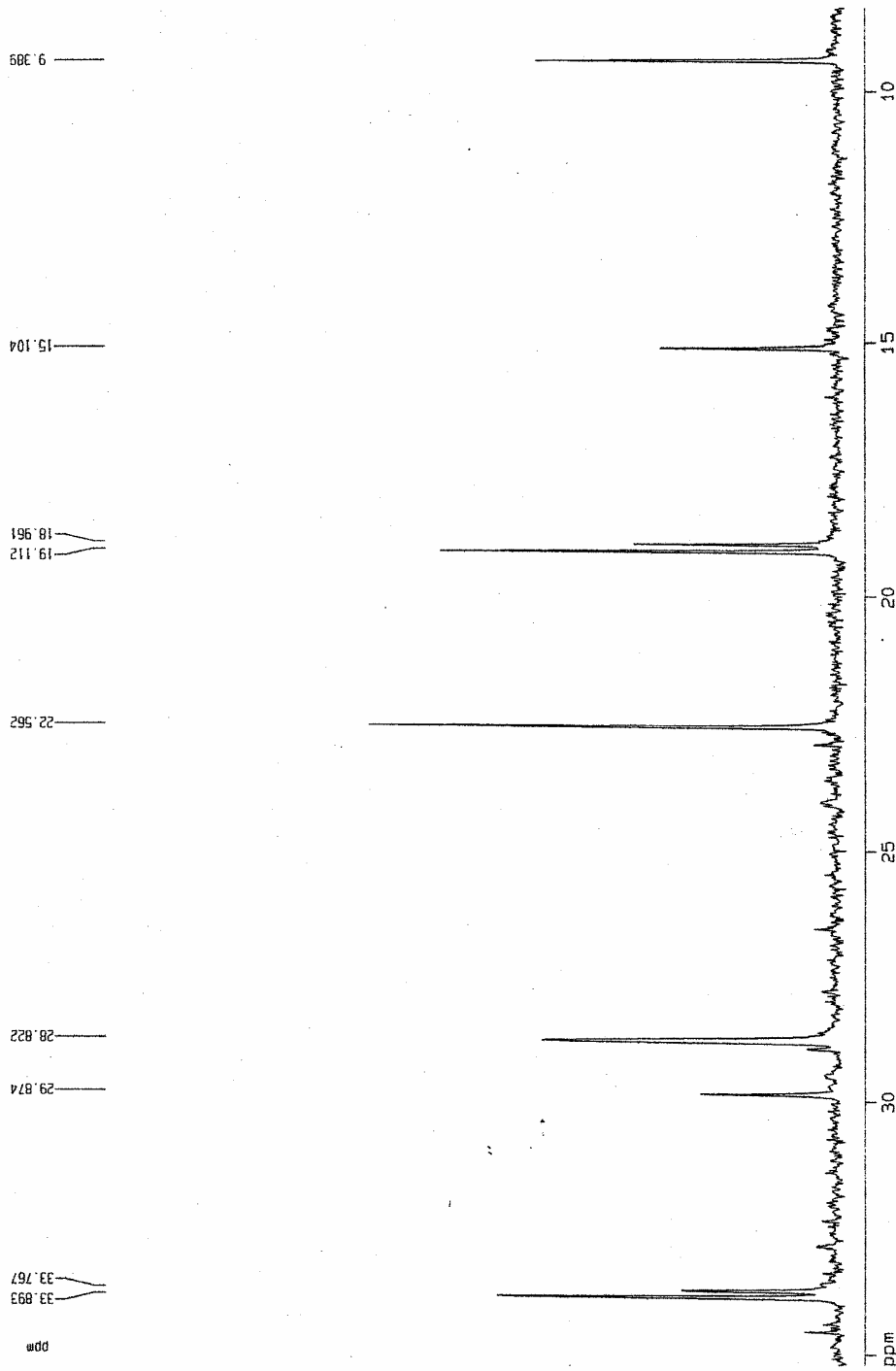
F2 - Acquisition Parameters
 Date_ 20051018
 Time_ 19.30
 INSTRUM spect
 PROBHD 5 mm Dual 13C/
 PULPROG zgpg30
 TD 32768
 SOLVENT CDCL3
 NS 2048
 DS 0
 SWH 32679.738 Hz
 FIDRES 0.957305 Hz
 AQ 0.5014004 sec
 RG 8192
 CW 15.300 usec
 DE 6.00 usec
 TE 0.0 K
 DT 1.0000000 sec
 D1 0.0300000 sec
 DELTA 0.8999998 sec
 MCREST 0.0000000 sec
 MCWRR 0.0150000 sec

===== CHANNEL f1 =====
 NUC1 13C
 P1 6.10 usec
 PL1 0.00 dB
 SF01 125.7376725 MHz

===== CHANNEL f2 =====
 CPOPRG2 waltz16
 NUC2 1H
 PCPD2 90.00 usec
 PL2 0.00 dB
 PL12 15.42 dB
 PL13 15.42 dB
 SF02 500.0037826 MHz

F2 - Processing parameters
 SI 16384
 SF 125.7250805 MHz
 WDW EM
 SSB 0
 LB 1.00 Hz
 GB 0
 PC 1.40

1D NMR plot parameters
 CX 20.00 cm
 CY 12.00 cm
 F1P 35.222 ppm
 F1 4428.28 Hz
 F2P 6.332 ppm
 F2 1047.55 Hz
 PPMCM 1.34448 ppm/cm
 HZCM 159.03487 Hz/cm



Espectro 86. Ampliação da região δ_c 9,-33 do espectro de RMN ^{13}C (125 MHz) em $CDCl_3$ da mistura dos alcalóides spruceanumina A e spruceanumina B.

7546P1 (BRAZ - UENF) [RMN 13C-DEPT135, CDCL3] OPER. DANIEL

```

Current Data Parameters
NAME      7546p1
EXPNO    3
PROCNO   1

F2 - Acquisition Parameters
Date_    20051018
Time     20.38
INSTRUM  spect
PROBHD   5 mm Dui3
PULPROG  zgpg30
SOLVENT  CDCl3
NS       1024
DS       4
SWH       39576.738 Hz
FIDRES   0.987306 Hz
AQ       0.5014004 sec
RG       8192
DM       15.300 usec
DE       6.00 usec
TE       300.2 K
CNS1Z    145.0000000
D1       1.000000000 sec
D2       0.00344828 sec
d12      0.00002000 sec
DELTA    0.00000000 sec
MCHRG1   0.00000000 sec
MCHRG2   0.00000000 sec
MCHRG3   0.01500000 sec

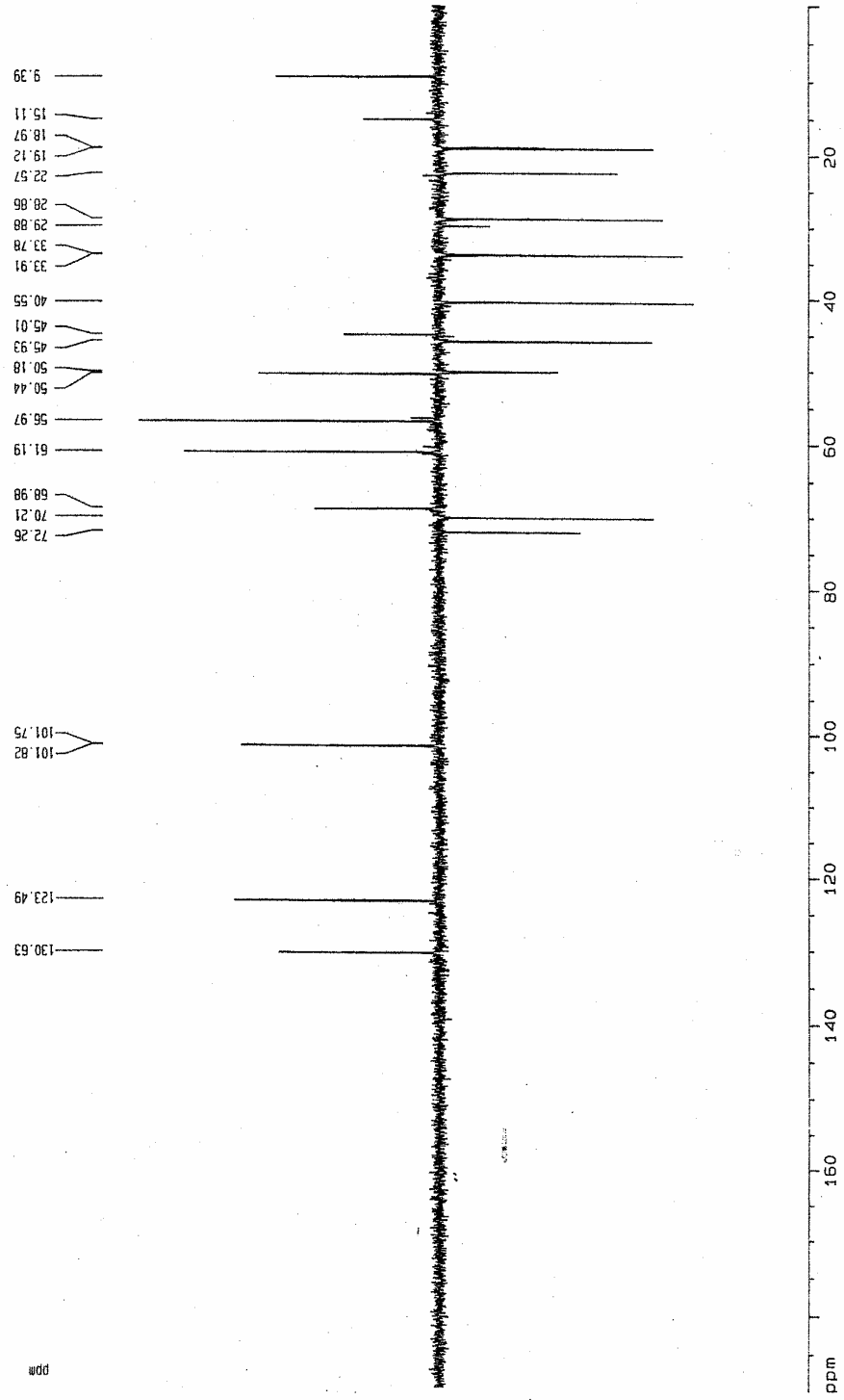
***** CHANNEL f1 *****
NUC1     13C
NUC2     13C
PCPD2    15.25 usec
PL1      0.00 dB
PL2      0.00 dB
SF01     125.7376725 MHz

***** CHANNEL f2 *****
NUC1     13C
NUC2     13C
PCPD2    15.25 usec
PL1      0.00 dB
PL2      0.00 dB
SF02     500.0037825 MHz

F1 - Acquisition parameters
ND0      512
SF01     125.7376725 MHz
FIDRES   46.6589523 Hz
SFO2     500.0037825 MHz
F2 - Processing parameters
SF       125.7258005 MHz
WDW       EM
SSB       0
LB        1.00 Hz
GB        0
PC        1.40

F1 - Processing parameters
SI        32768
SF01     125.7376725 MHz
FIDRES   46.6589523 Hz
SFO2     500.0037825 MHz
WDW       EM
SSB       0
LB        1.00 Hz
GB        0
PC        1.40

ID NMR plot parameters
CX       20.00 cm
CY       6.00 cm
F1P      190.000 ppm
F2P      23687.76 Hz
ZP        -0.000 ppm
SFO1     125.7258005 MHz
SFO2     500.0037825 MHz
ZCZM     1194.38806 Hz/cm
  
```



Espectro 87. Espectro de RMN ¹³C (125 MHz-DEPT-135) em CDCl₃ da mistura dos alcalóides spruceanumina A e spruceanumina B.

7546P1 (BRAZ - UENF) (COSY, GDCL3) OPER. DANIEL

Current Data Parameters
NAME 7546P1
EXPNO 1
PROCNO 1

F2 - Acquisition Parameters

Date_ 20051018
Time 20.55
INSTRUM spect
PROBHD 5 mm (1H) spect
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
DS 4
OS 16
SH 5000.000 MHz
FIDRES 0.2445000 MHz
AQ 0.2810000 sec
RG 101.5
AQ 101.5
OW 100.000 usec
TE 300.2 K
DE 0.0000000 sec
D1 1.00000000 sec
D2 0.00000000 sec
D3 0.00000000 sec
D4 0.00000000 sec
D5 0.00000000 sec
D6 0.00000000 sec
D7 0.00000000 sec
D8 0.00000000 sec
D9 0.00000000 sec
D10 0.00000000 sec
D11 0.00000000 sec
D12 0.00000000 sec
D13 0.00000000 sec
D14 0.00000000 sec
D15 0.00000000 sec
D16 0.00000000 sec
D17 0.00000000 sec
D18 0.00000000 sec
D19 0.00000000 sec
D20 0.00000000 sec
D21 0.00000000 sec
D22 0.00000000 sec
D23 0.00000000 sec
D24 0.00000000 sec
D25 0.00000000 sec
D26 0.00000000 sec
D27 0.00000000 sec
D28 0.00000000 sec
D29 0.00000000 sec
D30 0.00000000 sec
D31 0.00000000 sec
D32 0.00000000 sec
D33 0.00000000 sec
D34 0.00000000 sec
D35 0.00000000 sec
D36 0.00000000 sec
D37 0.00000000 sec
D38 0.00000000 sec
D39 0.00000000 sec
D40 0.00000000 sec
D41 0.00000000 sec
D42 0.00000000 sec
D43 0.00000000 sec
D44 0.00000000 sec
D45 0.00000000 sec
D46 0.00000000 sec
D47 0.00000000 sec
D48 0.00000000 sec
D49 0.00000000 sec
D50 0.00000000 sec
D51 0.00000000 sec
D52 0.00000000 sec
D53 0.00000000 sec
D54 0.00000000 sec
D55 0.00000000 sec
D56 0.00000000 sec
D57 0.00000000 sec
D58 0.00000000 sec
D59 0.00000000 sec
D60 0.00000000 sec
D61 0.00000000 sec
D62 0.00000000 sec
D63 0.00000000 sec
D64 0.00000000 sec
D65 0.00000000 sec
D66 0.00000000 sec
D67 0.00000000 sec
D68 0.00000000 sec
D69 0.00000000 sec
D70 0.00000000 sec
D71 0.00000000 sec
D72 0.00000000 sec
D73 0.00000000 sec
D74 0.00000000 sec
D75 0.00000000 sec
D76 0.00000000 sec
D77 0.00000000 sec
D78 0.00000000 sec
D79 0.00000000 sec
D80 0.00000000 sec
D81 0.00000000 sec
D82 0.00000000 sec
D83 0.00000000 sec
D84 0.00000000 sec
D85 0.00000000 sec
D86 0.00000000 sec
D87 0.00000000 sec
D88 0.00000000 sec
D89 0.00000000 sec
D90 0.00000000 sec
D91 0.00000000 sec
D92 0.00000000 sec
D93 0.00000000 sec
D94 0.00000000 sec
D95 0.00000000 sec
D96 0.00000000 sec
D97 0.00000000 sec
D98 0.00000000 sec
D99 0.00000000 sec
D100 0.00000000 sec

***** CHANNEL f1 *****

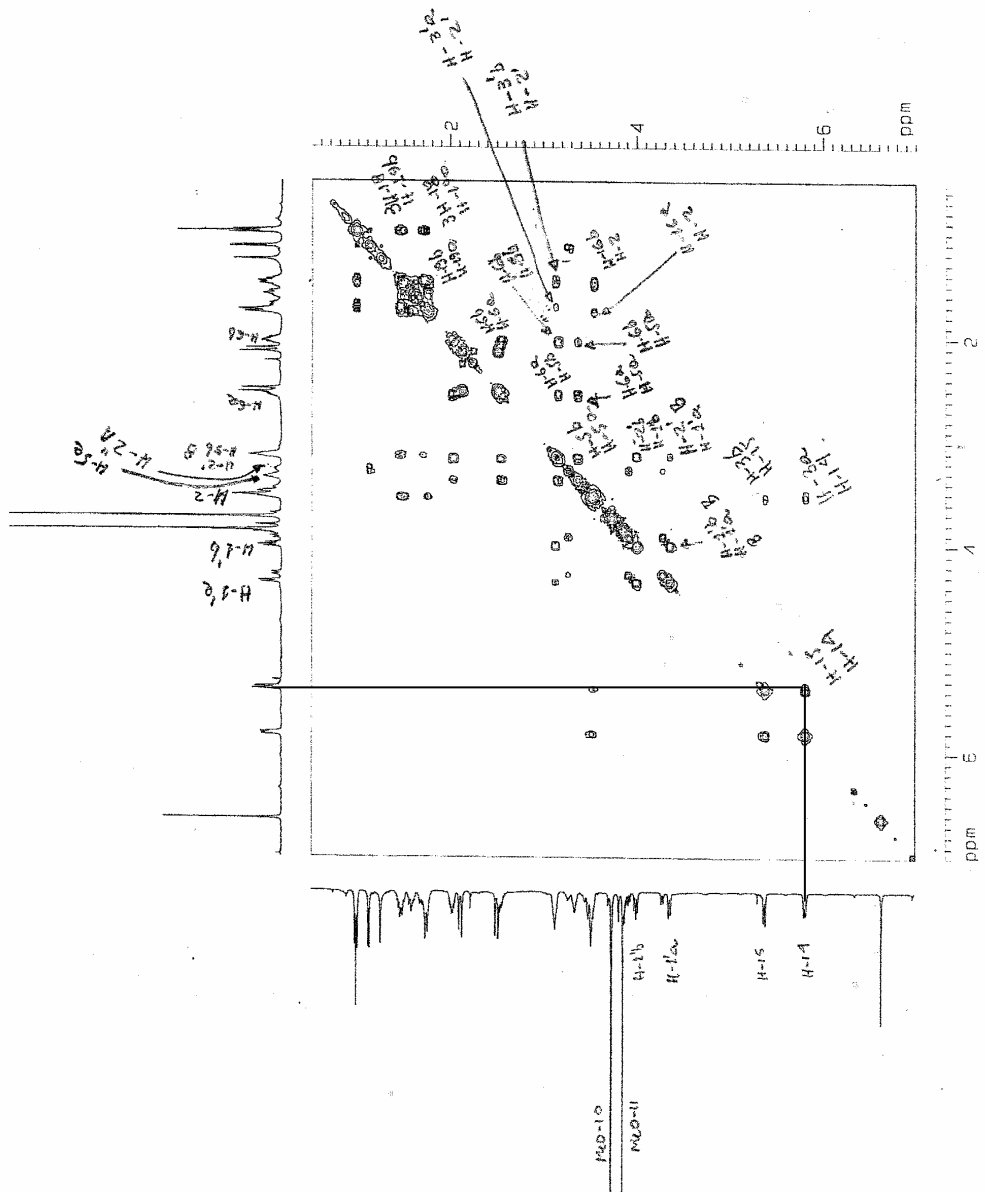
NUC1 1H
P1 10.00 usec
PL1 0.00 dB
SFO1 500.000000 MHz
***** CHANNEL f2 *****
SFO2 500.000000 MHz
SFO3 500.000000 MHz
SFO4 500.000000 MHz
SFO5 500.000000 MHz
SFO6 500.000000 MHz
SFO7 500.000000 MHz
SFO8 500.000000 MHz
SFO9 500.000000 MHz
SFO10 500.000000 MHz
SFO11 500.000000 MHz
SFO12 500.000000 MHz
SFO13 500.000000 MHz
SFO14 500.000000 MHz
SFO15 500.000000 MHz
SFO16 500.000000 MHz
SFO17 500.000000 MHz
SFO18 500.000000 MHz
SFO19 500.000000 MHz
SFO20 500.000000 MHz
SFO21 500.000000 MHz
SFO22 500.000000 MHz
SFO23 500.000000 MHz
SFO24 500.000000 MHz
SFO25 500.000000 MHz
SFO26 500.000000 MHz
SFO27 500.000000 MHz
SFO28 500.000000 MHz
SFO29 500.000000 MHz
SFO30 500.000000 MHz
SFO31 500.000000 MHz
SFO32 500.000000 MHz
SFO33 500.000000 MHz
SFO34 500.000000 MHz
SFO35 500.000000 MHz
SFO36 500.000000 MHz
SFO37 500.000000 MHz
SFO38 500.000000 MHz
SFO39 500.000000 MHz
SFO40 500.000000 MHz
SFO41 500.000000 MHz
SFO42 500.000000 MHz
SFO43 500.000000 MHz
SFO44 500.000000 MHz
SFO45 500.000000 MHz
SFO46 500.000000 MHz
SFO47 500.000000 MHz
SFO48 500.000000 MHz
SFO49 500.000000 MHz
SFO50 500.000000 MHz
SFO51 500.000000 MHz
SFO52 500.000000 MHz
SFO53 500.000000 MHz
SFO54 500.000000 MHz
SFO55 500.000000 MHz
SFO56 500.000000 MHz
SFO57 500.000000 MHz
SFO58 500.000000 MHz
SFO59 500.000000 MHz
SFO60 500.000000 MHz
SFO61 500.000000 MHz
SFO62 500.000000 MHz
SFO63 500.000000 MHz
SFO64 500.000000 MHz
SFO65 500.000000 MHz
SFO66 500.000000 MHz
SFO67 500.000000 MHz
SFO68 500.000000 MHz
SFO69 500.000000 MHz
SFO70 500.000000 MHz
SFO71 500.000000 MHz
SFO72 500.000000 MHz
SFO73 500.000000 MHz
SFO74 500.000000 MHz
SFO75 500.000000 MHz
SFO76 500.000000 MHz
SFO77 500.000000 MHz
SFO78 500.000000 MHz
SFO79 500.000000 MHz
SFO80 500.000000 MHz
SFO81 500.000000 MHz
SFO82 500.000000 MHz
SFO83 500.000000 MHz
SFO84 500.000000 MHz
SFO85 500.000000 MHz
SFO86 500.000000 MHz
SFO87 500.000000 MHz
SFO88 500.000000 MHz
SFO89 500.000000 MHz
SFO90 500.000000 MHz
SFO91 500.000000 MHz
SFO92 500.000000 MHz
SFO93 500.000000 MHz
SFO94 500.000000 MHz
SFO95 500.000000 MHz
SFO96 500.000000 MHz
SFO97 500.000000 MHz
SFO98 500.000000 MHz
SFO99 500.000000 MHz
SFO100 500.000000 MHz

F1 - Acquisition Parameters

NUC1 1H
P1 10.00 usec
PL1 0.00 dB
SFO1 500.000000 MHz
SFO2 500.000000 MHz
SFO3 500.000000 MHz
SFO4 500.000000 MHz
SFO5 500.000000 MHz
SFO6 500.000000 MHz
SFO7 500.000000 MHz
SFO8 500.000000 MHz
SFO9 500.000000 MHz
SFO10 500.000000 MHz
SFO11 500.000000 MHz
SFO12 500.000000 MHz
SFO13 500.000000 MHz
SFO14 500.000000 MHz
SFO15 500.000000 MHz
SFO16 500.000000 MHz
SFO17 500.000000 MHz
SFO18 500.000000 MHz
SFO19 500.000000 MHz
SFO20 500.000000 MHz
SFO21 500.000000 MHz
SFO22 500.000000 MHz
SFO23 500.000000 MHz
SFO24 500.000000 MHz
SFO25 500.000000 MHz
SFO26 500.000000 MHz
SFO27 500.000000 MHz
SFO28 500.000000 MHz
SFO29 500.000000 MHz
SFO30 500.000000 MHz
SFO31 500.000000 MHz
SFO32 500.000000 MHz
SFO33 500.000000 MHz
SFO34 500.000000 MHz
SFO35 500.000000 MHz
SFO36 500.000000 MHz
SFO37 500.000000 MHz
SFO38 500.000000 MHz
SFO39 500.000000 MHz
SFO40 500.000000 MHz
SFO41 500.000000 MHz
SFO42 500.000000 MHz
SFO43 500.000000 MHz
SFO44 500.000000 MHz
SFO45 500.000000 MHz
SFO46 500.000000 MHz
SFO47 500.000000 MHz
SFO48 500.000000 MHz
SFO49 500.000000 MHz
SFO50 500.000000 MHz
SFO51 500.000000 MHz
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SFO53 500.000000 MHz
SFO54 500.000000 MHz
SFO55 500.000000 MHz
SFO56 500.000000 MHz
SFO57 500.000000 MHz
SFO58 500.000000 MHz
SFO59 500.000000 MHz
SFO60 500.000000 MHz
SFO61 500.000000 MHz
SFO62 500.000000 MHz
SFO63 500.000000 MHz
SFO64 500.000000 MHz
SFO65 500.000000 MHz
SFO66 500.000000 MHz
SFO67 500.000000 MHz
SFO68 500.000000 MHz
SFO69 500.000000 MHz
SFO70 500.000000 MHz
SFO71 500.000000 MHz
SFO72 500.000000 MHz
SFO73 500.000000 MHz
SFO74 500.000000 MHz
SFO75 500.000000 MHz
SFO76 500.000000 MHz
SFO77 500.000000 MHz
SFO78 500.000000 MHz
SFO79 500.000000 MHz
SFO80 500.000000 MHz
SFO81 500.000000 MHz
SFO82 500.000000 MHz
SFO83 500.000000 MHz
SFO84 500.000000 MHz
SFO85 500.000000 MHz
SFO86 500.000000 MHz
SFO87 500.000000 MHz
SFO88 500.000000 MHz
SFO89 500.000000 MHz
SFO90 500.000000 MHz
SFO91 500.000000 MHz
SFO92 500.000000 MHz
SFO93 500.000000 MHz
SFO94 500.000000 MHz
SFO95 500.000000 MHz
SFO96 500.000000 MHz
SFO97 500.000000 MHz
SFO98 500.000000 MHz
SFO99 500.000000 MHz
SFO100 500.000000 MHz

F2 - Processing Parameters

SI 1024
SF 500.000000 MHz
WDW EM
SSB 0
LB 0.00 Hz
GB 0.00 Hz
PC 0.30
F1 - Processing Parameters
SI 1024
SF 500.000000 MHz
WDW EM
SSB 0
LB 0.00 Hz
GB 0.00 Hz
PC 0.30
20 MR data parameters
CA 10.00 cm
CX 10.00 cm
CY 10.00 cm
F2 3500.00 Hz
FR1 0.500 dBp
FR2 0.500 dBp
FR3 0.500 dBp
FR4 0.500 dBp
FR5 0.500 dBp
FR6 0.500 dBp
FR7 0.500 dBp
FR8 0.500 dBp
FR9 0.500 dBp
FR10 0.500 dBp
FR11 0.500 dBp
FR12 0.500 dBp
FR13 0.500 dBp
FR14 0.500 dBp
FR15 0.500 dBp
FR16 0.500 dBp
FR17 0.500 dBp
FR18 0.500 dBp
FR19 0.500 dBp
FR20 0.500 dBp
FR21 0.500 dBp
FR22 0.500 dBp
FR23 0.500 dBp
FR24 0.500 dBp
FR25 0.500 dBp
FR26 0.500 dBp
FR27 0.500 dBp
FR28 0.500 dBp
FR29 0.500 dBp
FR30 0.500 dBp
FR31 0.500 dBp
FR32 0.500 dBp
FR33 0.500 dBp
FR34 0.500 dBp
FR35 0.500 dBp
FR36 0.500 dBp
FR37 0.500 dBp
FR38 0.500 dBp
FR39 0.500 dBp
FR40 0.500 dBp
FR41 0.500 dBp
FR42 0.500 dBp
FR43 0.500 dBp
FR44 0.500 dBp
FR45 0.500 dBp
FR46 0.500 dBp
FR47 0.500 dBp
FR48 0.500 dBp
FR49 0.500 dBp
FR50 0.500 dBp
FR51 0.500 dBp
FR52 0.500 dBp
FR53 0.500 dBp
FR54 0.500 dBp
FR55 0.500 dBp
FR56 0.500 dBp
FR57 0.500 dBp
FR58 0.500 dBp
FR59 0.500 dBp
FR60 0.500 dBp
FR61 0.500 dBp
FR62 0.500 dBp
FR63 0.500 dBp
FR64 0.500 dBp
FR65 0.500 dBp
FR66 0.500 dBp
FR67 0.500 dBp
FR68 0.500 dBp
FR69 0.500 dBp
FR70 0.500 dBp
FR71 0.500 dBp
FR72 0.500 dBp
FR73 0.500 dBp
FR74 0.500 dBp
FR75 0.500 dBp
FR76 0.500 dBp
FR77 0.500 dBp
FR78 0.500 dBp
FR79 0.500 dBp
FR80 0.500 dBp
FR81 0.500 dBp
FR82 0.500 dBp
FR83 0.500 dBp
FR84 0.500 dBp
FR85 0.500 dBp
FR86 0.500 dBp
FR87 0.500 dBp
FR88 0.500 dBp
FR89 0.500 dBp
FR90 0.500 dBp
FR91 0.500 dBp
FR92 0.500 dBp
FR93 0.500 dBp
FR94 0.500 dBp
FR95 0.500 dBp
FR96 0.500 dBp
FR97 0.500 dBp
FR98 0.500 dBp
FR99 0.500 dBp
FR100 0.500 dBp



Espectro 88. Mapa de correlação homonuclear ¹H-¹H COSY em CDCl₃ da mistura dos alcalóides spruceanumina A e spruceanumina B.

```

Current Data Parameters
NAME      7546P1
EXPNO    4
PROCNO   1

F2 - Acquisition Parameters
DATE_    20080505
TIME     20.55
INSTRUM  spect
PROBHD   5 mm NulLinec1
PULPROG  zgpg30
TD        65536
SOLVENT  CDCl3
NS       4
DS       16
SHH      5000.000 Hz
FIDRES   2.441405 Hz
AQ        0.2819756 sec
RG        1012.6
DM        100.000 USEC
TE        300.2
TEPROG   0.00000000 sec
D1        1.00000000 sec
D11       0.00000000 sec
D12       0.00000000 sec
D15       0.00000000 sec
TND       0.00000000 sec
ACQRES1   0.00000000 sec
ACQRES2   1.00000000 sec

***** CHANNEL f1 *****
NUC1      13C
P1        10.00 USEC
PL1       0.00 dB
SFO1      500.0000000 MHz

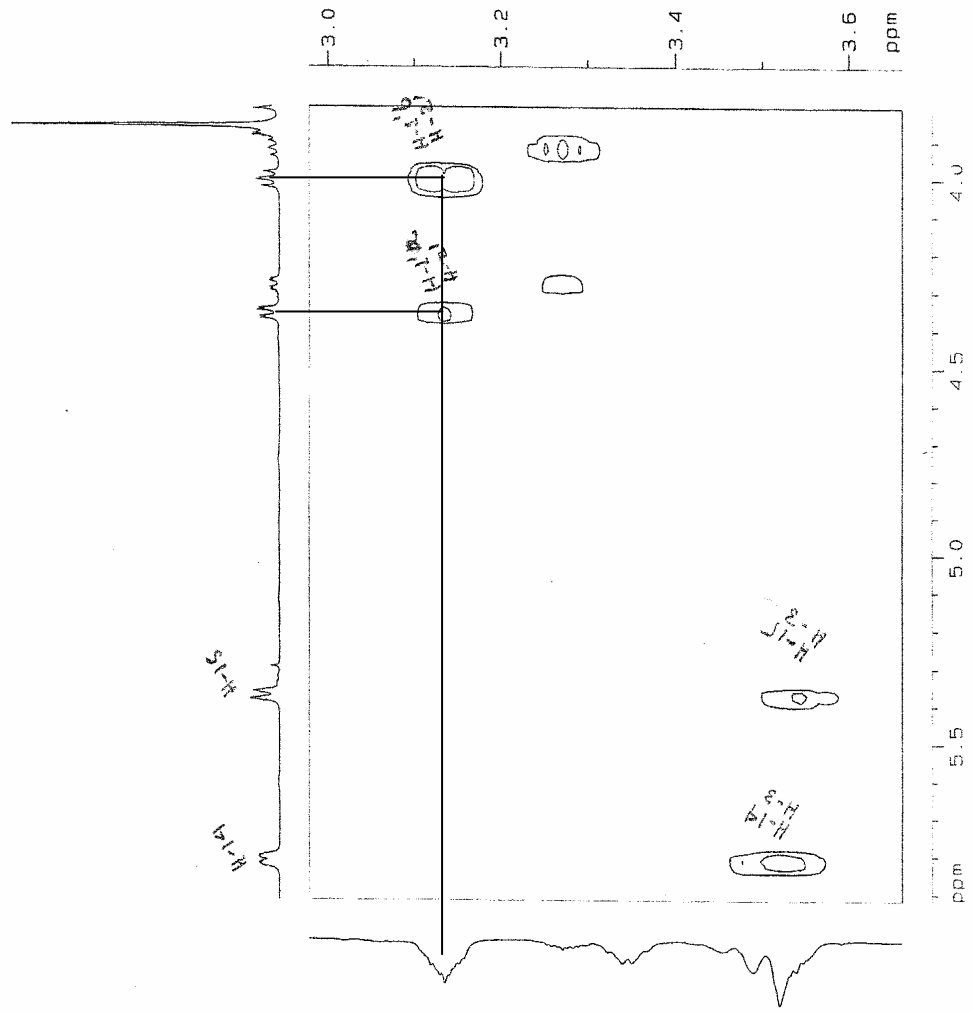
***** GRADIENT CHANNEL *****
GPMAX1    0.30 G
GPMAX2    0.00 G
GPMAX3    0.00 G
GFY2      0.00 G
GFY3      0.00 G
GFZ1      10.00 G
GFZ2      10.00 G
PZ1       100.00 USEC

F1 - Acquisition parameters
NUC1      13C
TD        128
SFO1      500.000 MHz
SF02      39.062500 MHz
AQ        0.2819756 sec
RG        1012.6
DM        100.00 USEC
TE        300.2
TEPROG   0.00000000 sec
D1        1.00000000 sec
D11       0.00000000 sec
D12       0.00000000 sec
D15       0.00000000 sec
TND       0.00000000 sec
ACQRES1   0.00000000 sec
ACQRES2   1.00000000 sec

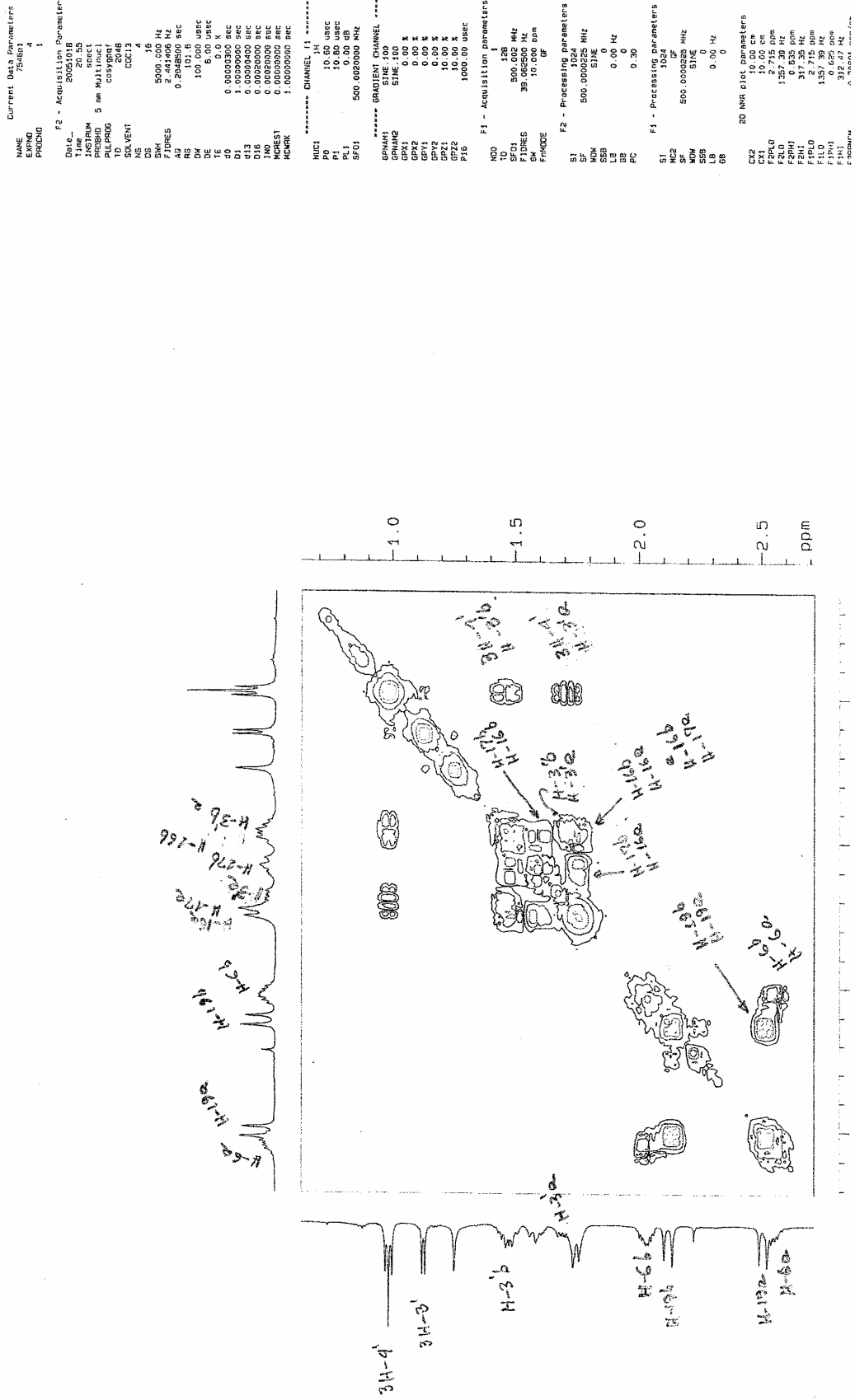
F2 - Processing parameters
SI        1024
SF        500.000225 MHz
WDW       SINC
SSB       0
LB        0.00 Hz
GB        0
PC        0.30

F1 - Processing parameters
SI        1024
SF        500.000225 MHz
WDW       SINC
SSB       0
LB        0.00 Hz
GB        0
PC        0.30

2D NMR plot parameters
CX1       10.00 cm
F2PL0     5.918 ppm
F2PL1     2.959 ppm
F2PL2     3.809 ppm
F2PL3     1904.27 Hz
F1PL0     163.68 ppm
F1PL1     163.68 ppm
F1PL2     2.978 ppm
F1PL3     1.489 ppm
F1RES     100.46836 MHz/cm
F1PRNCH   0.06836 MHz/cm
F1HZCM    1.7085 137/cm
    
```

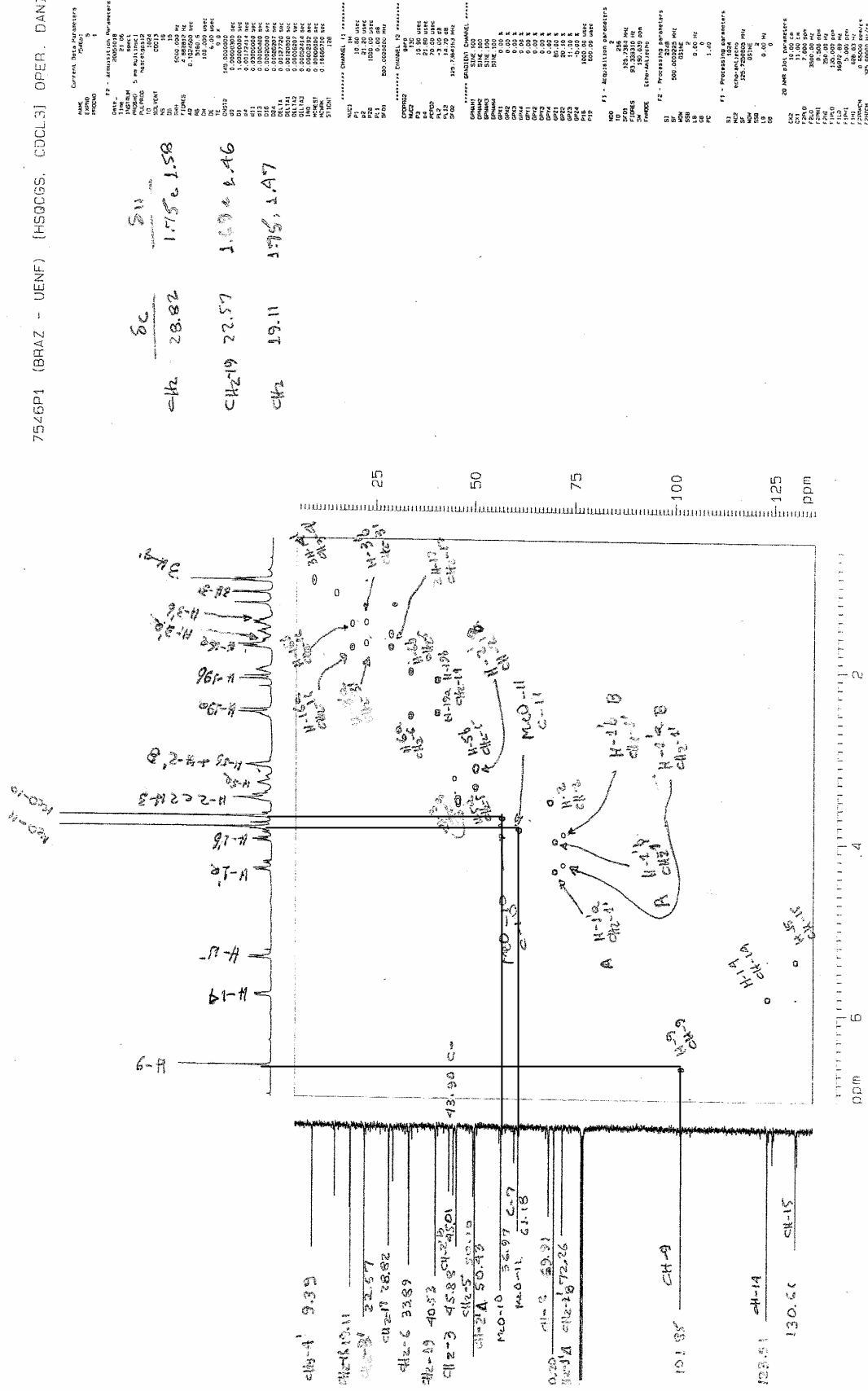


Espectro 89. Ampliação do mapa de correlação homonuclear ^1H - ^1H -COSY em CDCl_3 da mistura dos alcalóides spruceanumina A e spruceanumina B.



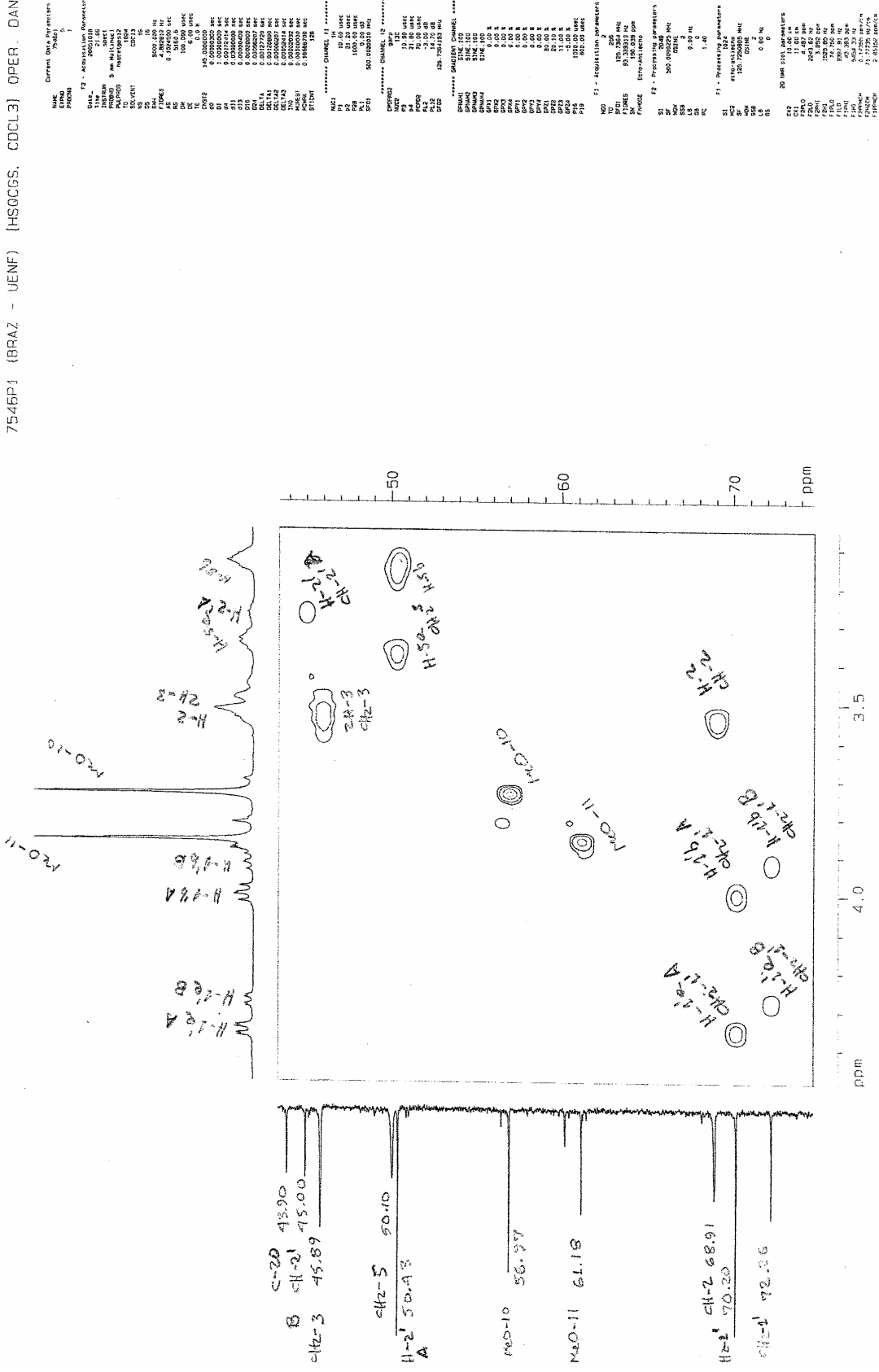
Espectro 91. Ampliação do mapa de correlação homonuclear ^1H - ^1H -COSY em CDCl_3 da mistura dos alcalóides spruceanumina A e spruceanumina B.

7546P1 (BRAZ - UENF) (HSQC65, CDCL3) OPER. DANIEL



Espectro 92. Mapa de correlação heteronuclear HSQC em CDCl₃ da mistura dos alcalóides spruceanumina A e spruceanumina B.

7546P1 (BRAZ - UENF) (HSQC65. CDCL3) OPER. DANIEL



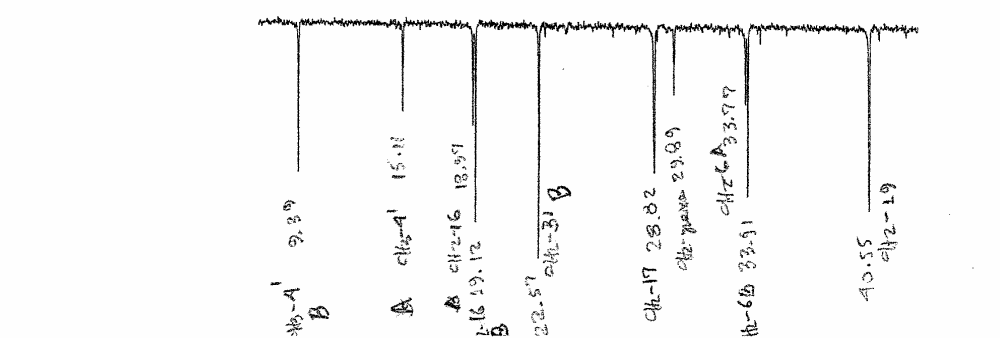
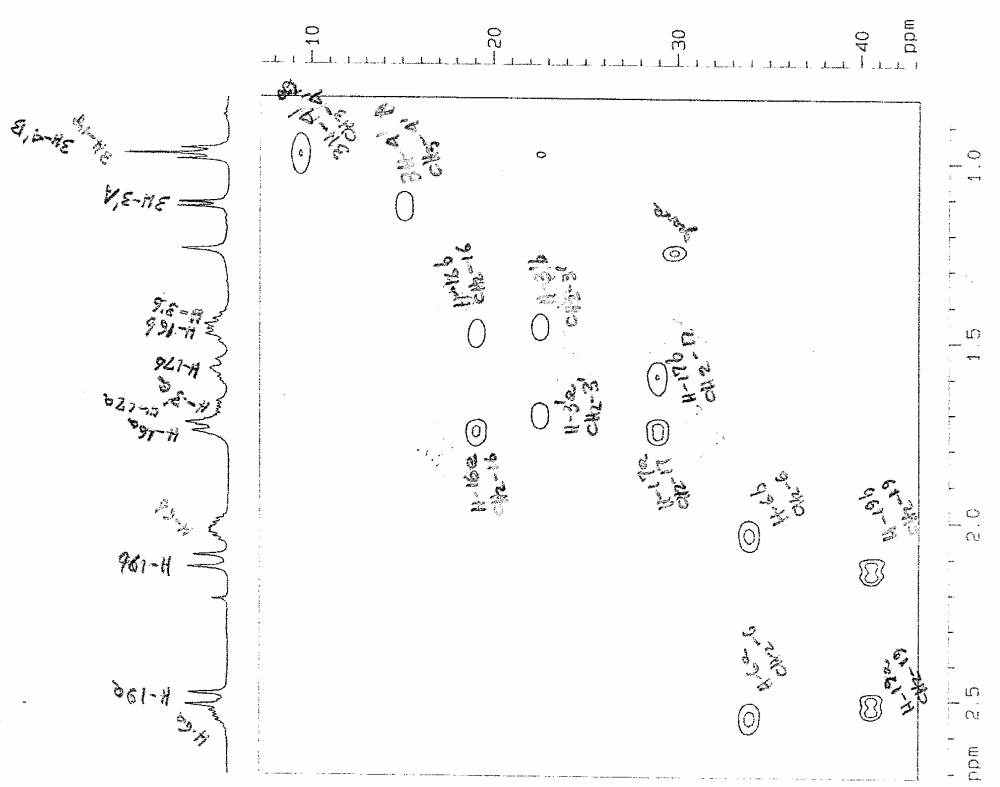
Espectro 93. Ampliação do mapa de correlação heteronuclear HSQC em CDCL₃ da mistura dos alcalóides spruceanumina A e spruceanumina B.

7546P1 (BRAZ - UENF) [H5QC65, C0C1.3] OPER. DANIEL

```

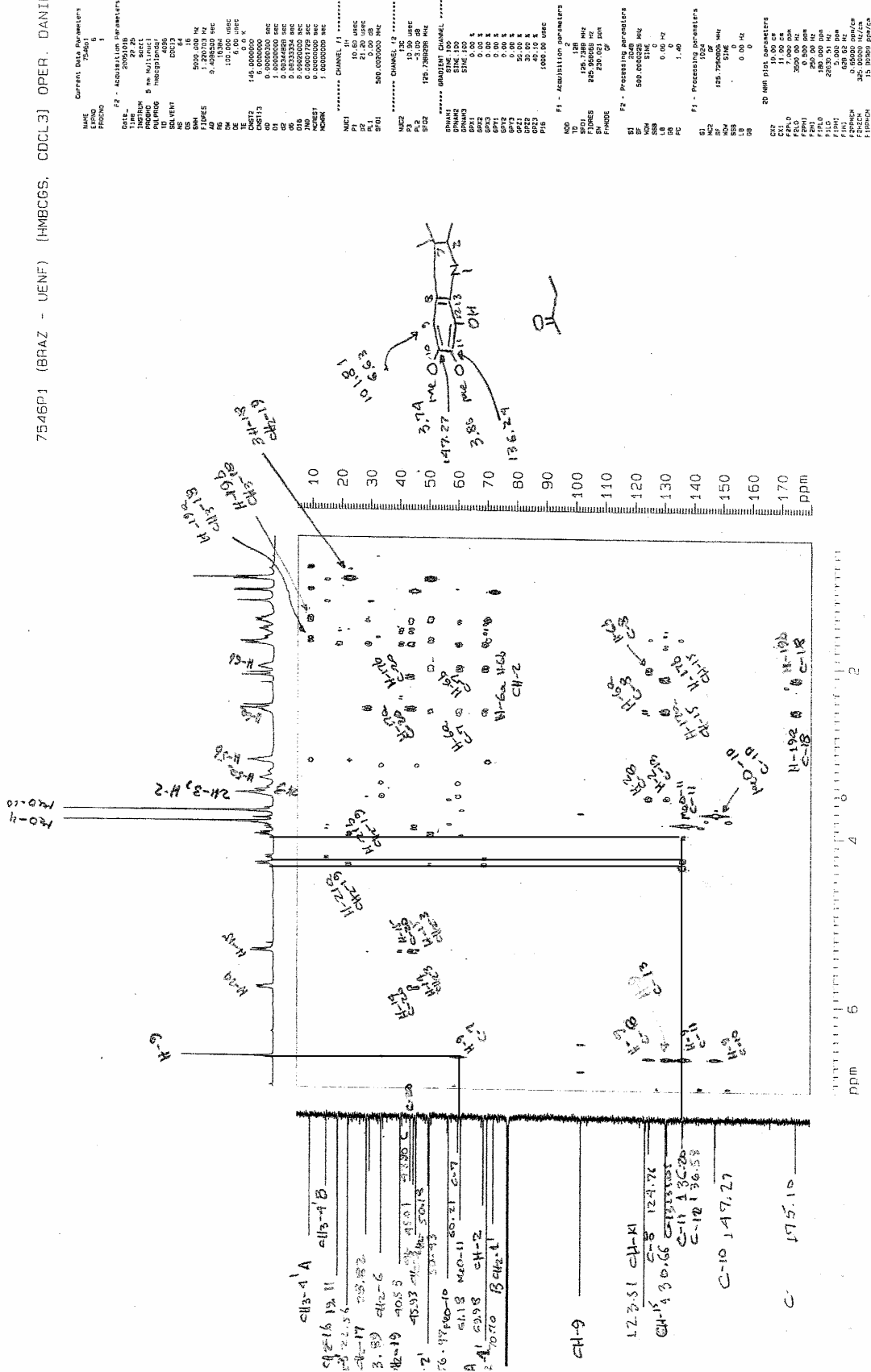
Current Data Parameters
NAME: 7546P1
EXPNO: 1
PROCNO: 1
DATE_1: 20070708
TIME: 14.50
INSTRUM: spect
PROBHD: 5 mm QNP 1H/13
PULPROG: zgpg30
TD: 65536
SFO: 500.136099
AQ: 0.100000
RG: 327.50
AQ2: 0.100000
RG2: 327.50
SI: 3275
SF2: 125.760318
AQ3: 0.100000
RG3: 327.50
SI2: 3275
SF3: 125.760318
AQ4: 0.100000
RG4: 327.50
SI3: 3275
SF4: 125.760318
AQ5: 0.100000
RG5: 327.50
SI4: 3275
SF5: 125.760318
AQ6: 0.100000
RG6: 327.50
SI5: 3275
SF6: 125.760318
AQ7: 0.100000
RG7: 327.50
SI6: 3275
SF7: 125.760318
AQ8: 0.100000
RG8: 327.50
SI7: 3275
SF8: 125.760318
AQ9: 0.100000
RG9: 327.50
SI8: 3275
SF9: 125.760318
AQ10: 0.100000
RG10: 327.50
SI9: 3275
SF10: 125.760318
AQ11: 0.100000
RG11: 327.50
SI10: 3275
SF11: 125.760318
AQ12: 0.100000
RG12: 327.50
SI11: 3275
SF12: 125.760318
AQ13: 0.100000
RG13: 327.50
SI12: 3275
SF13: 125.760318
AQ14: 0.100000
RG14: 327.50
SI13: 3275
SF14: 125.760318
AQ15: 0.100000
RG15: 327.50
SI14: 3275
SF15: 125.760318
AQ16: 0.100000
RG16: 327.50
SI15: 3275
SF16: 125.760318
AQ17: 0.100000
RG17: 327.50
SI16: 3275
SF17: 125.760318
AQ18: 0.100000
RG18: 327.50
SI17: 3275
SF18: 125.760318
AQ19: 0.100000
RG19: 327.50
SI18: 3275
SF19: 125.760318
AQ20: 0.100000
RG20: 327.50
SI19: 3275
SF20: 125.760318
AQ21: 0.100000
RG21: 327.50
SI20: 3275
SF21: 125.760318
AQ22: 0.100000
RG22: 327.50
SI21: 3275
SF22: 125.760318
AQ23: 0.100000
RG23: 327.50
SI22: 3275
SF23: 125.760318
AQ24: 0.100000
RG24: 327.50
SI23: 3275
SF24: 125.760318
AQ25: 0.100000
RG25: 327.50
SI24: 3275
SF25: 125.760318
AQ26: 0.100000
RG26: 327.50
SI25: 3275
SF26: 125.760318
AQ27: 0.100000
RG27: 327.50
SI26: 3275
SF27: 125.760318
AQ28: 0.100000
RG28: 327.50
SI27: 3275
SF28: 125.760318
AQ29: 0.100000
RG29: 327.50
SI28: 3275
SF29: 125.760318
AQ30: 0.100000
RG30: 327.50
SI29: 3275
SF30: 125.760318
AQ31: 0.100000
RG31: 327.50
SI30: 3275
SF31: 125.760318
AQ32: 0.100000
RG32: 327.50
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AQ36: 0.100000
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SI38: 3275
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AQ41: 0.100000
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SI40: 3275
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AQ42: 0.100000
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AQ43: 0.100000
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AQ44: 0.100000
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AQ45: 0.100000
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RG52: 327.50
SI51: 3275
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AQ53: 0.100000
RG53: 327.50
SI52: 3275
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SF73: 125.820637
AQ74: 0.100000
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SI73: 3275
SF74: 125.820637
AQ75: 0.100000
RG75: 327.50
SI74: 3275
SF75: 125.820637
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AQ77: 0.100000
RG77: 327.50
SI76: 3275
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RG80: 327.50
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SF80: 125.820637
AQ81: 0.100000
RG81: 327.50
SI80: 3275
SF81: 125.820637
AQ82: 0.100000
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SF84: 125.820637
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AQ88: 0.100000
RG88: 327.50
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AQ89: 0.100000
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SF89: 125.820637
AQ90: 0.100000
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SI89: 3275
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AQ91: 0.100000
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SI90: 3275
SF91: 125.820637
AQ92: 0.100000
RG92: 327.50
SI91: 3275
SF92: 125.820637
AQ93: 0.100000
RG93: 327.50
SI92: 3275
SF93: 125.820637
AQ94: 0.100000
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SI93: 3275
SF94: 125.820637
AQ95: 0.100000
RG95: 327.50
SI94: 3275
SF95: 125.820637
AQ96: 0.100000
RG96: 327.50
SI95: 3275
SF96: 125.820637
AQ97: 0.100000
RG97: 327.50
SI96: 3275
SF97: 125.820637
AQ98: 0.100000
RG98: 327.50
SI97: 3275
SF98: 125.820637
AQ99: 0.100000
RG99: 327.50
SI98: 3275
SF99: 125.820637
AQ100: 0.100000
RG100: 327.50
SI99: 3275
SF100: 125.820637

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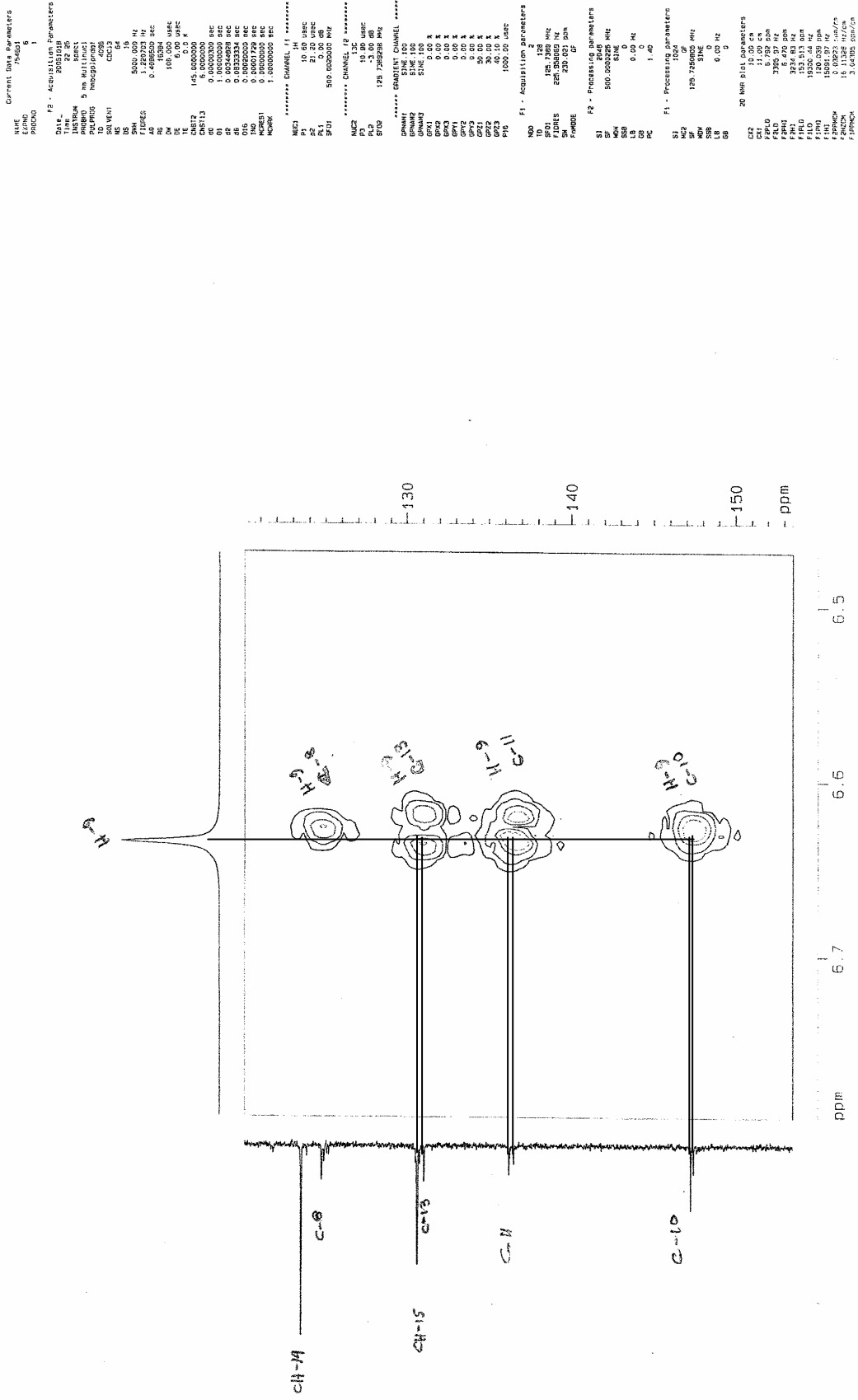


Espectro 94.Ampliação do mapa de correlação heteronuclear HSQC em CDCl₃ da mistura dos alcalóides spruceanumina A e spruceanumina B.

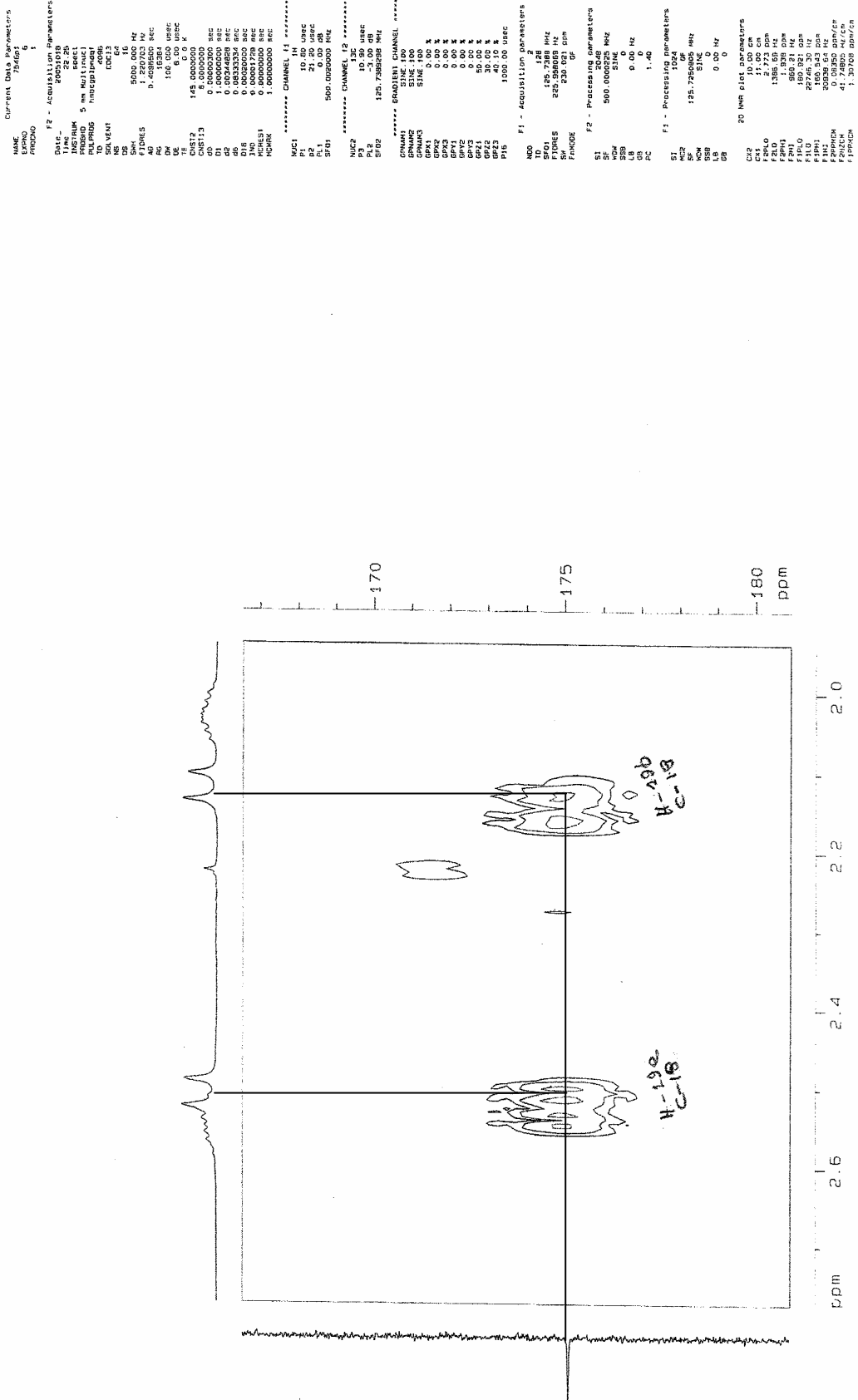
7546P1 (BRAZ - UENF) (HMBC65. CDCL3) OPER. DANIEL



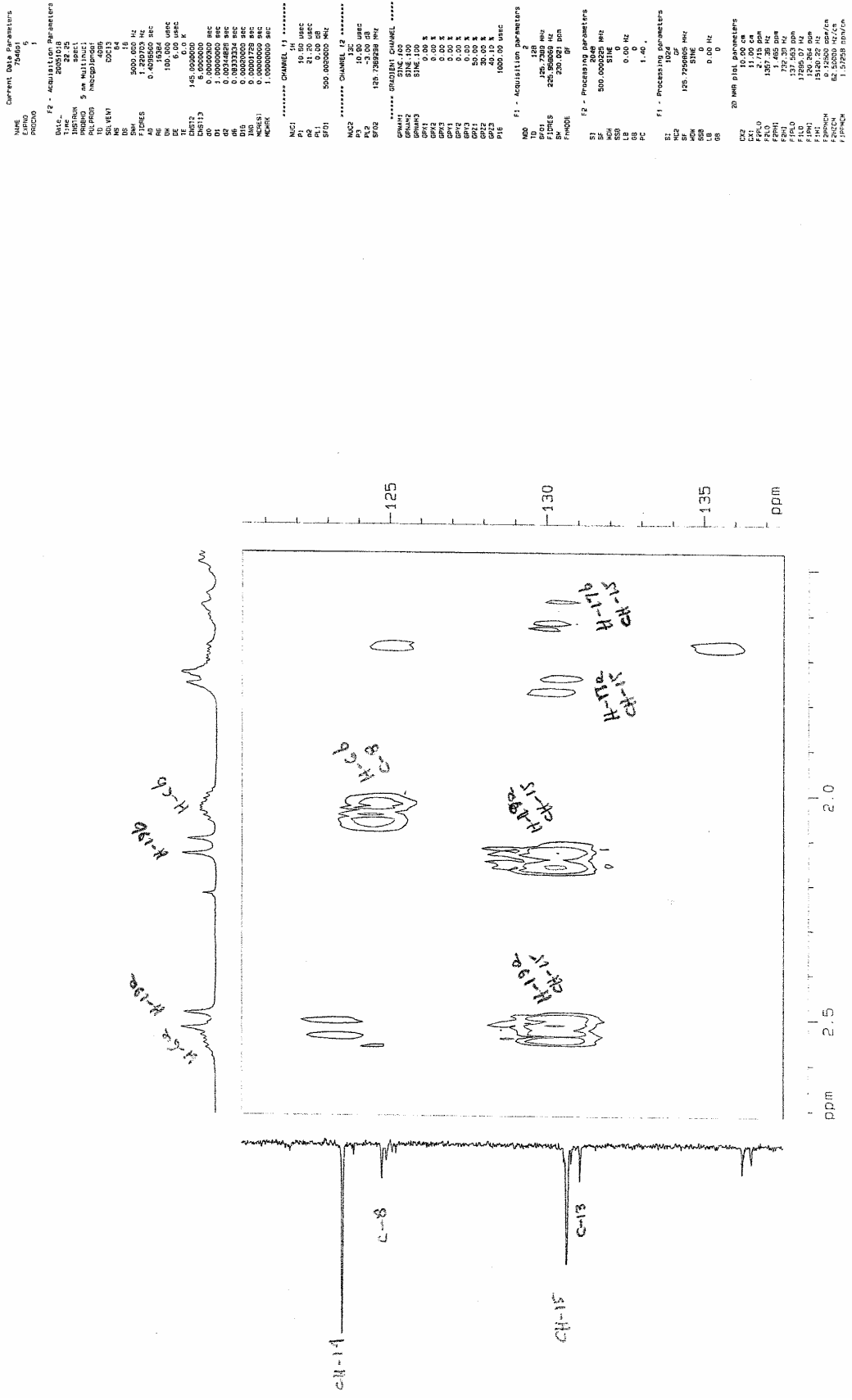
Espectro 95. Mapa de correlação heteronuclear HMBC em CDCl₃ da mistura dos alcalóides spruceanumina A e spruceanumina B.



Espectro 96. Ampliação do mapa de correlação heteronuclear HMBC em CDCl₃ da mistura dos alcalóides spruceanumina A e spruceanumina B.

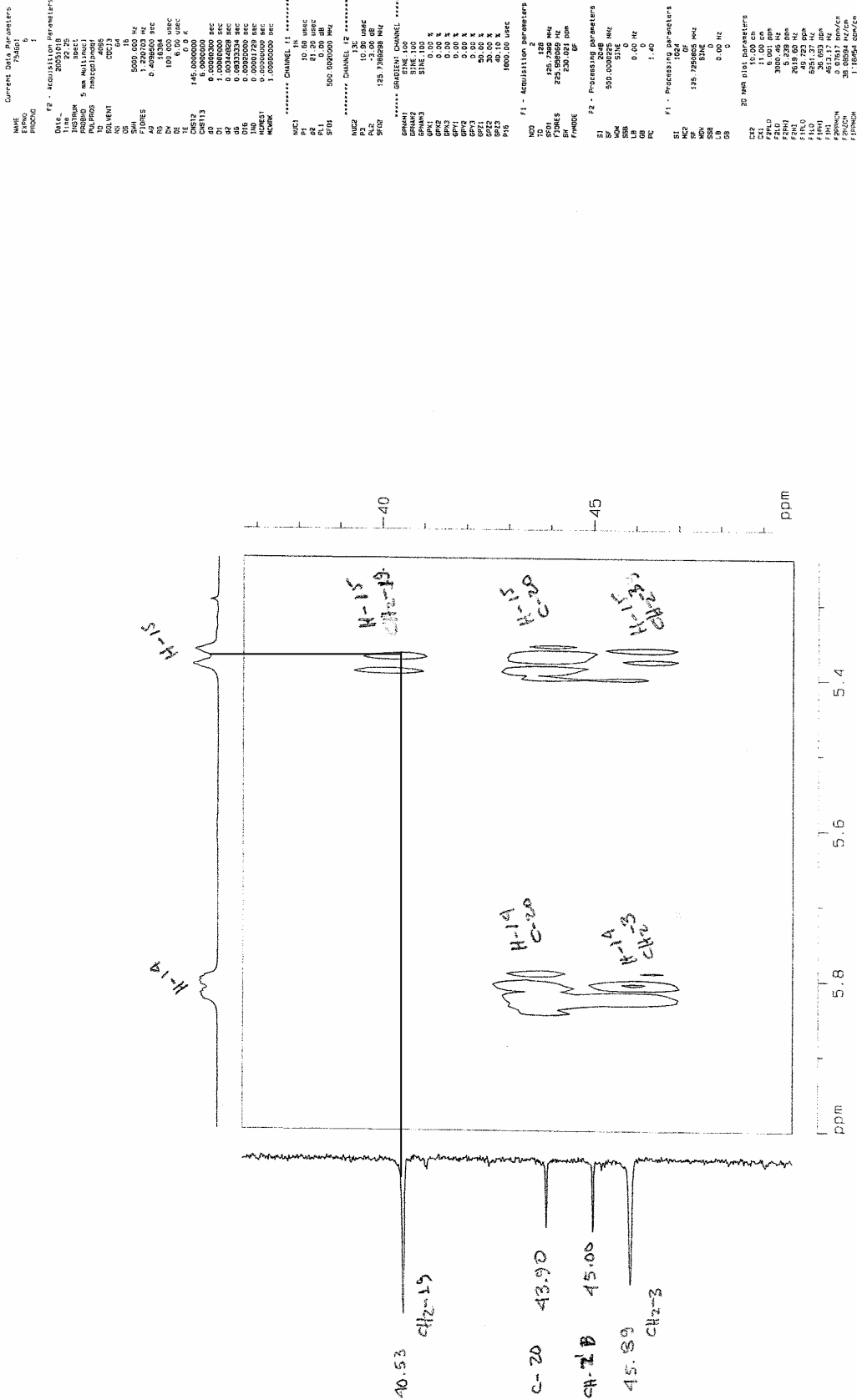


Espectro 98. Ampliação do mapa de correlação heteronuclear HMBC em CDCl₃ da mistura dos alcalóides spruceanumina A e spruceanumina B.

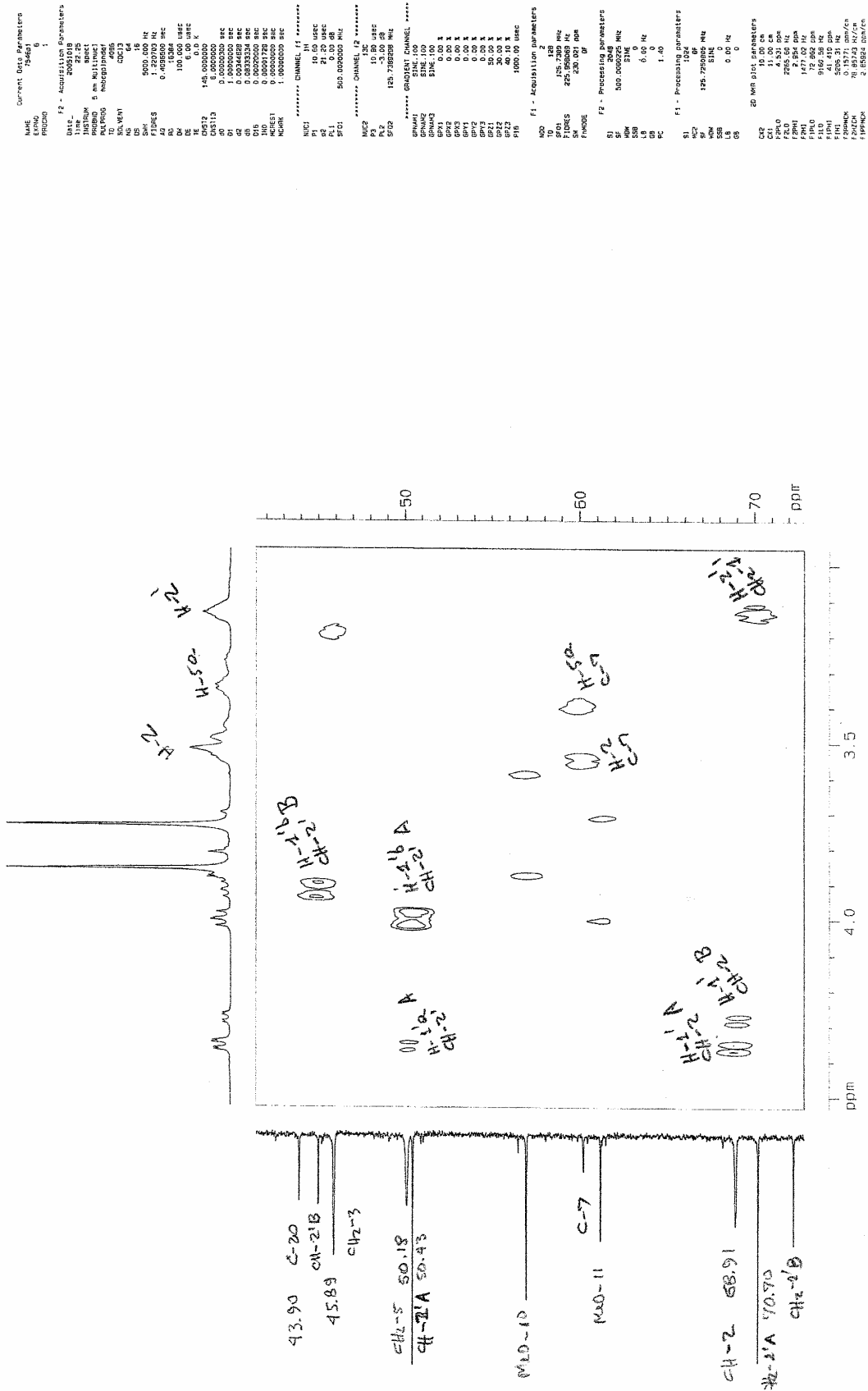


Espectro 99. Ampliação do mapa de correlação heteronuclear HMB em CDCl₃ da mistura dos alcalóides spruceanumina A e spruceanumina B.

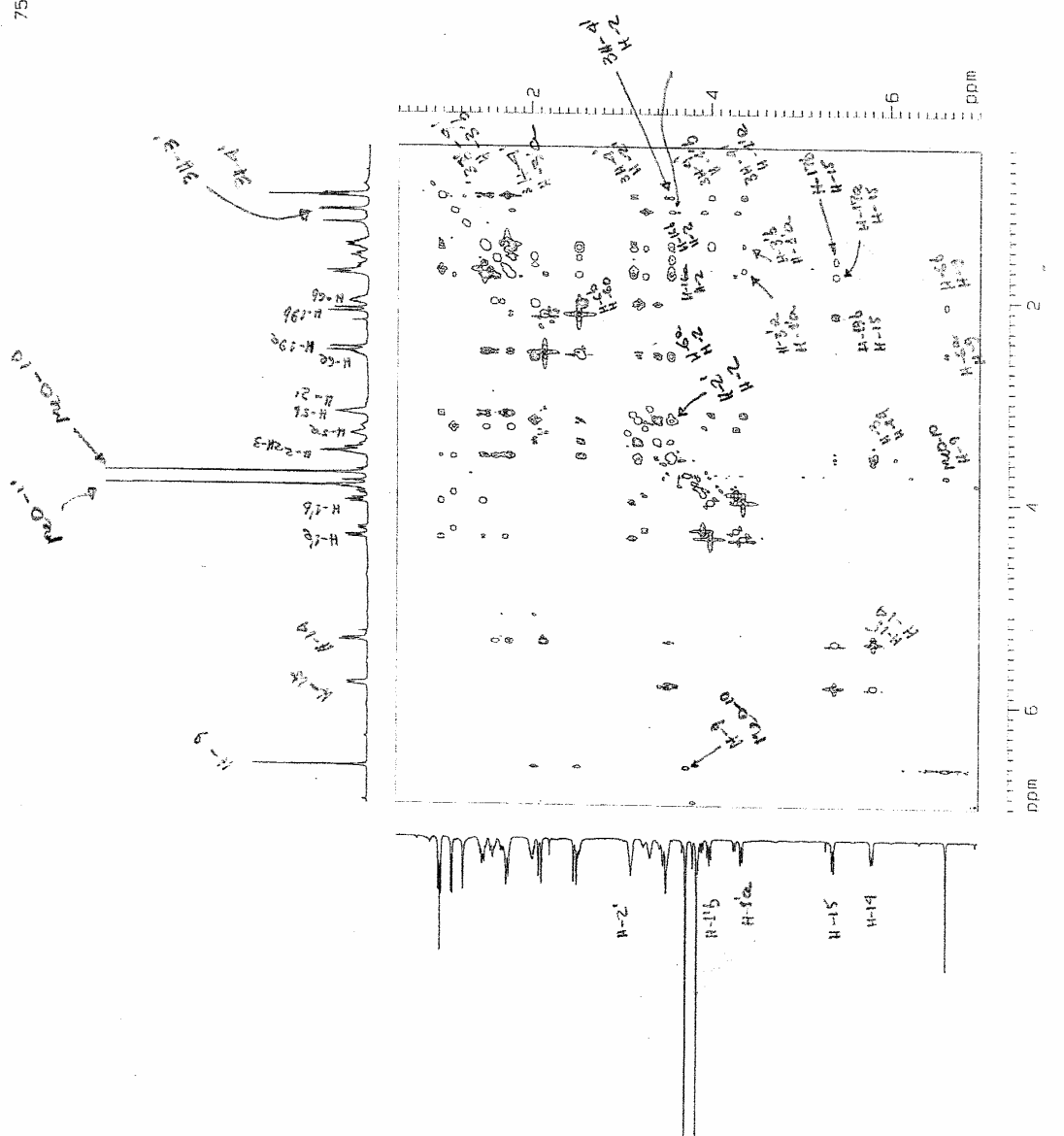
7546P1 (BRAZ UENF) [HMBCG5, CDCL3] OPER. DANIEL



Espectro 100. Ampliação do mapa de correlação heteronuclear HMBC em CDCl₃ da mistura dos alcalóides sorceanumina A e sorceanumina B.



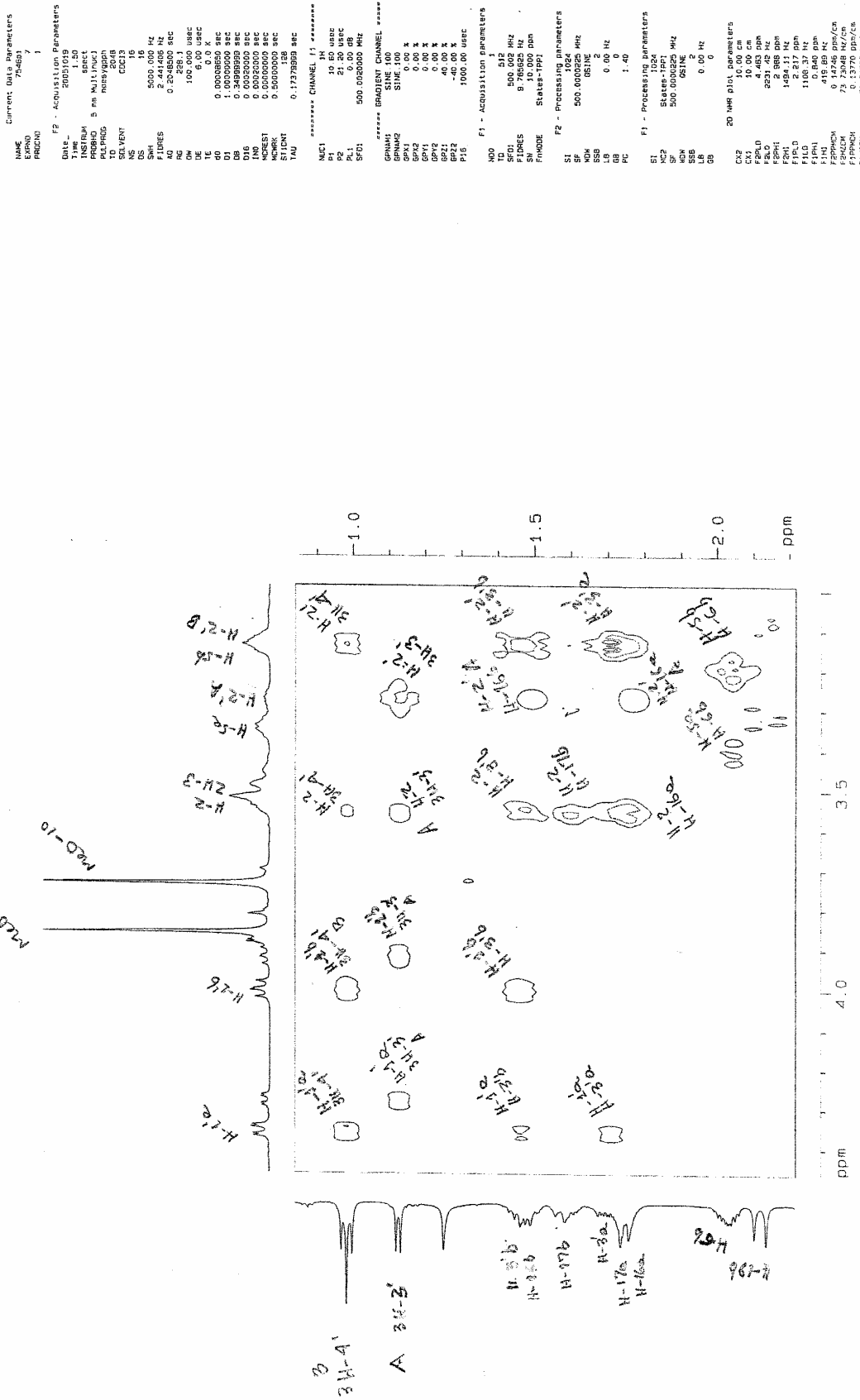
Espectro 101. Ampliação do mapa de correlação heteronuclear HMBC em CDCL3 da mistura dos alcalóides spruceanumina A e spruceanumina B.



Current Data Parameters
 7546P1 1
 F2 - Acquisition Parameters
 Date_ 20051019
 Time 1:50
 PROBHD 5 mm Nu1 (mex)
 PULPROG zgpg30
 SOLVENT CDCl3
 NS 19
 DS 4
 F2 - Processing parameters
 SI 1024
 SF 500.000263 MHz
 SFO 500.000263 MHz
 SSF 0.00 Hz
 LB 0.00 Hz
 GB 0
 2D NMR plot parameters
 CX2 10.00 cm
 CY2 10.00 cm
 FZ2 0
 F2A3 3603.91 Hz
 F2A1 0.456 ppm
 F1A0 7.008 ppm
 F1A1 3503.91 Hz
 F1A2 0.456 ppm
 F1A3 7.008 ppm
 F1A4 0.456 ppm
 F1A5 7.008 ppm
 F1A6 0.456 ppm
 F1A7 7.008 ppm
 F1A8 0.456 ppm
 F1A9 7.008 ppm
 F1A10 0.456 ppm
 F1A11 7.008 ppm
 F1A12 0.456 ppm
 F1A13 7.008 ppm
 F1A14 0.456 ppm
 F1A15 7.008 ppm
 F1A16 0.456 ppm
 F1A17 7.008 ppm
 F1A18 0.456 ppm
 F1A19 7.008 ppm
 F1A20 0.456 ppm
 F1A21 7.008 ppm
 F1A22 0.456 ppm
 F1A23 7.008 ppm
 F1A24 0.456 ppm
 F1A25 7.008 ppm
 F1A26 0.456 ppm
 F1A27 7.008 ppm
 F1A28 0.456 ppm
 F1A29 7.008 ppm
 F1A30 0.456 ppm
 F1A31 7.008 ppm
 F1A32 0.456 ppm
 F1A33 7.008 ppm
 F1A34 0.456 ppm
 F1A35 7.008 ppm
 F1A36 0.456 ppm
 F1A37 7.008 ppm
 F1A38 0.456 ppm
 F1A39 7.008 ppm
 F1A40 0.456 ppm
 F1A41 7.008 ppm
 F1A42 0.456 ppm
 F1A43 7.008 ppm
 F1A44 0.456 ppm
 F1A45 7.008 ppm
 F1A46 0.456 ppm
 F1A47 7.008 ppm
 F1A48 0.456 ppm
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 F1A53 7.008 ppm
 F1A54 0.456 ppm
 F1A55 7.008 ppm
 F1A56 0.456 ppm
 F1A57 7.008 ppm
 F1A58 0.456 ppm
 F1A59 7.008 ppm
 F1A60 0.456 ppm
 F1A61 7.008 ppm
 F1A62 0.456 ppm
 F1A63 7.008 ppm
 F1A64 0.456 ppm
 F1A65 7.008 ppm
 F1A66 0.456 ppm
 F1A67 7.008 ppm
 F1A68 0.456 ppm
 F1A69 7.008 ppm
 F1A70 0.456 ppm
 F1A71 7.008 ppm
 F1A72 0.456 ppm
 F1A73 7.008 ppm
 F1A74 0.456 ppm
 F1A75 7.008 ppm
 F1A76 0.456 ppm
 F1A77 7.008 ppm
 F1A78 0.456 ppm
 F1A79 7.008 ppm
 F1A80 0.456 ppm
 F1A81 7.008 ppm
 F1A82 0.456 ppm
 F1A83 7.008 ppm
 F1A84 0.456 ppm
 F1A85 7.008 ppm
 F1A86 0.456 ppm
 F1A87 7.008 ppm
 F1A88 0.456 ppm
 F1A89 7.008 ppm
 F1A90 0.456 ppm
 F1A91 7.008 ppm
 F1A92 0.456 ppm
 F1A93 7.008 ppm
 F1A94 0.456 ppm
 F1A95 7.008 ppm
 F1A96 0.456 ppm
 F1A97 7.008 ppm
 F1A98 0.456 ppm
 F1A99 7.008 ppm
 F1A100 0.456 ppm

Espectro 105. Mapa de correlação homonuclear ¹H-¹H-NOESY em CDCl₃ da mistura dos alcalóides spruceanumina A e spruceanumina B.

7546P1 (BRAZ - UENF) (NOESY, CDCL3) OPER. DANIEL



Espectro 107. Ampliação do mapa de correlação homonuclear ¹H-¹H-NOESY em CDCl₃ da mistura dos alcalóides spruceanumina A e spruceanumina B.

7546P1 (BRAZ - UENF) (NOESY, CDCL3) OPER. DANIEL

Current Data Parameters
 ADRES 7
 PROCNO 1

F2 - Acquisition Parameters

Date_ 20060109
 Time 1:50
 PROGAM 5 mm MSL1001
 PULPROG mzgpgph
 SOLVENT CDCl3
 NS 16
 DS 16
 SWH 5000.000 Hz
 FIDRES 2.444065 Hz
 AQ 0.204560 sec
 SFO 100.620 MHz
 DE 5.00 usec
 TE 300.2 K
 DI 1.0000000 sec
 DB 0.2488800 sec
 UG 0.0000000 sec
 UG2 0.0000000 sec
 UG3 0.0000000 sec
 ACQST 0.0000000 sec
 ACQST 0.0000000 sec
 ACQST 0.0000000 sec
 ACQST 0.0000000 sec
 TAU 0.1737888 sec

***** CHANNEL 1 *****

NUC1 10 50 MHz
 P1 10.50 usec
 P2 21.20 usec
 SFO1 500.0020000 MHz

***** GRABF2 CHANNEL *****

OPNAM1 SINE 100
 GRZ 0.00 x
 GP1 0.00 x
 GP2 0.00 x
 GP3 -20.00 x
 P15 1000.00 usec

F1 - Acquisition Parameters

NUC 1
 TD 512
 SFO 500.130 MHz
 FIDRES 9.742825 Hz
 SN 10.000 dpm
 FMODE States-T1P1

F2 - Processing Parameters

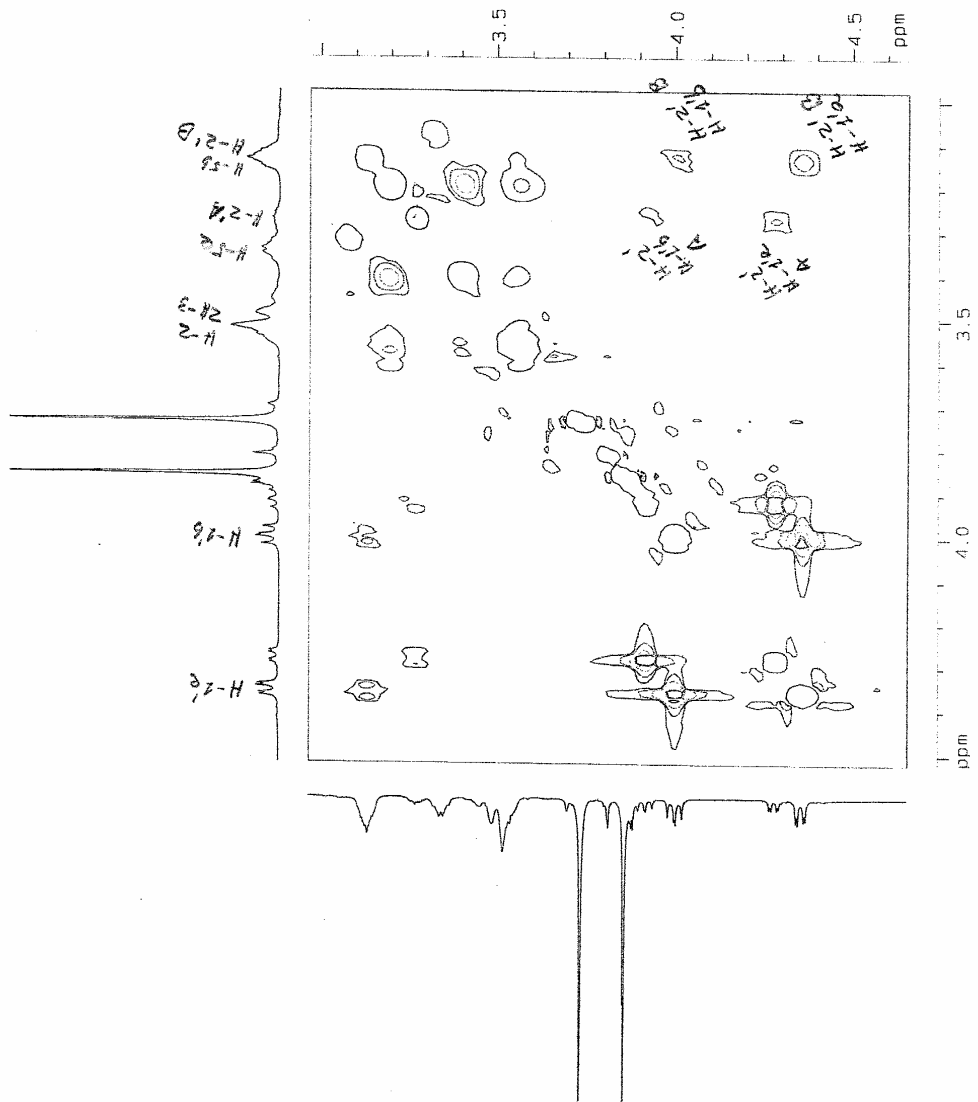
SI 500.000000 MHz
 SF 500.130000 MHz
 LB 0.00 Hz
 GB 0
 PC 1.40

F1 - Processing Parameters

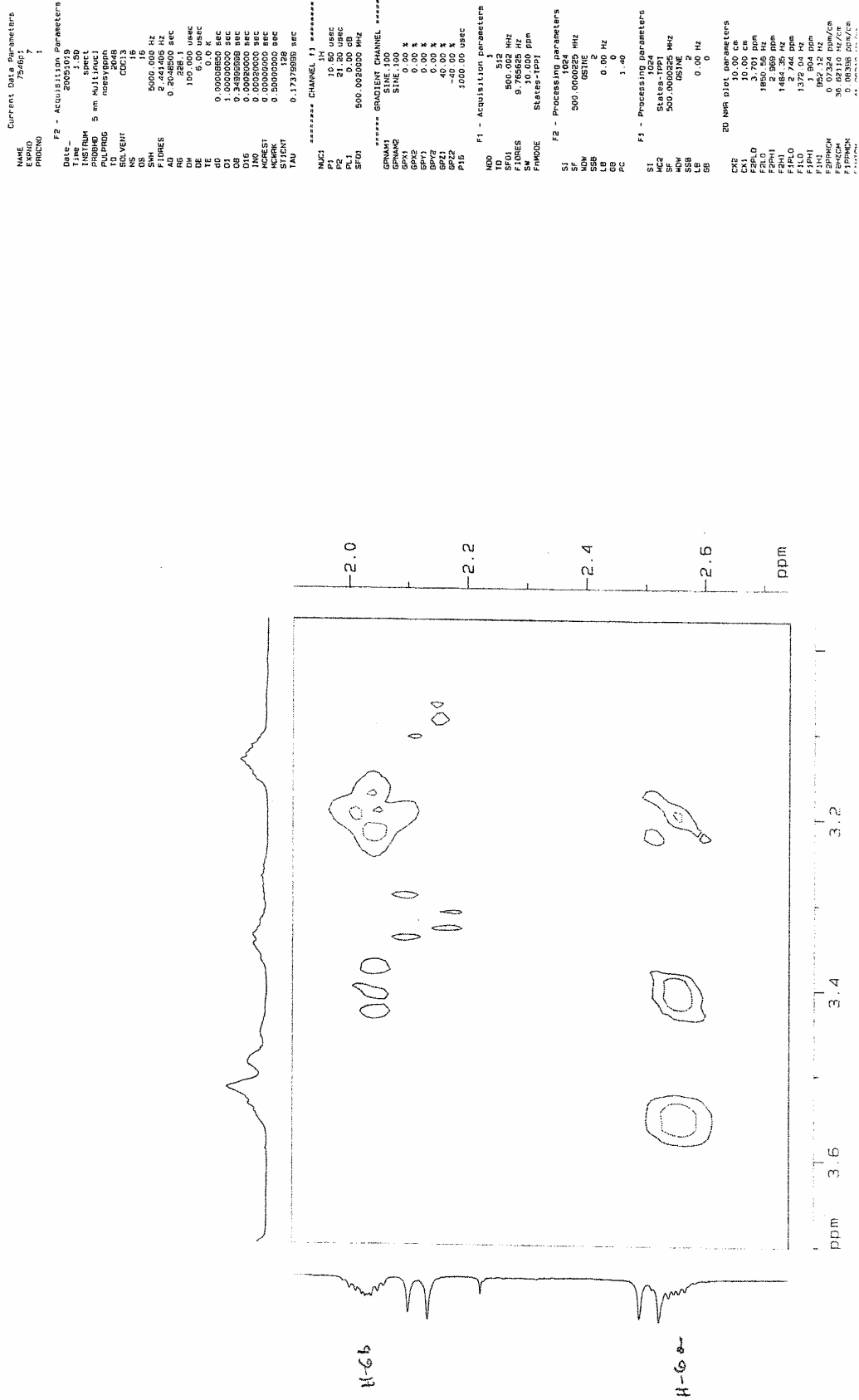
SI 500.130000 MHz
 SF 500.130000 MHz
 LB 0.00 Hz
 GB 0

20 MHz p101 parameters

CQ2 10.00 sec
 PZFLD 4.250 dB
 FFLD 2990.74 Hz
 SFLD 1480.37 Hz
 F1FLD 4.658 dBm
 F2FLD 2326.09 Hz
 F3FLD 1484.36 Hz
 F4FLD 0.14430 dBm/Hz
 F5FLD 0.14430 dBm/Hz
 F6FLD 0.14430 dBm/Hz
 F7FLD 0.14430 dBm/Hz
 F8FLD 0.14430 dBm/Hz
 F9FLD 0.14430 dBm/Hz
 F10FLD 0.14430 dBm/Hz
 F11FLD 0.14430 dBm/Hz
 F12FLD 0.14430 dBm/Hz
 F13FLD 0.14430 dBm/Hz
 F14FLD 0.14430 dBm/Hz
 F15FLD 0.14430 dBm/Hz
 F16FLD 0.14430 dBm/Hz
 F17FLD 0.14430 dBm/Hz
 F18FLD 0.14430 dBm/Hz
 F19FLD 0.14430 dBm/Hz
 F20FLD 0.14430 dBm/Hz



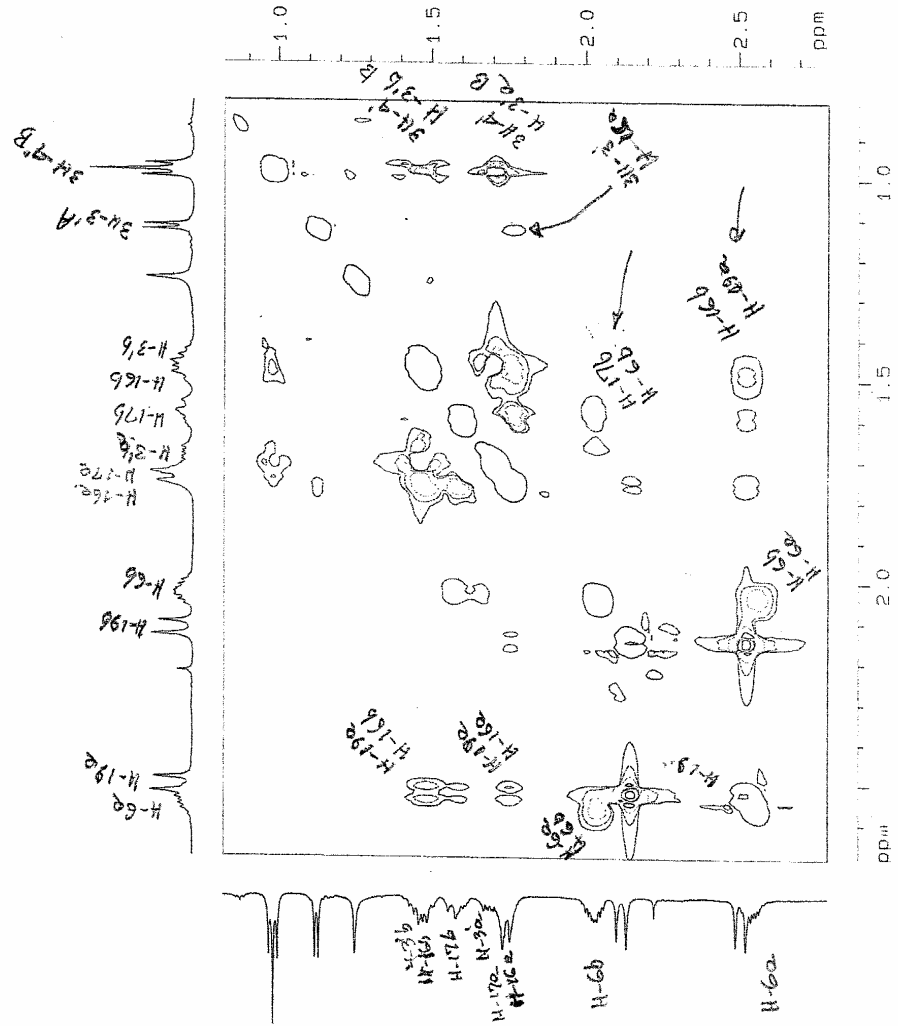
Espectro 108. Ampliação do mapa de correlação homonuclear ¹H-¹H-NOESY em CDCl₃ da mistura dos alcalóides spruceanumina A e spruceanumina B.



Espectro 109. Ampliação do mapa de correlação homonuclear ¹H-¹H-NOESY em CDCl₃ da mistura dos alcalóides spruceanumina A e spruceanumina B.

```

Current Data Parameters
=====
EXPNO      7
PROCNO     1
Date_      20051029
Time       1.30
INSTRUM    spect
PROBHD     5 mm Multispec1
PULPROG    zgpg30
NUC1       13C
SOLVENT    CDCl3
NS         16
DS         16
AQ         5000.000 Hz
FIDRES     2.441465 Hz
AQ         0.2048500 SEC
RG          327.500
AQ         1.9200000 SEC
DE          6.00 uS/SEC
TE         300.2 K
O1         0.0000000 SEC
O2         0.0000000 SEC
O3         1.0000000 SEC
DB         0.349999999 SEC
D18        0.00250000 SEC
D19        0.00250000 SEC
D20        0.00000000 SEC
D21        40.000000 SEC
D22        0.00000000 SEC
D23        0.00000000 SEC
D24        0.50000000 SEC
D25        0.17378888 SEC
===== CHANNEL f1 =====
NUC1       13C
P1         10.00 uS/SEC
P2         21.20 uS/SEC
SFO1       500.000000 MHz
SFO2       500.000000 MHz
===== GRADIENT CHANNEL =====
GPMWR      STINE.100
GPR1       0.00 %
GPR2       0.00 %
GPR3       0.00 %
GPR4       0.00 %
GPR5       0.00 %
GPR6       0.00 %
GPR7       0.00 %
GPR8       0.00 %
GPR9       0.00 %
GPR10      0.00 %
GPR11      0.00 %
GPR12      0.00 %
GPR13      0.00 %
GPR14      0.00 %
GPR15      0.00 %
===== CHANNEL f2 =====
NUC1       13C
P1         10.00 uS/SEC
P2         21.20 uS/SEC
SFO1       500.000000 MHz
SFO2       500.000000 MHz
===== GRADIENT CHANNEL =====
GPMWR      STINE.100
GPR1       0.00 %
GPR2       0.00 %
GPR3       0.00 %
GPR4       0.00 %
GPR5       0.00 %
GPR6       0.00 %
GPR7       0.00 %
GPR8       0.00 %
GPR9       0.00 %
GPR10      0.00 %
GPR11      0.00 %
GPR12      0.00 %
GPR13      0.00 %
GPR14      0.00 %
GPR15      0.00 %
===== CHANNEL f3 =====
NUC1       13C
P1         10.00 uS/SEC
P2         21.20 uS/SEC
SFO1       500.000000 MHz
SFO2       500.000000 MHz
===== GRADIENT CHANNEL =====
GPMWR      STINE.100
GPR1       0.00 %
GPR2       0.00 %
GPR3       0.00 %
GPR4       0.00 %
GPR5       0.00 %
GPR6       0.00 %
GPR7       0.00 %
GPR8       0.00 %
GPR9       0.00 %
GPR10      0.00 %
GPR11      0.00 %
GPR12      0.00 %
GPR13      0.00 %
GPR14      0.00 %
GPR15      0.00 %
===== CHANNEL f4 =====
NUC1       13C
P1         10.00 uS/SEC
P2         21.20 uS/SEC
SFO1       500.000000 MHz
SFO2       500.000000 MHz
===== GRADIENT CHANNEL =====
GPMWR      STINE.100
GPR1       0.00 %
GPR2       0.00 %
GPR3       0.00 %
GPR4       0.00 %
GPR5       0.00 %
GPR6       0.00 %
GPR7       0.00 %
GPR8       0.00 %
GPR9       0.00 %
GPR10      0.00 %
GPR11      0.00 %
GPR12      0.00 %
GPR13      0.00 %
GPR14      0.00 %
GPR15      0.00 %
===== CHANNEL f5 =====
NUC1       13C
P1         10.00 uS/SEC
P2         21.20 uS/SEC
SFO1       500.000000 MHz
SFO2       500.000000 MHz
===== GRADIENT CHANNEL =====
GPMWR      STINE.100
GPR1       0.00 %
GPR2       0.00 %
GPR3       0.00 %
GPR4       0.00 %
GPR5       0.00 %
GPR6       0.00 %
GPR7       0.00 %
GPR8       0.00 %
GPR9       0.00 %
GPR10      0.00 %
GPR11      0.00 %
GPR12      0.00 %
GPR13      0.00 %
GPR14      0.00 %
GPR15      0.00 %
===== CHANNEL f6 =====
NUC1       13C
P1         10.00 uS/SEC
P2         21.20 uS/SEC
SFO1       500.000000 MHz
SFO2       500.000000 MHz
===== GRADIENT CHANNEL =====
GPMWR      STINE.100
GPR1       0.00 %
GPR2       0.00 %
GPR3       0.00 %
GPR4       0.00 %
GPR5       0.00 %
GPR6       0.00 %
GPR7       0.00 %
GPR8       0.00 %
GPR9       0.00 %
GPR10      0.00 %
GPR11      0.00 %
GPR12      0.00 %
GPR13      0.00 %
GPR14      0.00 %
GPR15      0.00 %
===== CHANNEL f7 =====
NUC1       13C
P1         10.00 uS/SEC
P2         21.20 uS/SEC
SFO1       500.000000 MHz
SFO2       500.000000 MHz
===== GRADIENT CHANNEL =====
GPMWR      STINE.100
GPR1       0.00 %
GPR2       0.00 %
GPR3       0.00 %
GPR4       0.00 %
GPR5       0.00 %
GPR6       0.00 %
GPR7       0.00 %
GPR8       0.-60
    
```



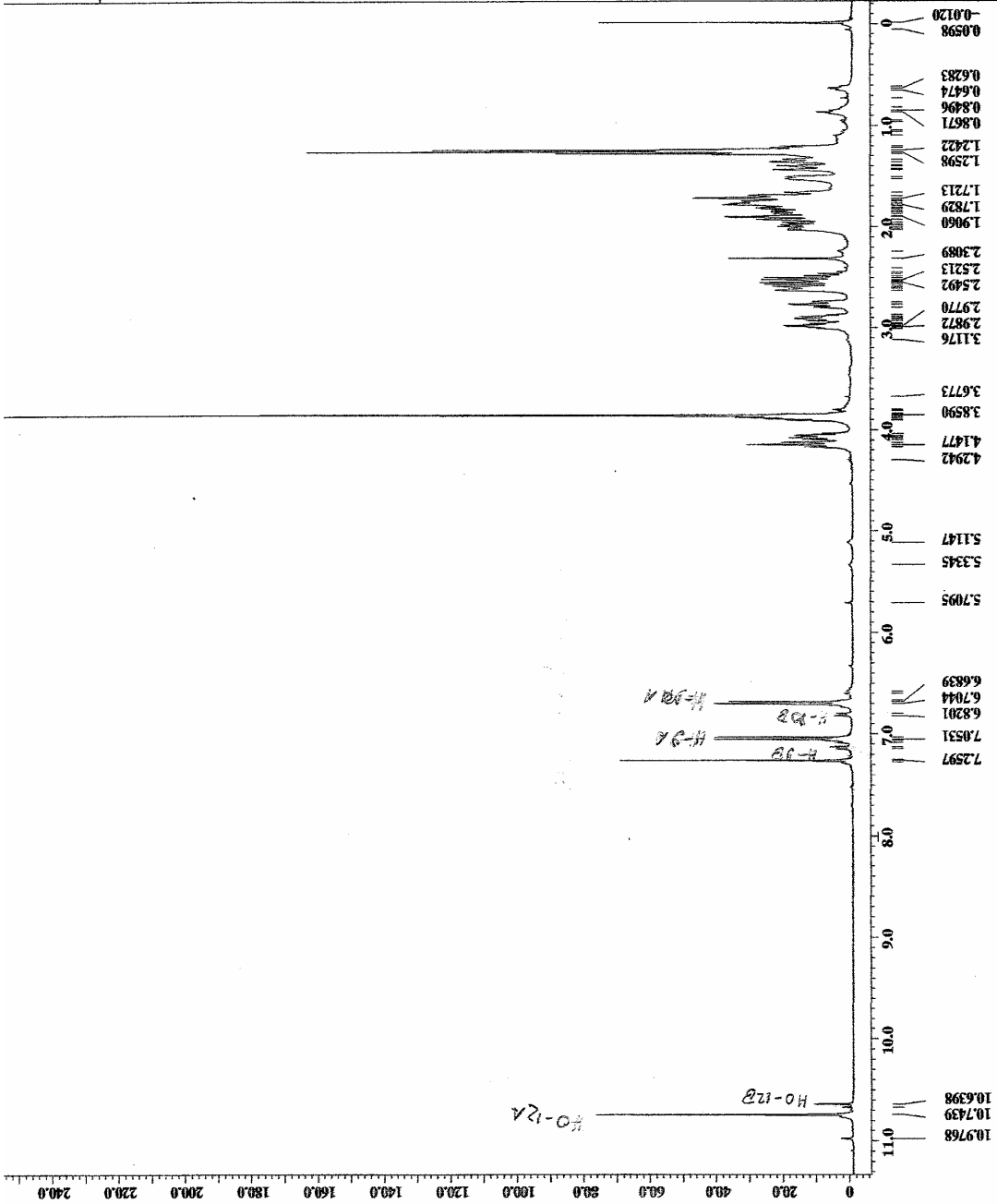
Espectro 110. Ampliação do mapa de correlação homonuclear ^1H - ^1H -NOESY em CDCl_3 da mistura dos alcalóides spruceanumina A e spruceanumina B.



```

= 51134-1R-4.jdf
= ROBERTO COUTO
= single_pulse.exp
= C:\38\CPQM-D
= 20-JUN-2007 16:29:00
= 7-AUG-2007 17:14:42
= 7-AUG-2007 17:14:56
= Single Pulse Experims
= ID COMPMX
= 16384
= 1R
= ppm
= Eclipse4 400
= DELTA_NMR
Spectrometer
Field_strength = 9.3897661T (400[MHz])
X_acq_duration = 1.7072128[s]
X_domain = 399.78219838[MHz]
X_freq = 16384
X_offset = 0.00000000[MHz]
X_prescans = 0
X_resolution = 0.88575006[Hz]
X_sweep = 9.59682898[kHz]
Mod_return = 1
Scans = 2
X_90_width = 12.5[us]
X_acq_time = 16.7072128[s]
X_avg = 8
X_inject = 1[s]
Initial_wait = 3[s]
Phase_preset = 3[us]
Recvr_gain = 13
Relaxation_delay = 1[s]
Temp_get = 29[dc]
Unblank_time = 2[us]

```



Espectro 111. Espectro de RMN ¹H (400 MHz) em CDCl₃ da mistura dos alcalóides (-)-aspodilimidina e (-)-fendlerina.



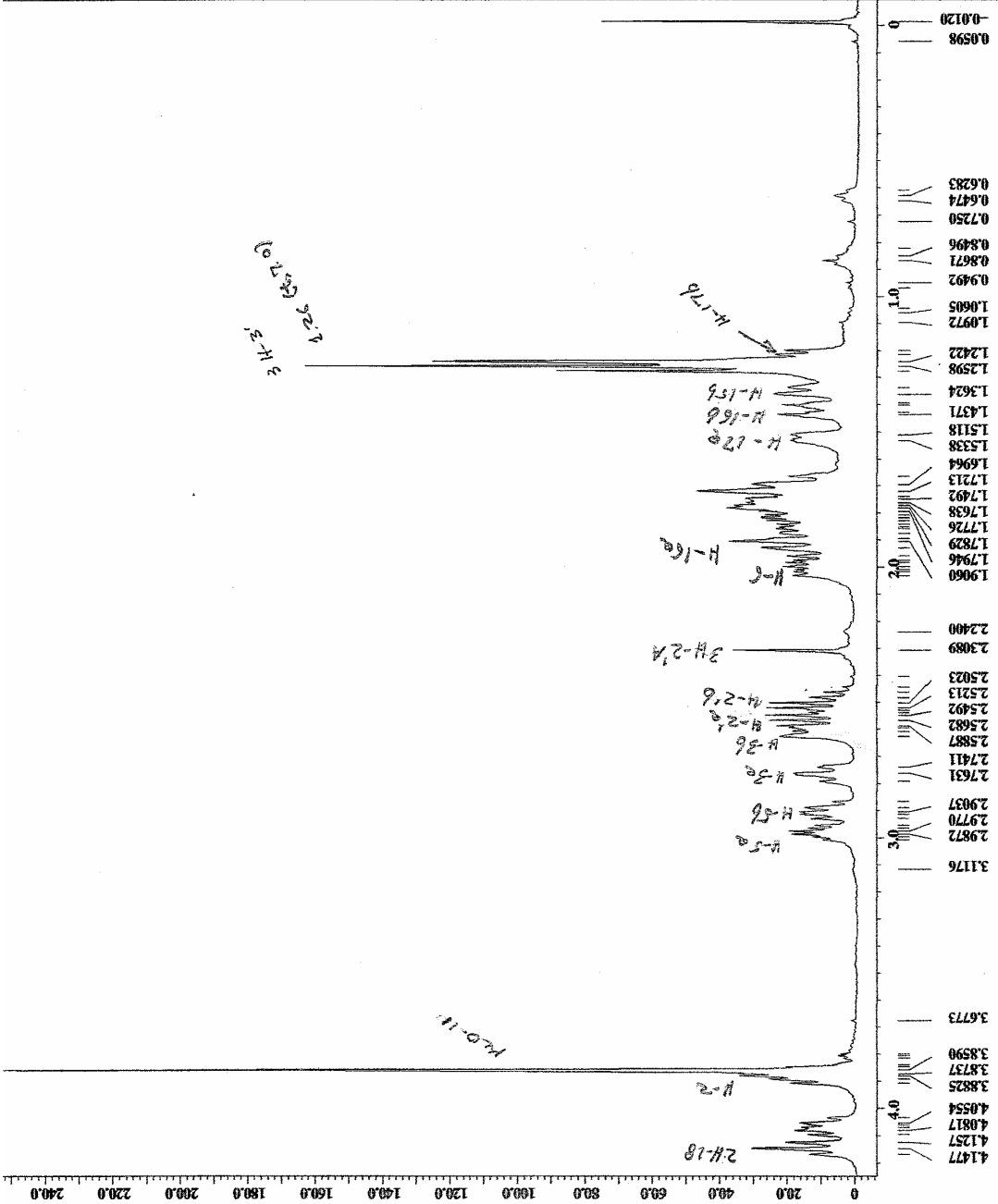
```

FileNames = E1134-1R-4.jdf
Author = ROBERTO COTO
Experiment = single_pulse.exp
Sample_id = E1134
Pulse_prog = zgpg30
Creation_time = 20-AUG-2007 16:29:00
Revision_time = 7-AUG-2007 17:14:42
Current_time = 7-AUG-2007 17:18:00

Comment = Single Pulse Experiment
Data_format = ID COMPLEX
Data_size = 16384
Dir_title = IR
Dir_units = ppm
Dimensions = 1d
Spectrometer = spect 400
Spectrometer = DELTA_NMR

Field_strength = 9.389766[T] (400[MHz])
X_acq_duration = 1.7072128[s]
X_domain = IR
X_freq = 399.78219830[MHz]
X_offset = 16384
X_points = 16384
X_prescan = 0
X_resolution = 0.58575006[Hz]
X_swept = 9.59692898[MHz]
Mod_return = 1
Scans = 2

X_90_width = 12.5[us]
X_acq_time = 1.7072128[s]
X_angle = 45[deg]
X_pulse = 9.25[us]
X_wait = 3[s]
X_acquire = 23
Relaxation_delay = 1[s]
Temp_get = 25[degC]
Unblank_time = 2[us]
    
```



Espectro 112. Ampliação da região δ_H 0,1-4,2 do espectro de RMN 1H (400 MHz) em $CDCl_3$ da mistura dos alcalóides (-)-aspodilimidina e (-)-fendlerina.



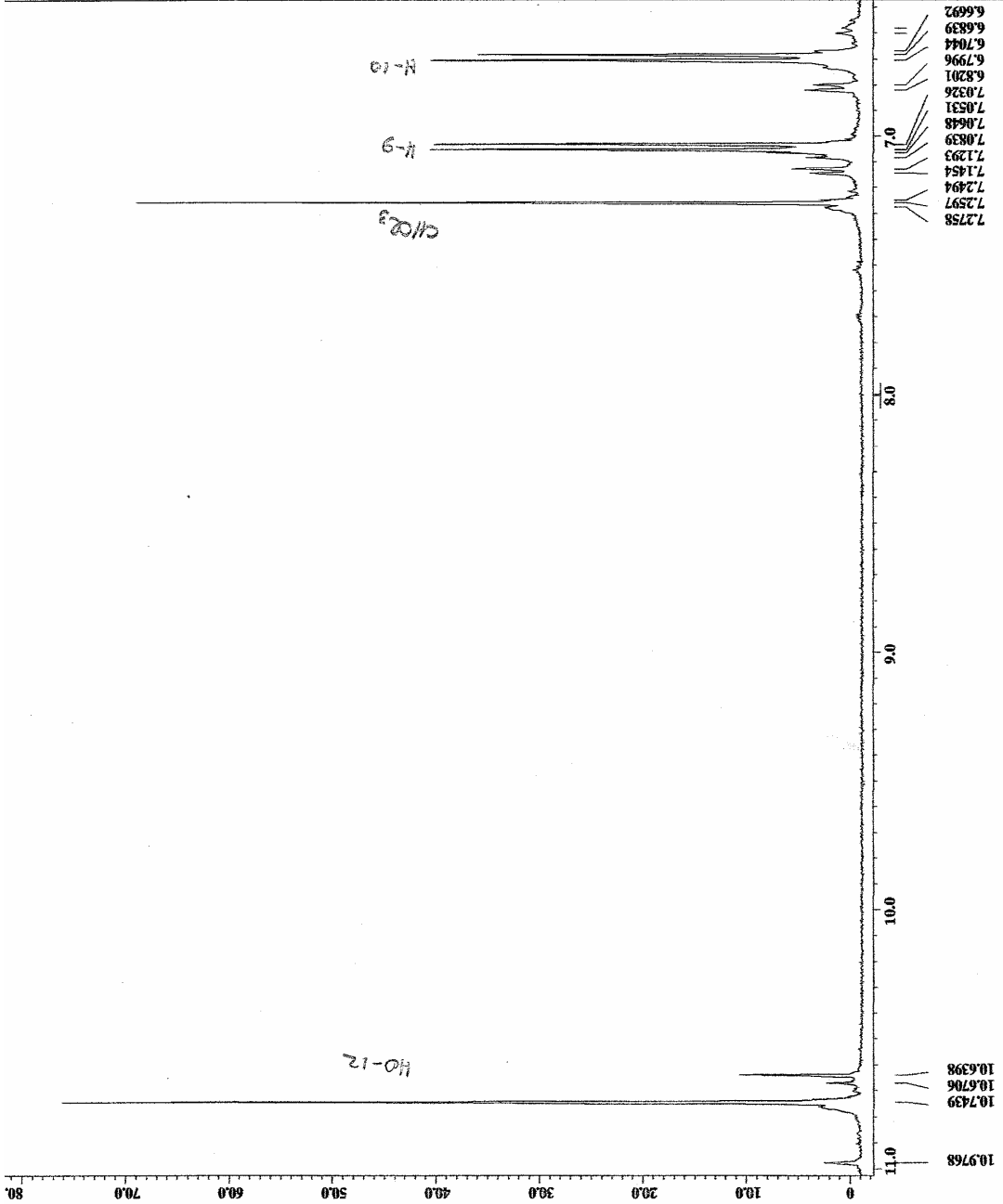
```

Filename = 51134-H-4.fid
Author = REMARIO COSTA
Experiment = 51134_pulse.exp
Sample_id = CHLOROFORM-D
Creation_time = 20-JUN-2007 16:29:00
Revision_time = 7-AUG-2007 17:14:42
Current_time = 7-AUG-2007 17:15:56

Comment = Single Pulse Experiment
Data_format = 1D COMPLEX
Dim_1 = 65536
Dim_2 = 16
Dim_units = [ppm]
Dimensions = X
Site = Eclipse+ 400
Spectrometer = DELTA_NMR

Field_strength = 9.389766[T] (400[Mhz])
X_acq_duration = 1.7072128[s]
X_domain = 399.7821988[Mhz]
X_offset = 819361
X_points = 16384
X_prescans = 0
X_resolution = 0.58575006[Hz]
X_sweep = 9.59692898[Mhz]
Mod_return = 1
Scans = 2

X_90_width = 12.5[us]
X_90_time = 1.7072128[s]
X_angle = 45[deg]
X_pulse = 6.25[us]
Initial_wait = 1[s]
Phase_preset = 3[us]
Recvr_gain = 13
Relaxation_delay = 1[s]
Temp_get = 25[dc]
Onblank_time = 2[us]
    
```



Espectro 113. Ampliação da região δ_H 6,6-10,9 do espectro de RMN 1H (400 MHz) em $CDCl_3$ da mistura dos alcalóides (-)-aspidolimidina e (-)-fendlerina.

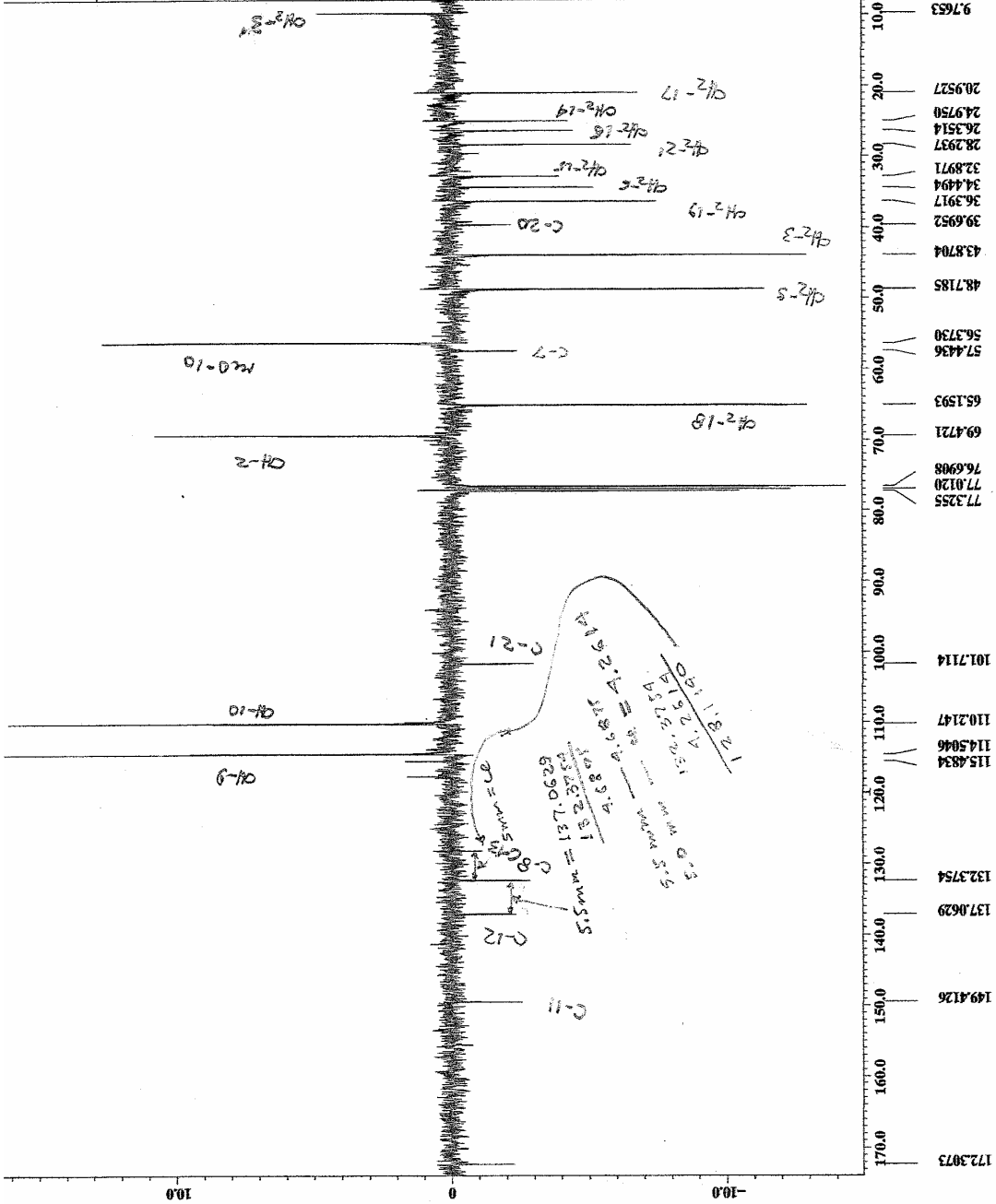


```

= 51134-13C_PENDANT-7.j
= ROBERT COPO
= Author
= 51134-13C_PENDANT
= Sample_id
= CHLOROFORM-D
= Solvent
= 20-JUN-2007 17:17:18
= Creation_time
= 7-AUG-2007 17:21:50
= Revision_time
= 7-AUG-2007 17:22:13
= Current_time

= Pendant
= 13C_CPMPLEX
= Data_format
= 32768
= Dim_title
= 13C
= Dim_units
= [ppm]
= Dimensions
= X
= Site
= Relipset 400
= Spectrometer
= DELTA_NMR

Field_strength = 9.388766[T] (400[MHz])
X_acq_duration = 1.32008886[s]
X_sweep = 100.52530333[MHz]
X_offset = 120[ppm]
X_points = 32768
X_prescans = 0
X_resolution = 0.76870474[Hz]
X_swap = 25.18891688[KHz]
X_domain = 18
X_start = 19.78219338[MHz]
X_end = 51[ppm]
Mod_return = 1025
Scans = 1
X_acq_time = 1.3008896[s]
X_pulse = 13.72[us]
Xr_pulse = 45[us]
Initial_wait = 1[s]
P_constant = 45[Hz]
Acq_gain = 3[us]
Recvr_gain = 28
Relaxation_delay = 1[s]
Temp_get = 25[dC]
Unblank_time = 2[us]
    
```



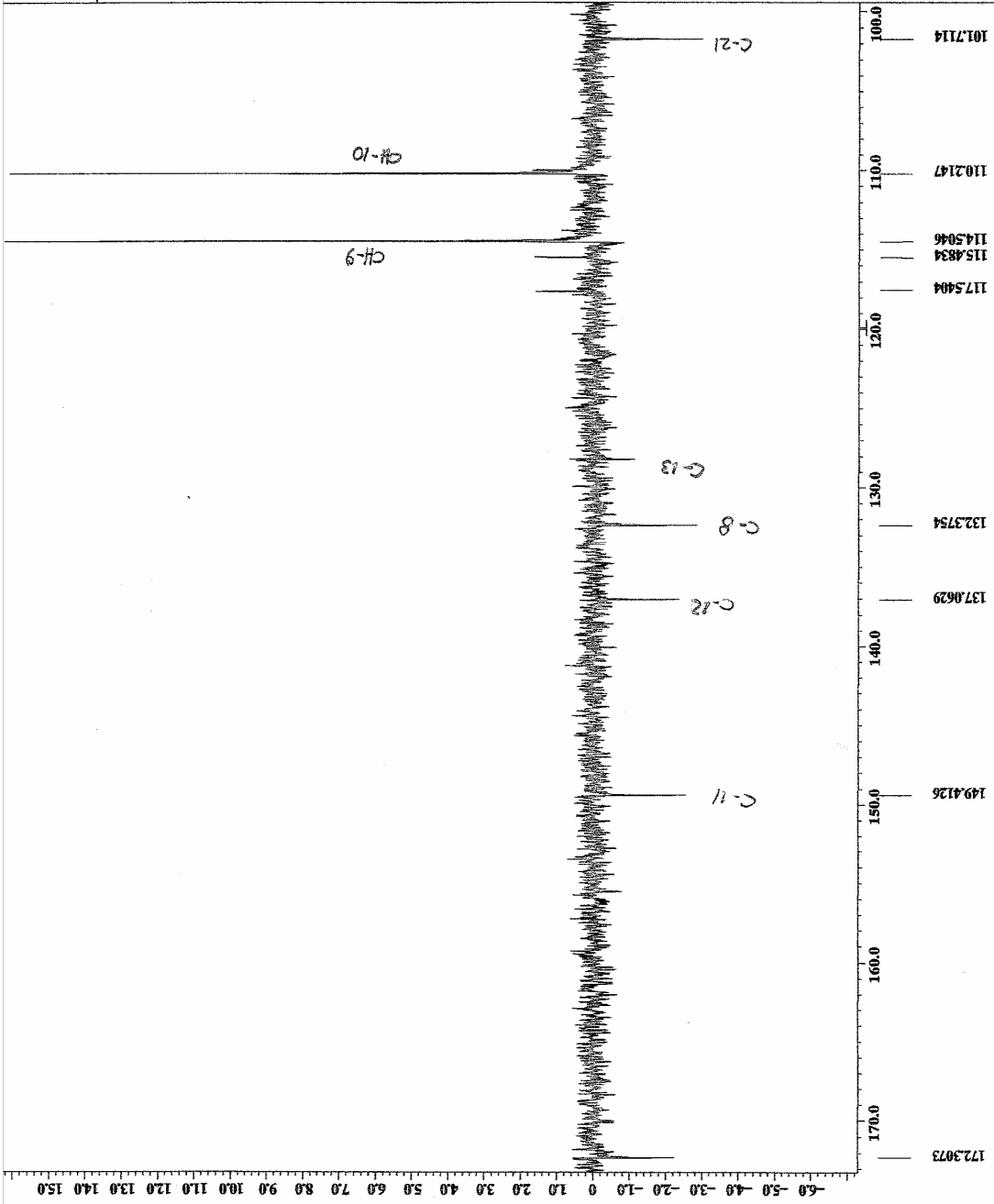
Espectro 114. Ampliação da região δ_c 9,7-170 do espectro de RMN ^{13}C (100 MHz-PENDANT) em CDCl_3 da mistura dos alcalóides (-)-aspidolimidina e (-)-fendlerina.



```

* S1124-13C_PENDANT-8.j
* ROBERTO COUTO
* Pendant exp
* Solvent CDCl3
* CHLOROFORM-D
* 20-JUN-2007 17:17:18
* Revision_time
* 7-AUG-2007 17:23:25
* Current_time
* Pendant
* ID COMPREX
* 32768
* 13C
* 45[us]
* 1[us]
* 145[us]
* 3[us]
* 29
* 25[us]
* 2[us]
* 2[us]
* 1925
* 1.3008896[s]
* 13.72[us]
* 45[us]
* 1[s]
* 145[us]
* 3[us]
* 29
* 25[us]
* 2[us]
* 2[us]
* 1925
* 9.389766[M] (400[MHz])
* X_acq_duration
* 1.3008896[s]
* X_domain
* 10.52530333[MHz]
* X_freq
* 32768
* X_points
* 0
* X_prescans
* 0
* X_resolution
* 0.76870474[Hz]
* X_sweep
* 25.18891688[MHz]
* Irr_domain
* 18
* Irr_freq
* 399.78219836[MHz]
* Irr_offset
* 5[ppm]
* Mod_return
* 1
* Scans
* 1925
* X_acq_time
* 1.3008896[s]
* X_pulse
* 13.72[us]
* Irr_pulse
* 45[us]
* Initial_wait
* 1[s]
* J_constant
* 145[Hz]
* Phase_preset
* 3[us]
* Recvz_gain
* 29
* Relaxation_delay
* 25[us]
* T1_rho_delay
* 2[us]
* Unblock_time
* 2[us]

```



Espectro 115. Ampliação da região δ_c 100-172 do espectro de RMN ^{13}C (100 MHz-PENDANTE) em CDCl_3 da mistura dos alcalóides (-)-aspidimidina e (-)-fendlerina.



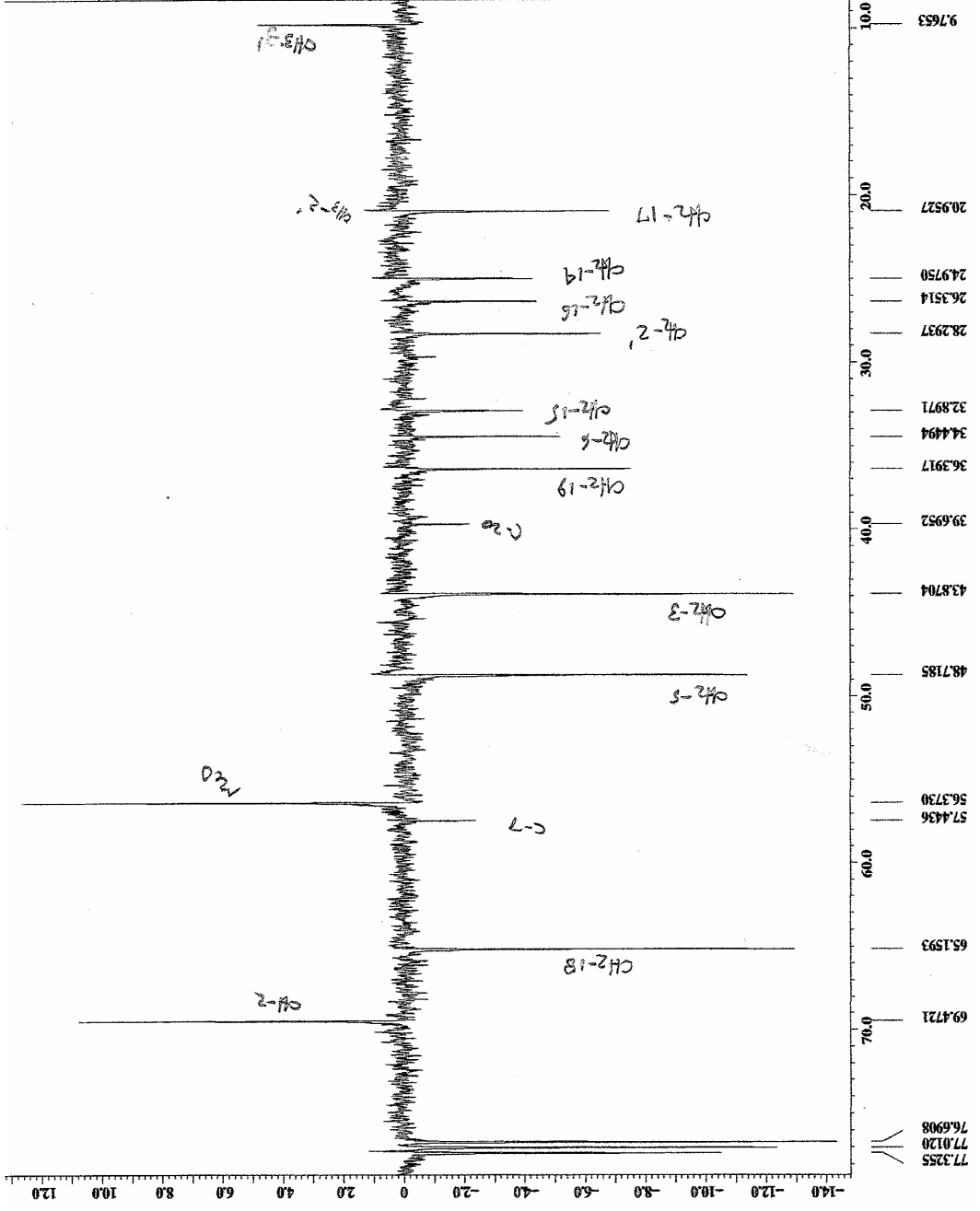
```

File Name = E1134-13C_PENDANT-8.J
Author = ROBERTO COUTO
Experiment = E1134-13C_PENDANT
Solvent = CHLOROFORM-D
Creation_time = 20-JUN-2007 17:17:18
Revision_time = 7-AUG-2007 17:23:25
Current_time = 7-AUG-2007 17:24:38

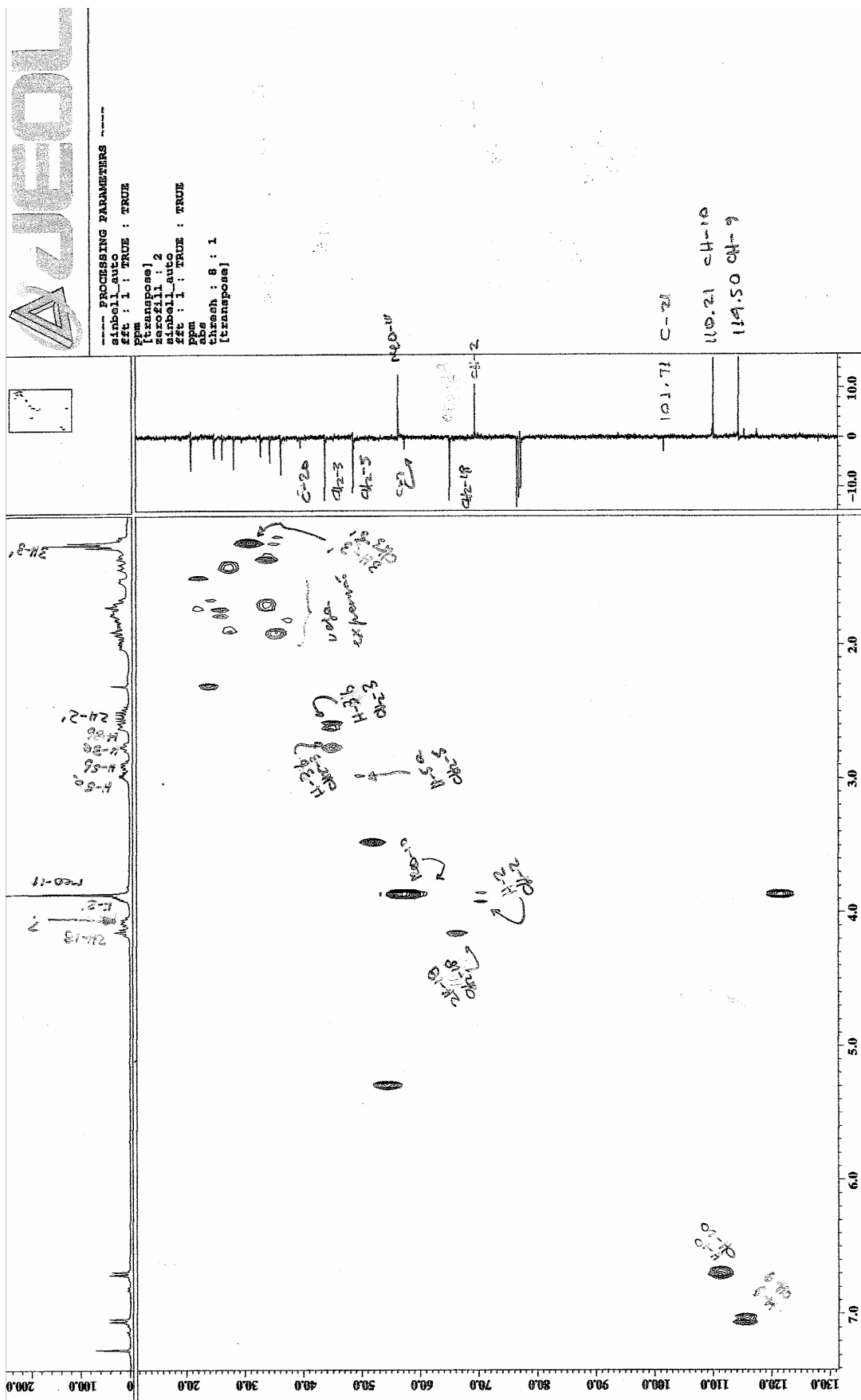
Comment = Pendant
Data Format = DELTA_NMR
Date_ Acq = 20070807
Dim Title = Eclipse+ 400
Dim Units = [ppm]
Dimensions = X
Site = DELTA_NMR
Spectrometer =

Field strength = 9.389766 [T] (400 [MHz])
X_domain = 1.3008996 [s]
X_freq = 100.52530333 [MHz]
X_offset = 120 [ppm]
X_points = 32768
X_prescans = 0
X_resolution = 0.76870474 [Hz]
X_sweep = 18.18891668 [kHz]
IRF_gain = 399.78219838 [MHz]
IRF_offset = 51 [ppm]
Mod_return = 1
Scans = 1028

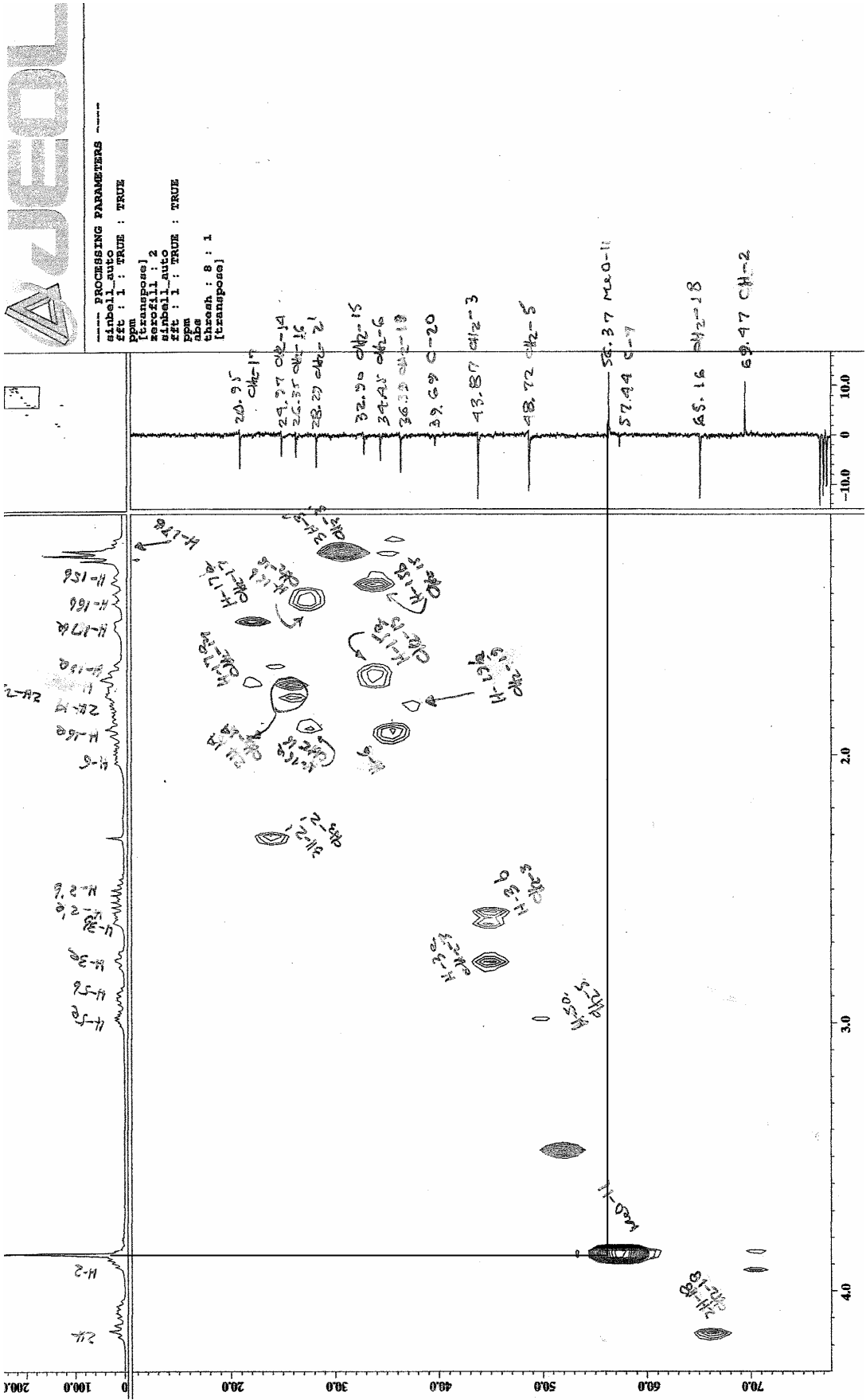
X_acq_time = 1.3008996 [s]
X_pulse = 1.3008996 [s]
Initial_wait = 45 [us]
J_constant = 145 [Hz]
Phase_preset = 3 [us]
Recvr_gain = 28
Relaxation_delay = 1 [s]
Temp_get = 25 [dc]
Undilnk_time = 2 [us]
    
```



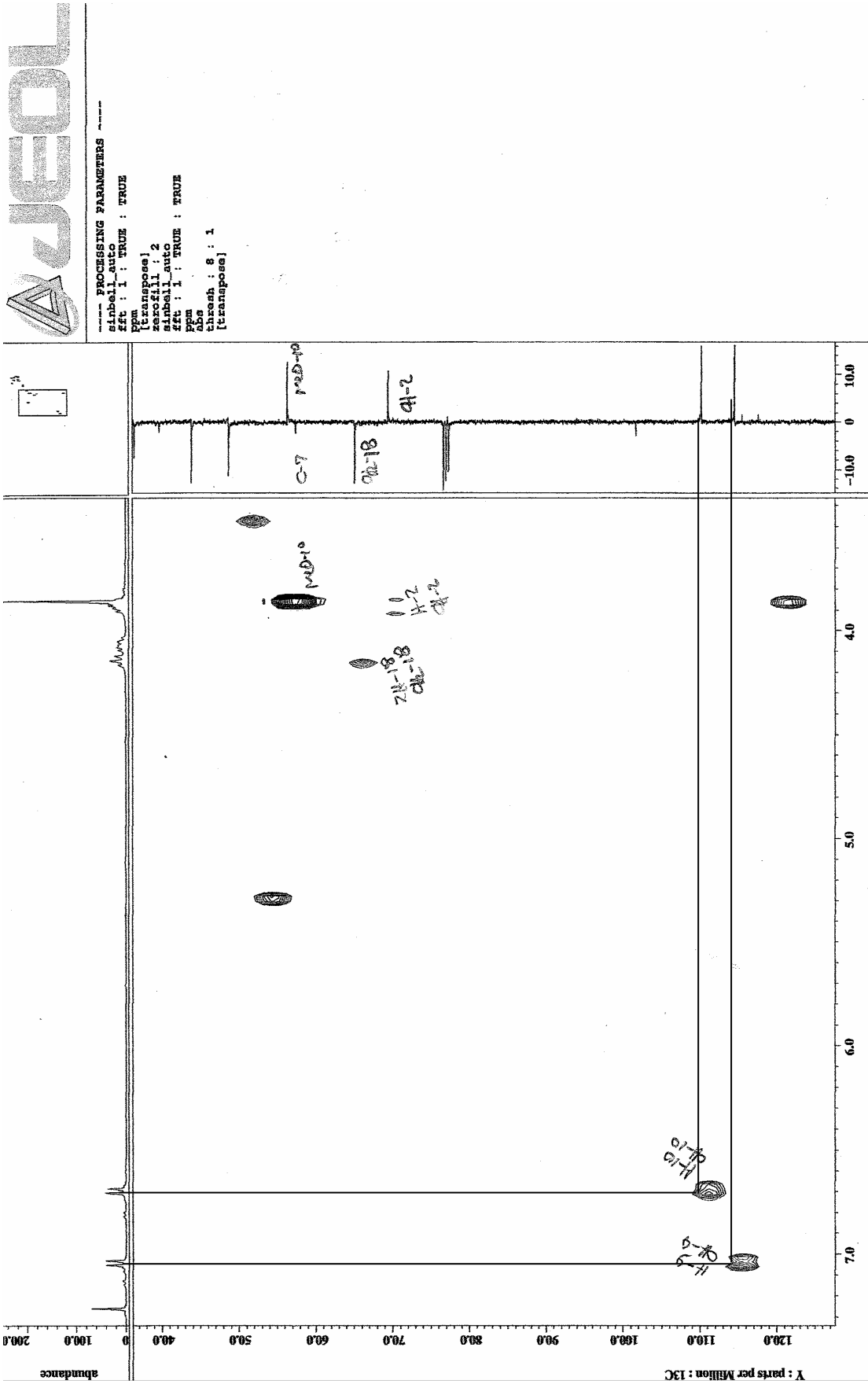
Espectro 116. Ampliação da região δ_c 10-77 do espectro de RMN ^{13}C (100 MHz-PENDANTE) em CDCl_3 da mistura dos alcalóides (-)-aspidolimidina e (-)-fendlerina.



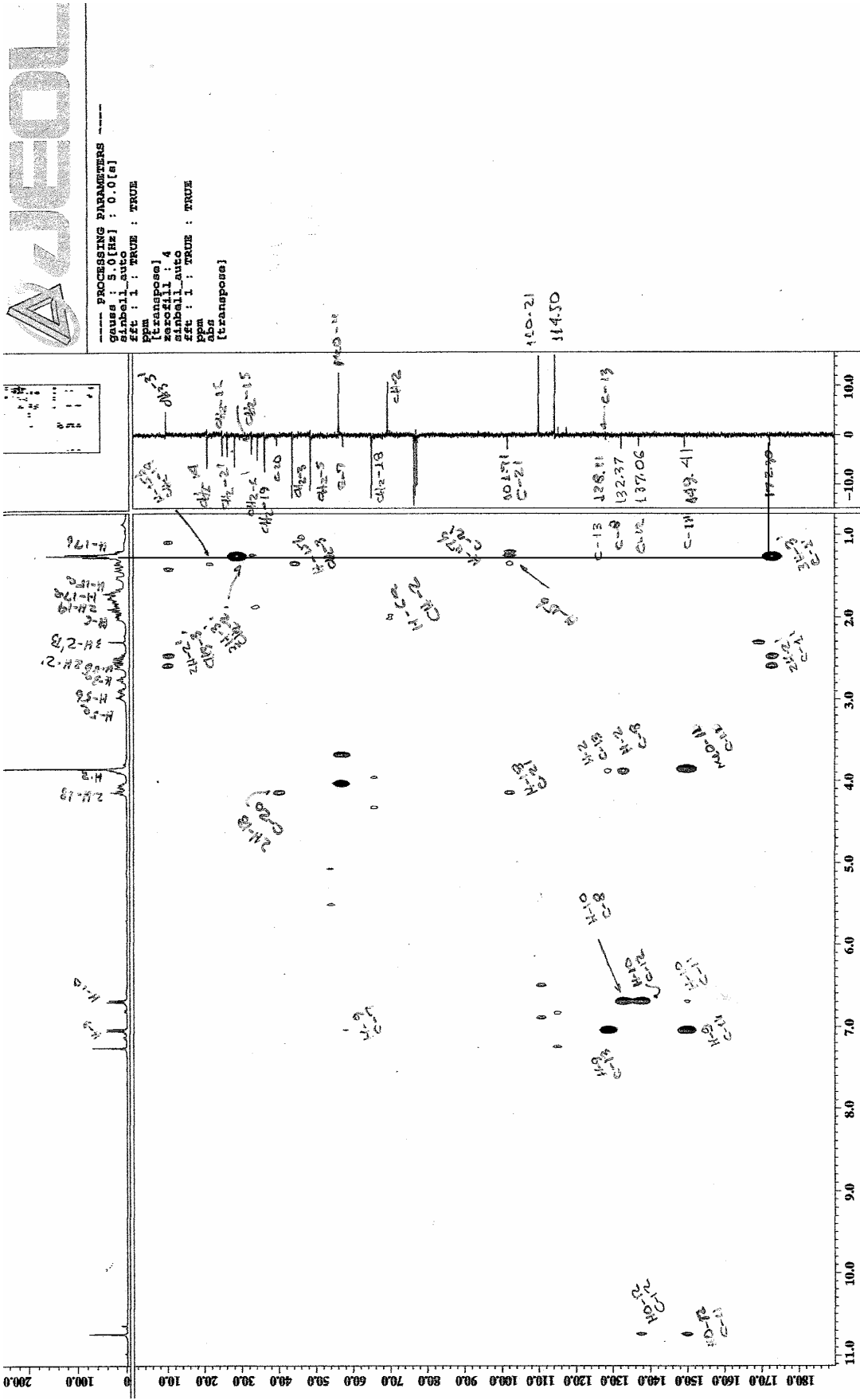
Espectro 117. Mapa de correlação heteronuclear HMQC em CDCl₃ da mistura dos alcalóides (-)-aspidolimidina e (-)-fendlerina.



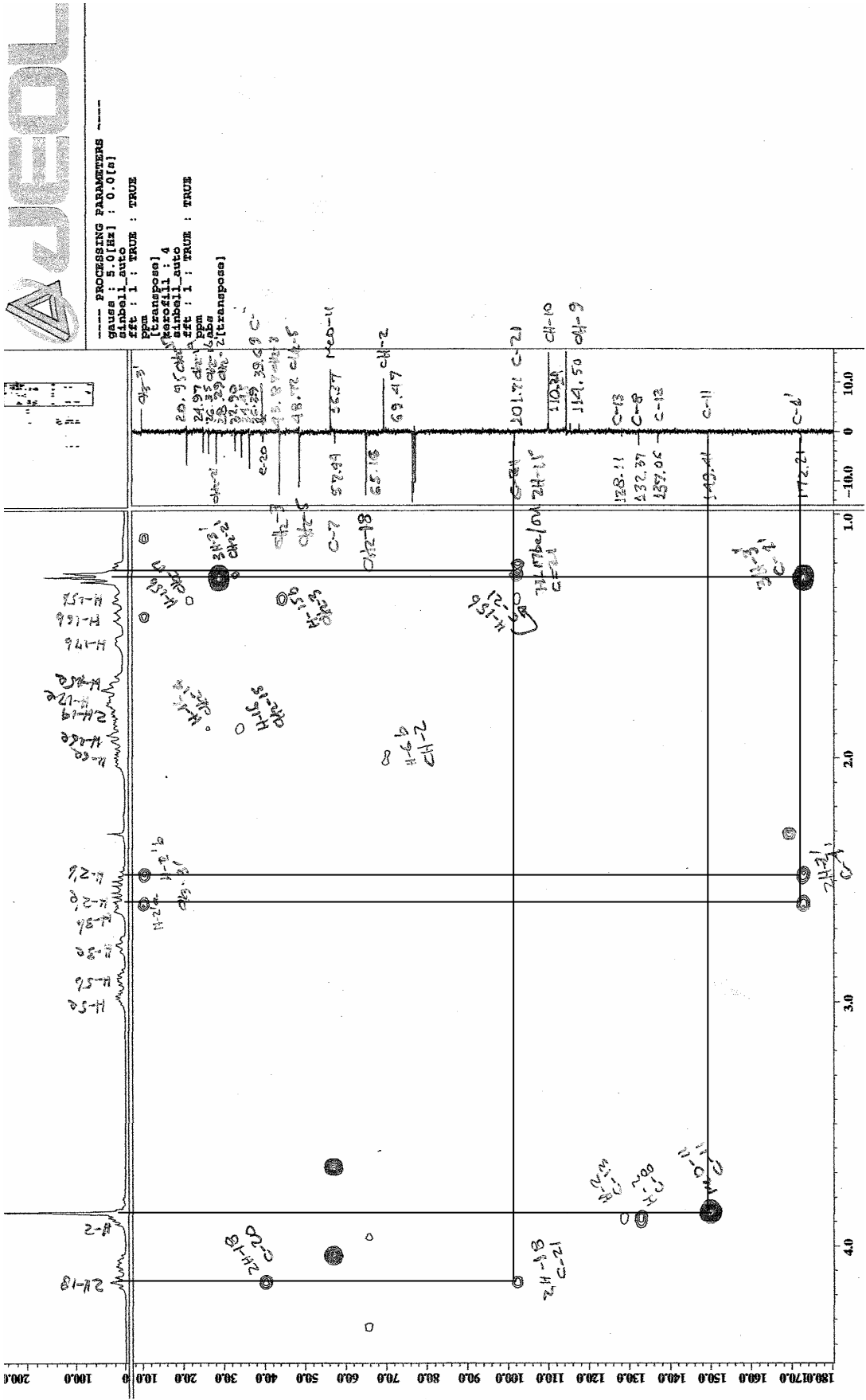
Espectro 118. Ampliação do mapa de correlação heteronuclear HMQC em CDCl₃ da mistura dos alcalóides (-)-aspidoimidina e (-)-fenderina.



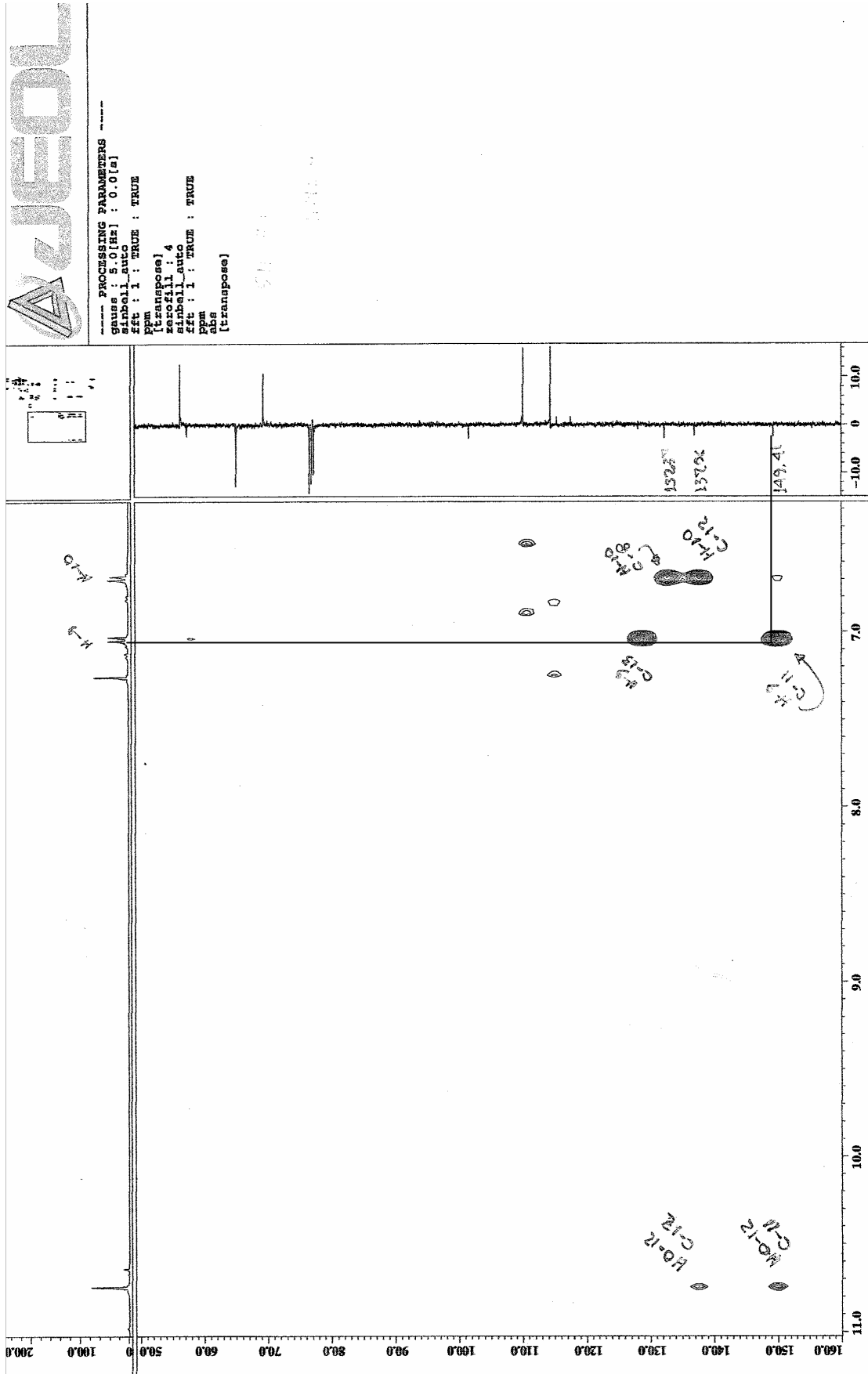
Espectro 119. Ampliação do mapa de correlação heteronuclear HMQC em CDCl₃ da mistura dos alcalóides (-)-aspidolimidina e (-)-fendlerina.



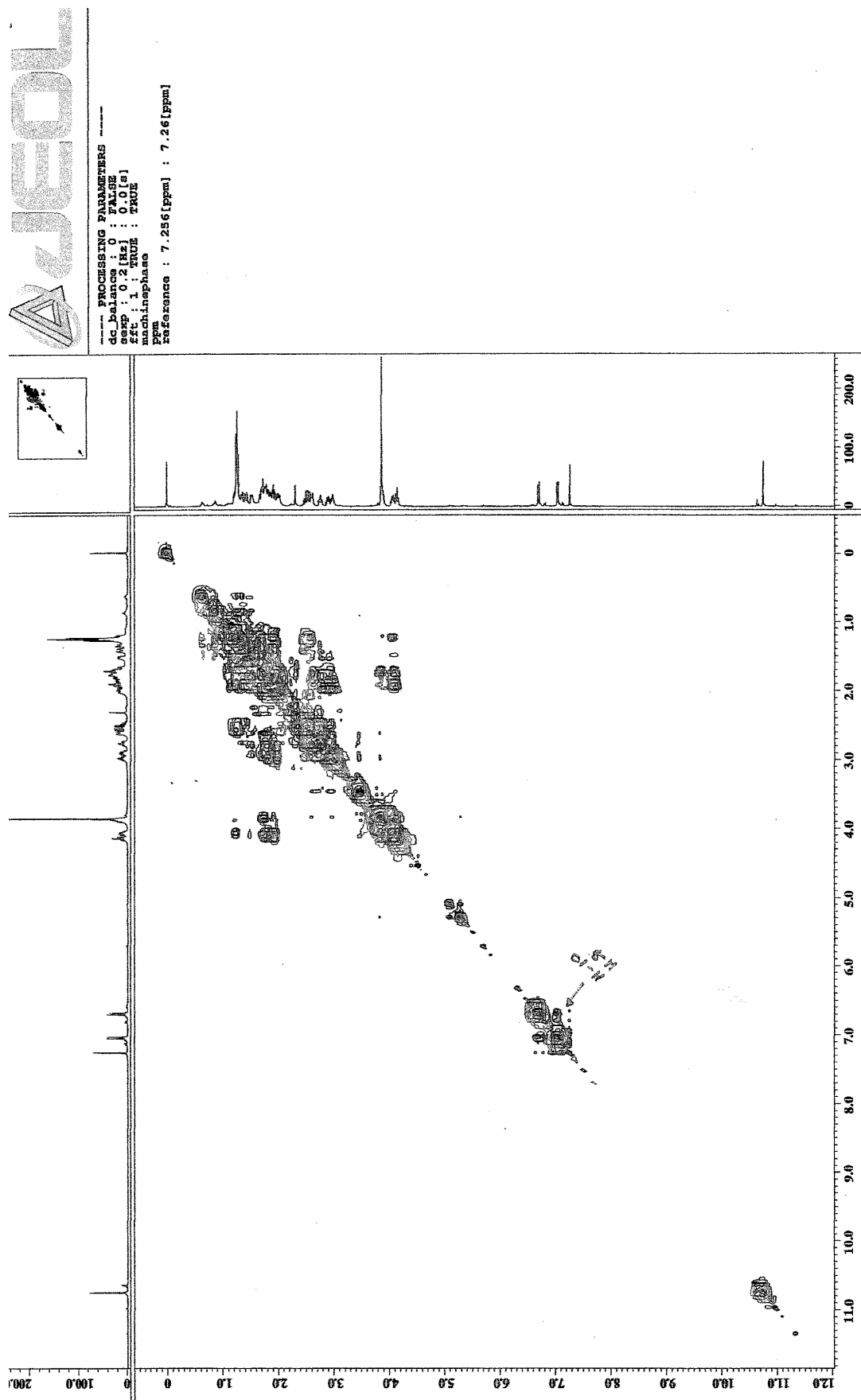
Espectro 120. Mapa de correlação heteronuclear HMBC em CDCl_3 da mistura dos alcalóides (-)-aspidolimidina e (-)-fendlerina.



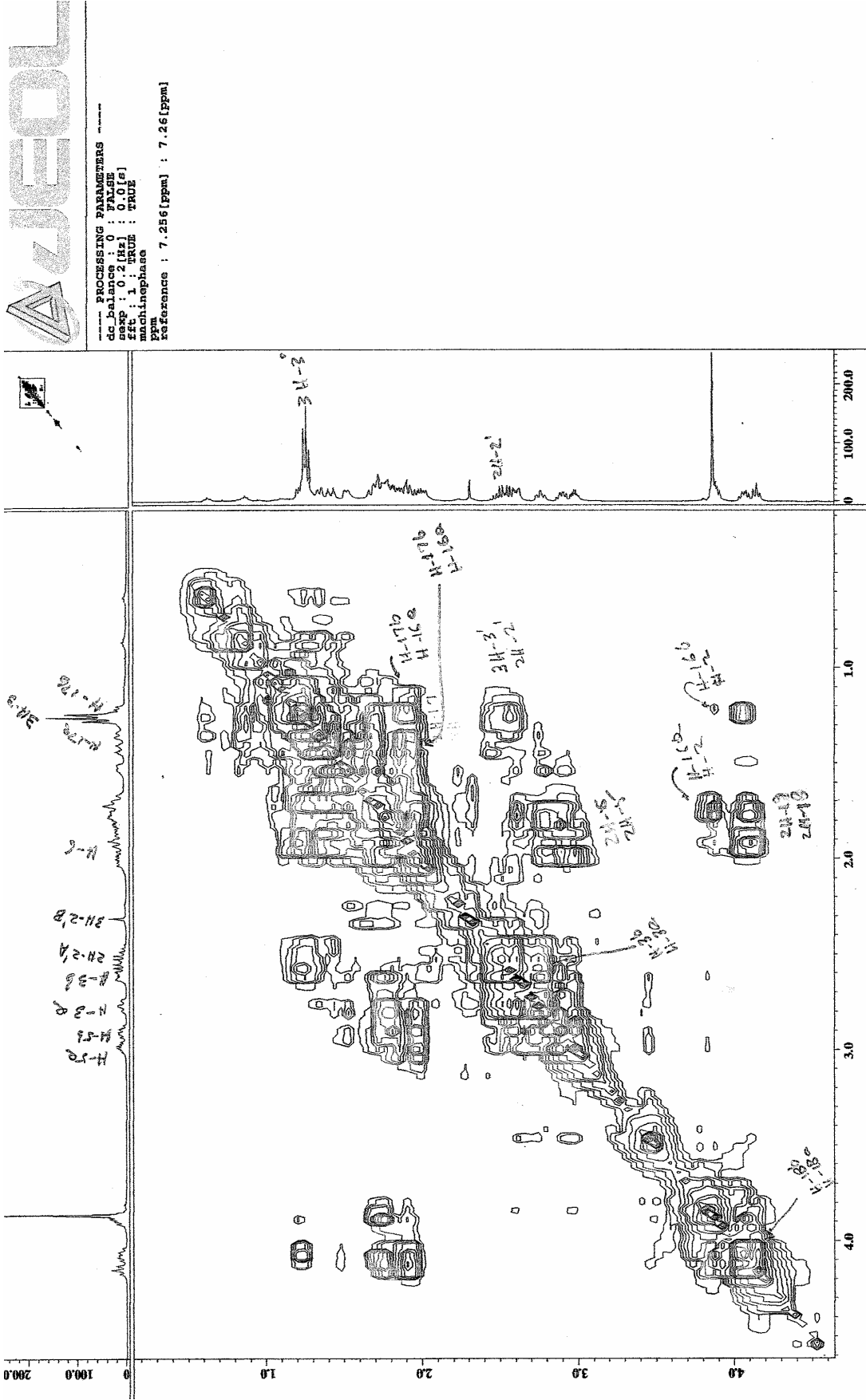
Espectro 121. Ampliação do mapa de correlação heteronuclear HMBC em $CDCl_3$ da mistura dos alcalóides (-)-aspilimidina e (-)-fenderina.



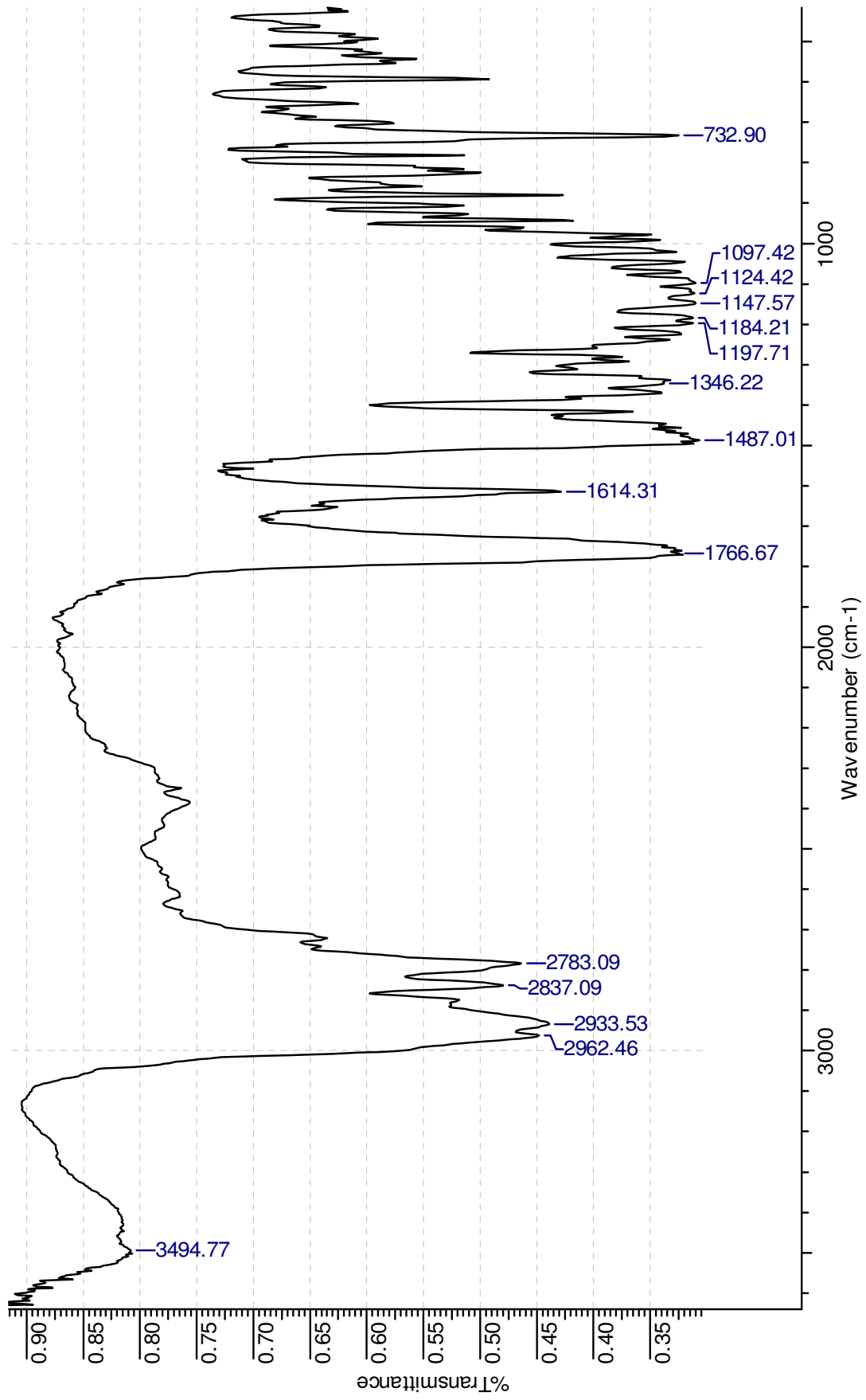
Espectro 122. Ampliação do mapa de correlação heteronuclear HMBC em CDCl_3 da mistura dos alcalóides (-)-aspidolimidina e (-)-fendlerina.



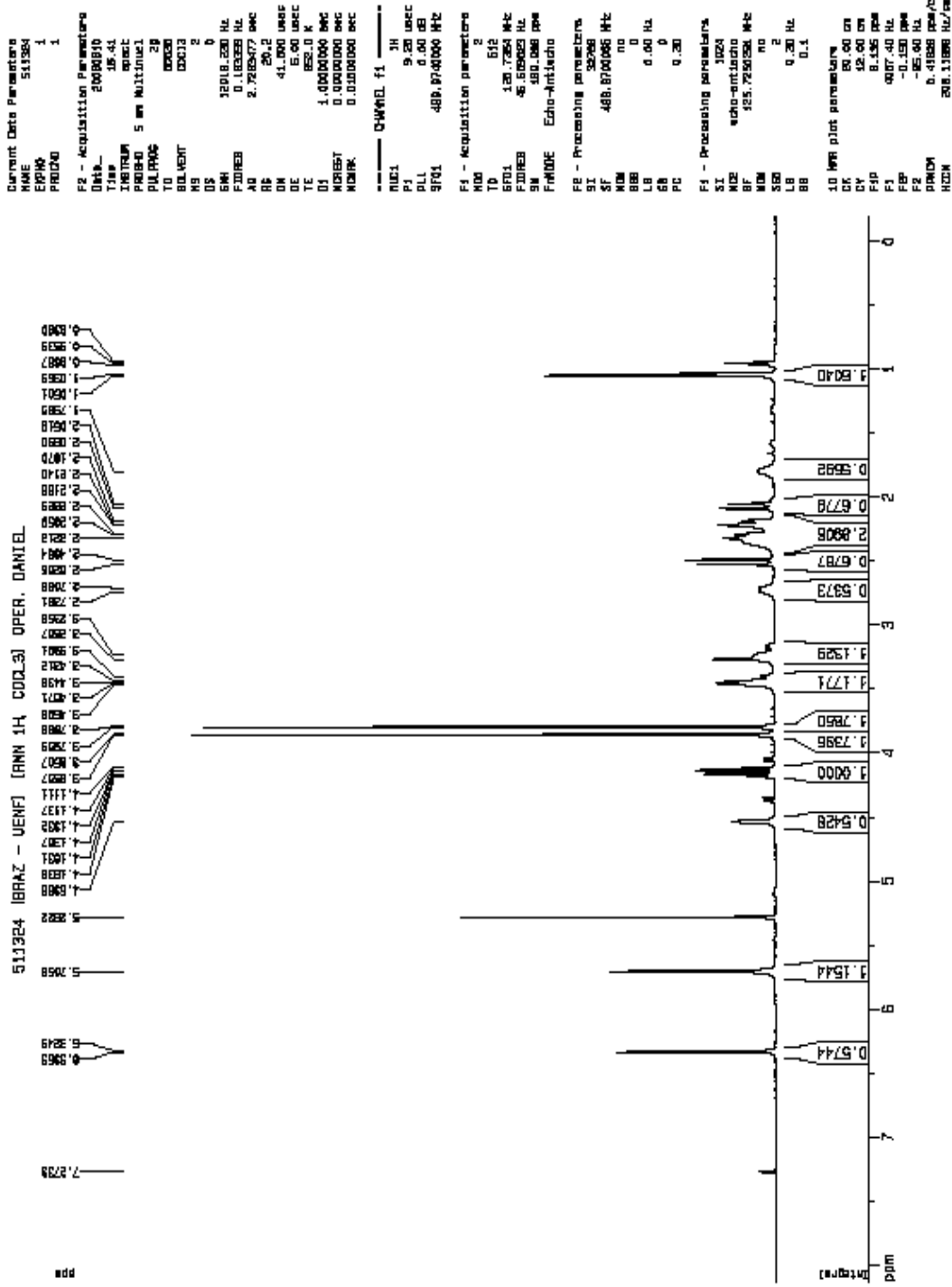
Espectro 123. Mapa de correlação homonuclear ^1H - ^1H -COSY em CDCl_3 da mistura dos alcalóides (-)-aspidolimidina e (-)-fendlerina.

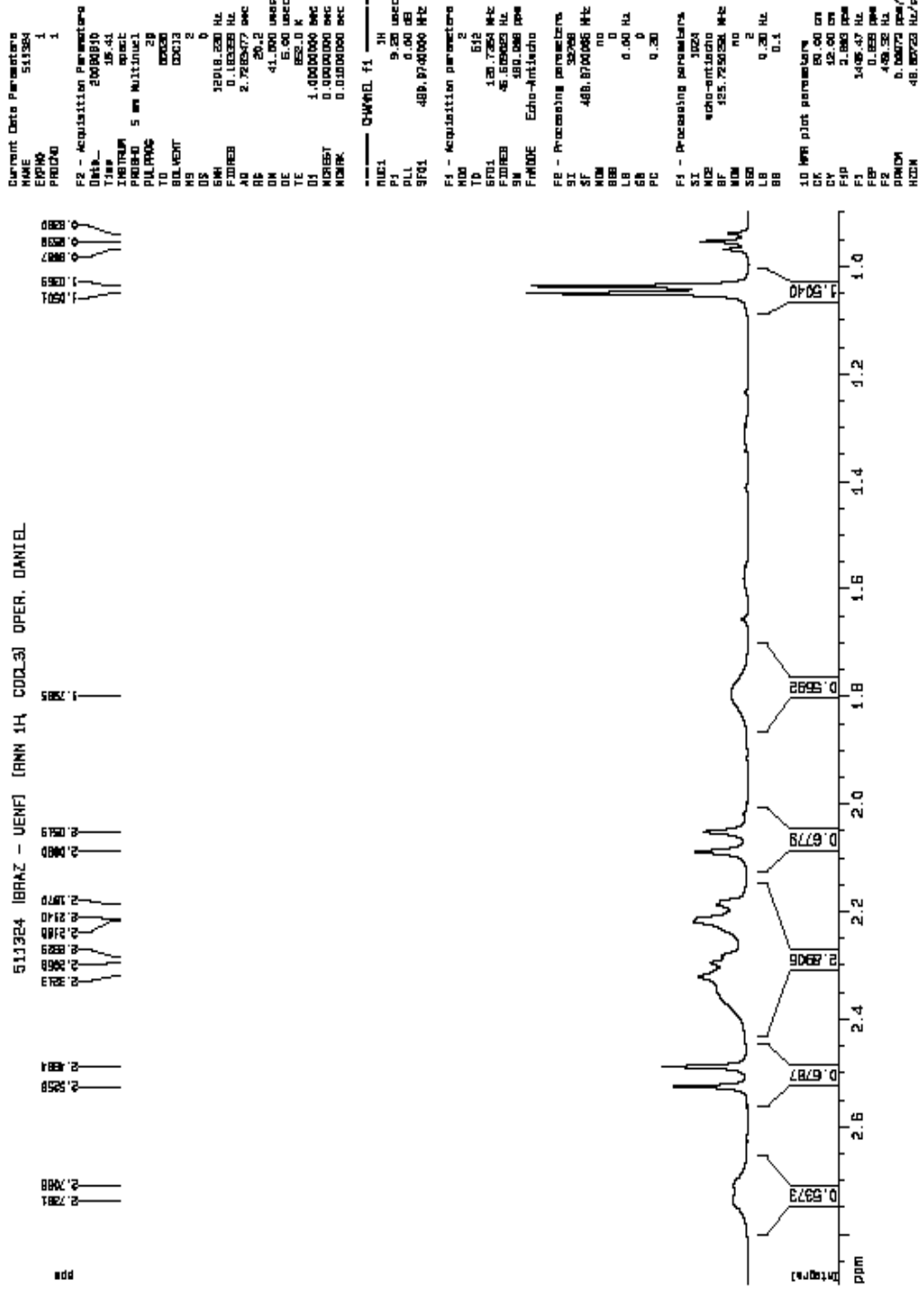


Espectro 124. Ampliação do mapa de correlação homonuclear ¹H-¹H-COSY em CDCl₃ da mistura dos alcalóides (-)-aspidolimidina e (-)-fendlerina.

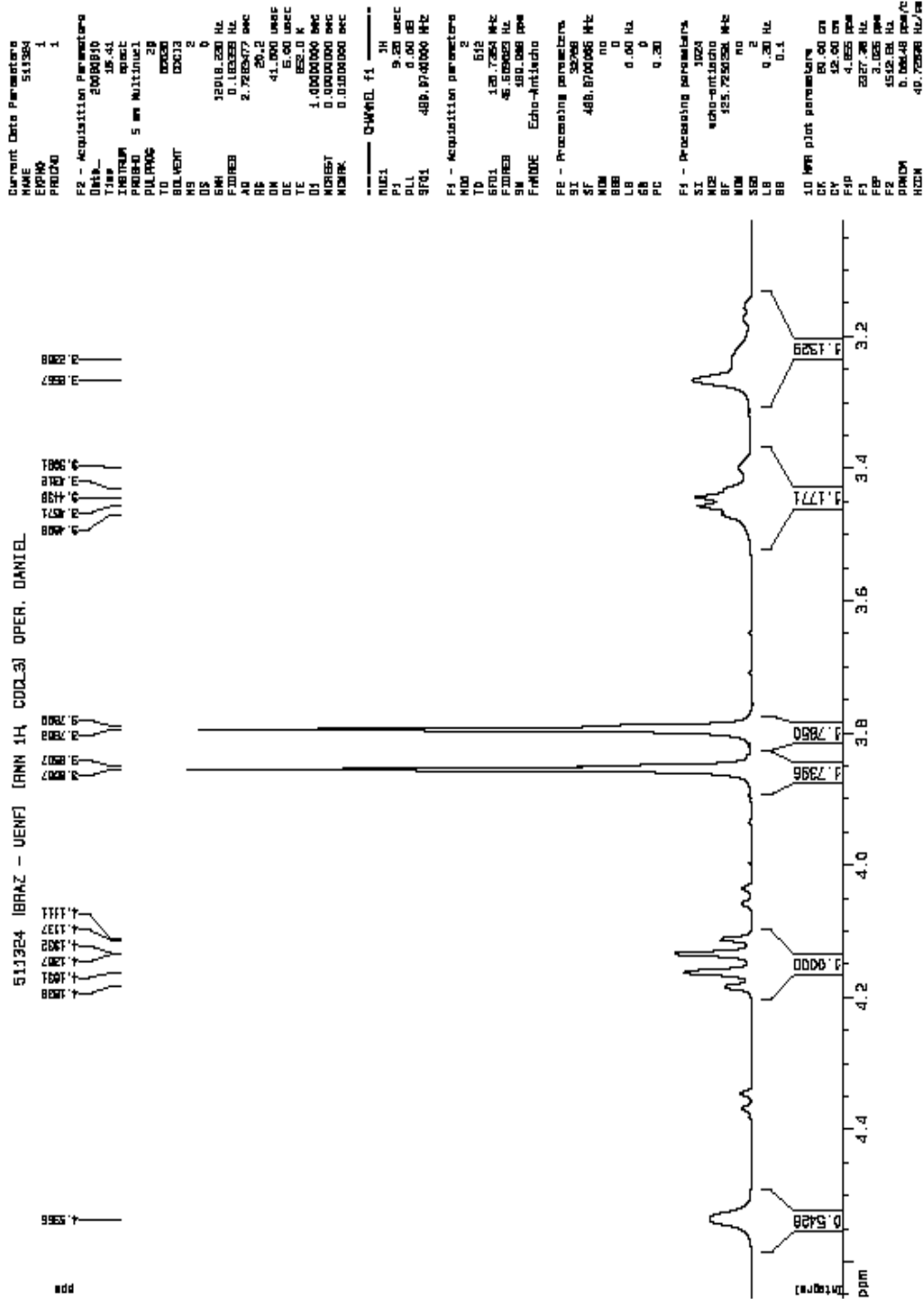


Espectro 125. Espectro de infravermelho da mistura dos alcalóides (-)-obscurinervidina e (-)-obscurinervina.





Espectro 127. Ampliação da região δ_H 0,8-2,7 do espectro de RMN 1H (500 MHz) em $CDCl_3$ da mistura dos alcalóides (-)-obscurinervidina e (-)-obscurinervina.



Espectro 128. Ampliação da região δ_H 3,2-4,5 do espectro de RMN 1H (500 MHz) em $CDCl_3$ da mistura dos alcalóides (-)-obscurinervidina e (-)-obscurinervina.

511324 (BRAZ - UENF) (P1M 13C-BB, CDCL3) OPER. DANIEL

Current Data Parameters
 NAME 511324
 EXPNO 2
 PROCNO 1

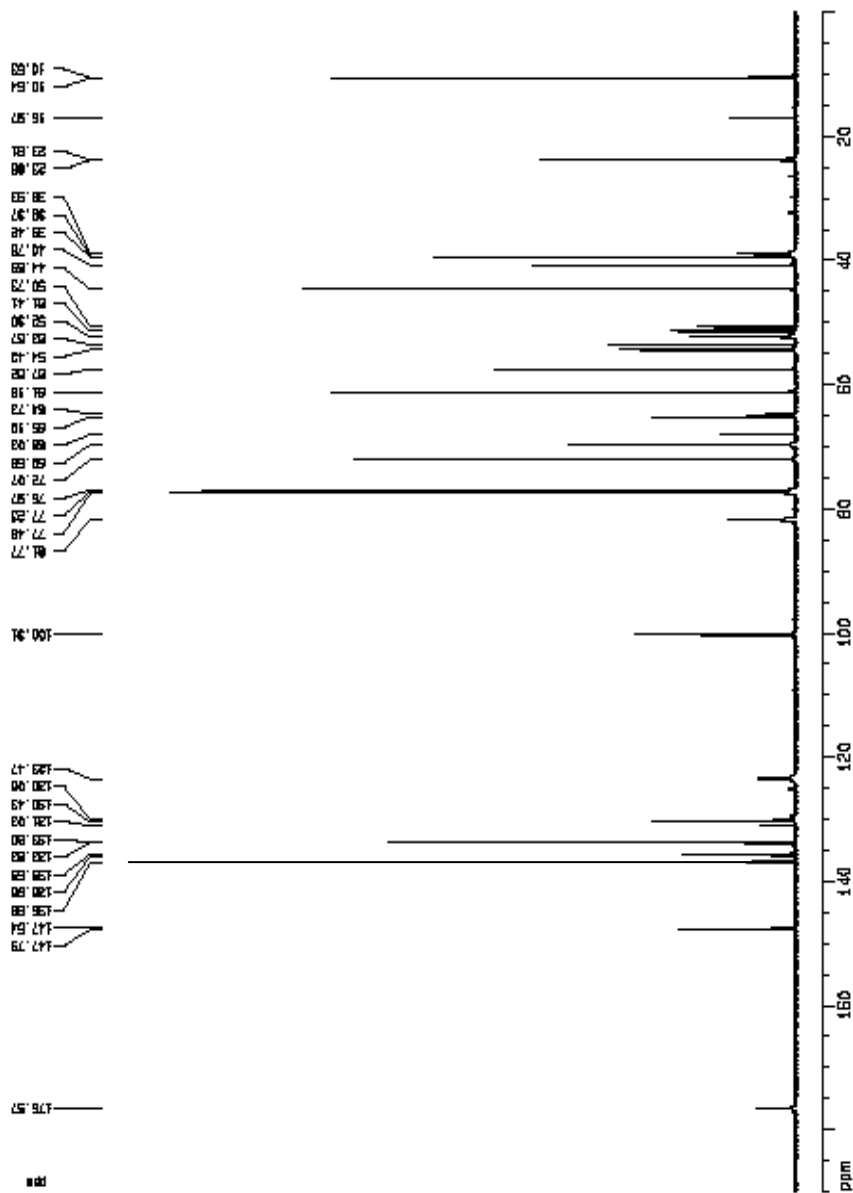
FE - Acquisition Parameters
 Date_ 20080830
 Time 10.00
 INSTRUM spect
 PROSHO 5 mm Multinuc1
 PULPROG zgpg30
 TO SOLVENT CDCl3
 NS 16384
 DS 0
 SWH 30078.790 Hz
 FIDRES 0.977395 Hz
 AQ 0.5014004 sec
 RG 652
 INEPT 10.300 usec
 DE 8.00 usec
 TE 002.0 K
 D4 1.00000000 sec
 d41 0.00000000 sec
 DELTA 0.00000000 sec
 ACQRES 0.00000000 sec
 NSREST 0.00000000 sec
 NSMRK 0.01500000 sec

CHANNEL f1
 NUC1 13C
 P1 14.00 usec
 PL1 0.00 dB
 SFO1 125.7301278 MHz

CHANNEL f2
 CPDPRG2 waltz16
 NUC2 1H
 P2 70.00 usec
 PL2 0.00 dB
 PL12 47.50 dB
 PL13 17.20 dB
 SFO2 499.8700000 MHz

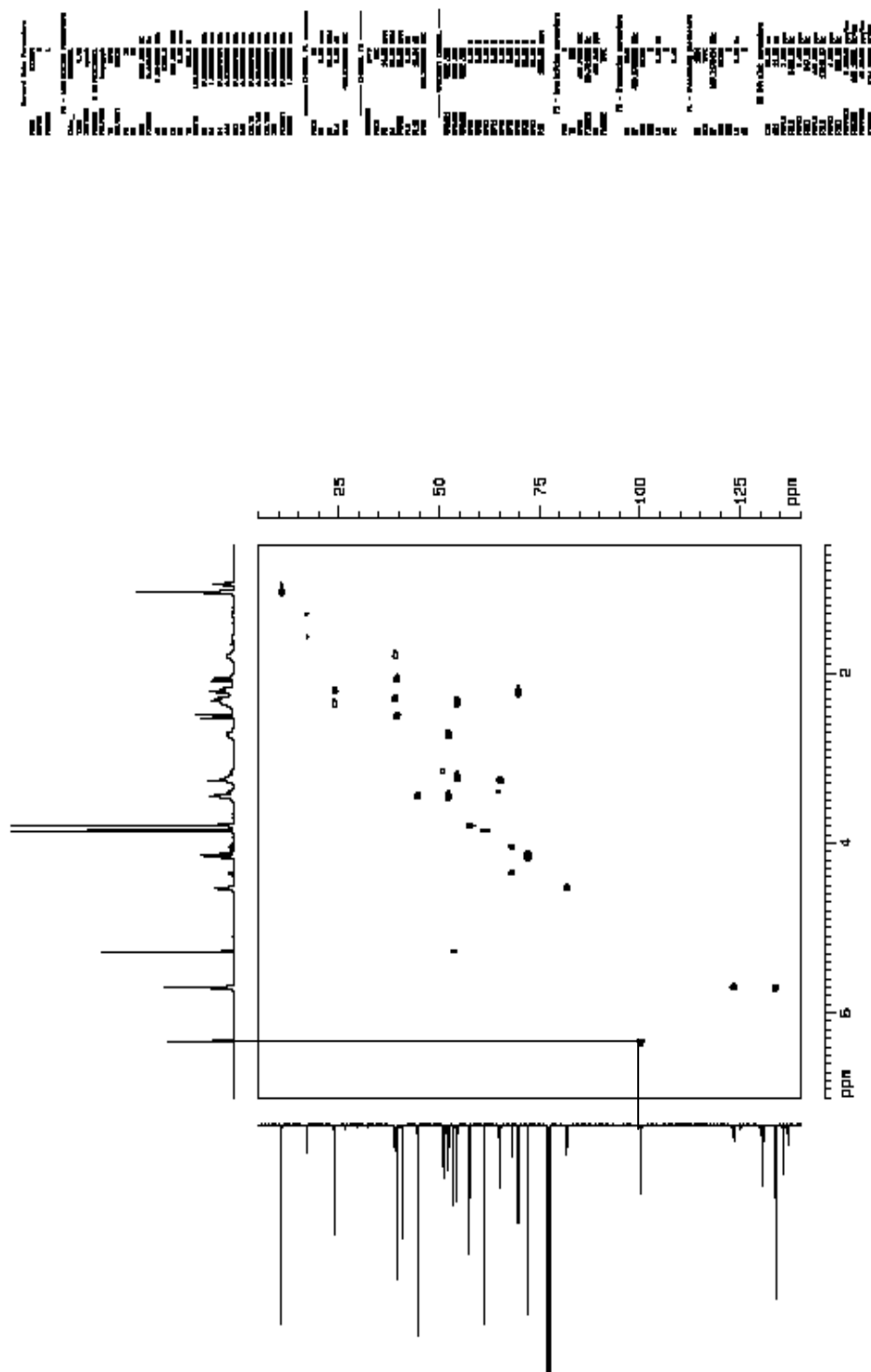
FE - Processing parameters
 SI 32768
 SF 125.7301278 MHz
 KW 65536
 EN 0
 LB 1.00 Hz
 GB 0
 PC 1.40

1D NMR plot parameters
 CK 20.00 cm
 CY 12.00 cm
 FAP 100.000 ppm
 F1 20000.00 Hz
 F2 0.000 ppm
 F3 0.00 Hz
 PRGNTN 81.00000 ppm/s
 HZCN 4194.31628 Hz/cm

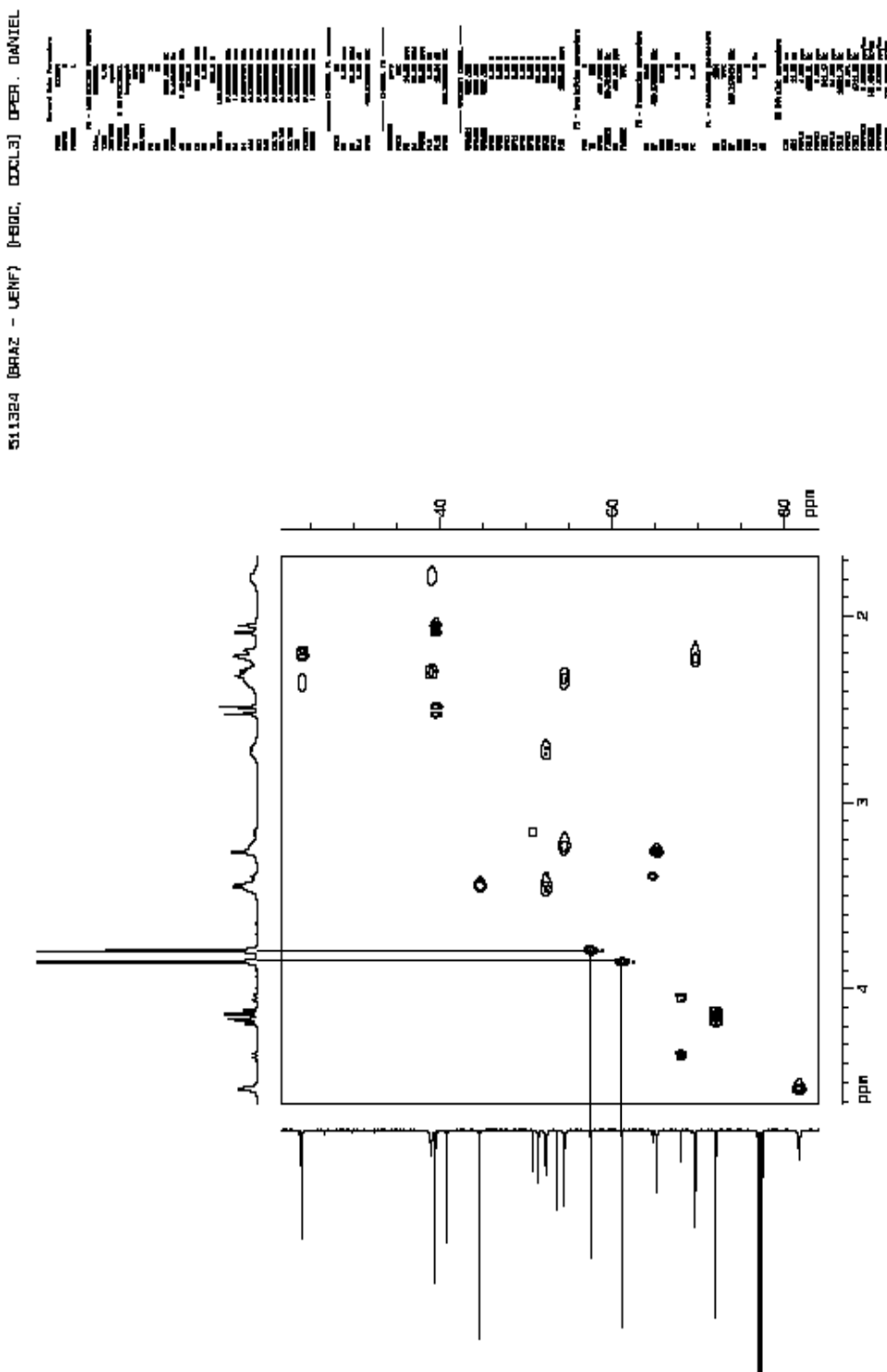


Espectro 129. Espectro de RMN de ¹³C (125 MHz) em CDCl₃ da mistura dos alcalóides (-)-obscurinervina e (-)-obscurinervina.

511324 (BRAZ - UENF) [F5QC, CDCL3] OPER. DANIEL

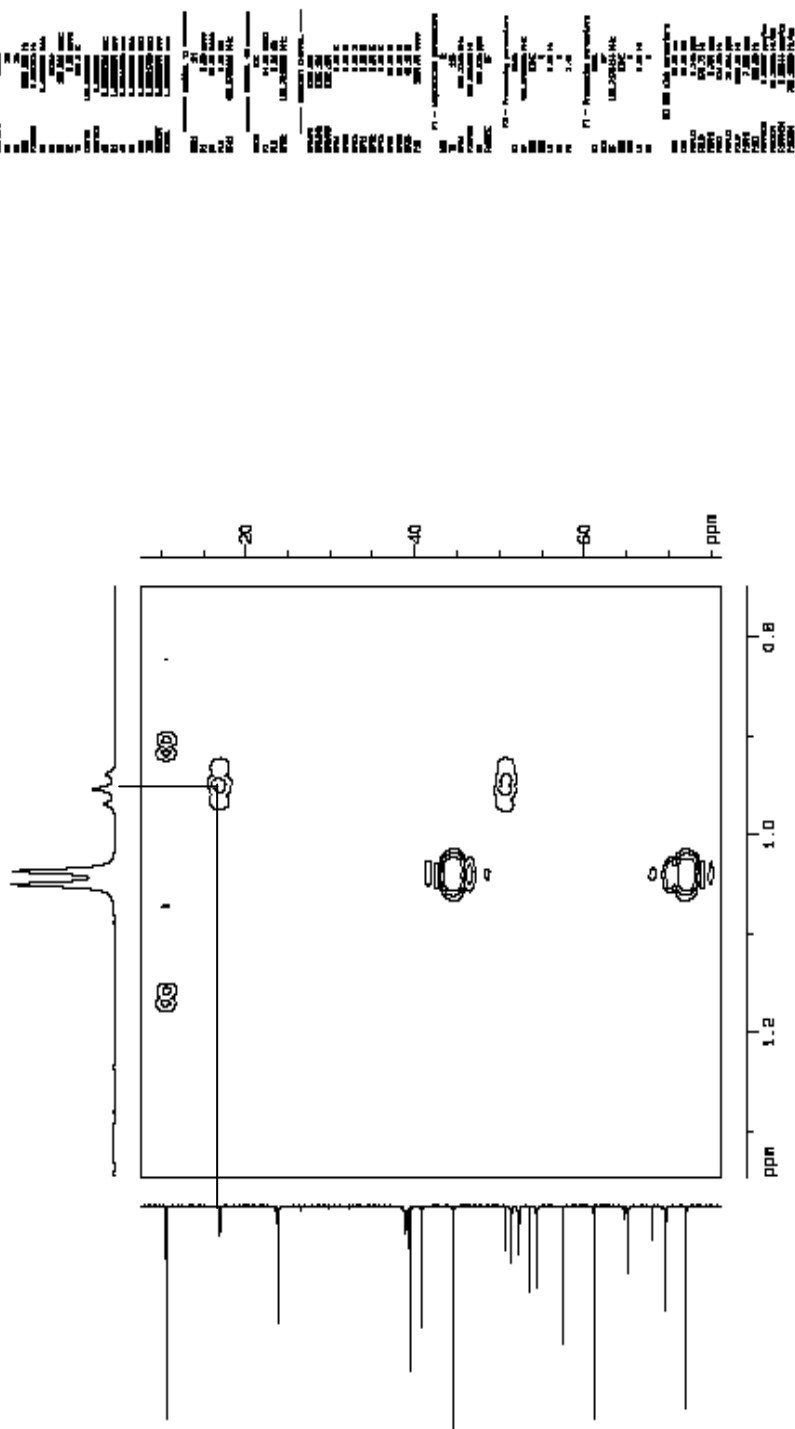


Espectro 130. Mapa de correlação heteronuclear HSQC em CDCl₃ da mistura dos alcalóides (-)-obscurinervidina e (-)-obscurinervina.

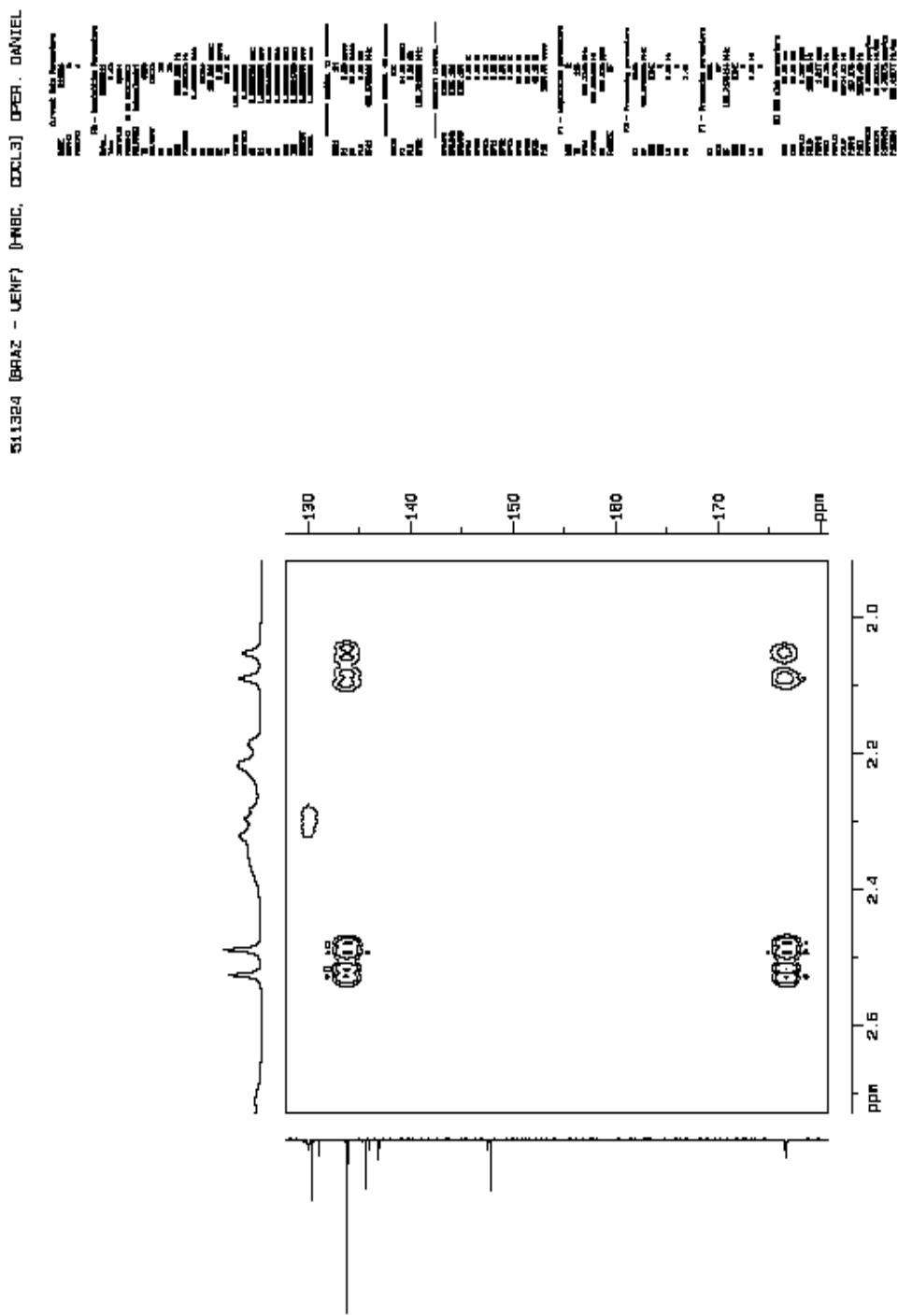


Espectro 131. Ampliação do mapa de correlação heteronuclear HSQC em CDCl_3 da mistura dos alcalóides (-)-obscurinervina e (-)-obscurinervina.

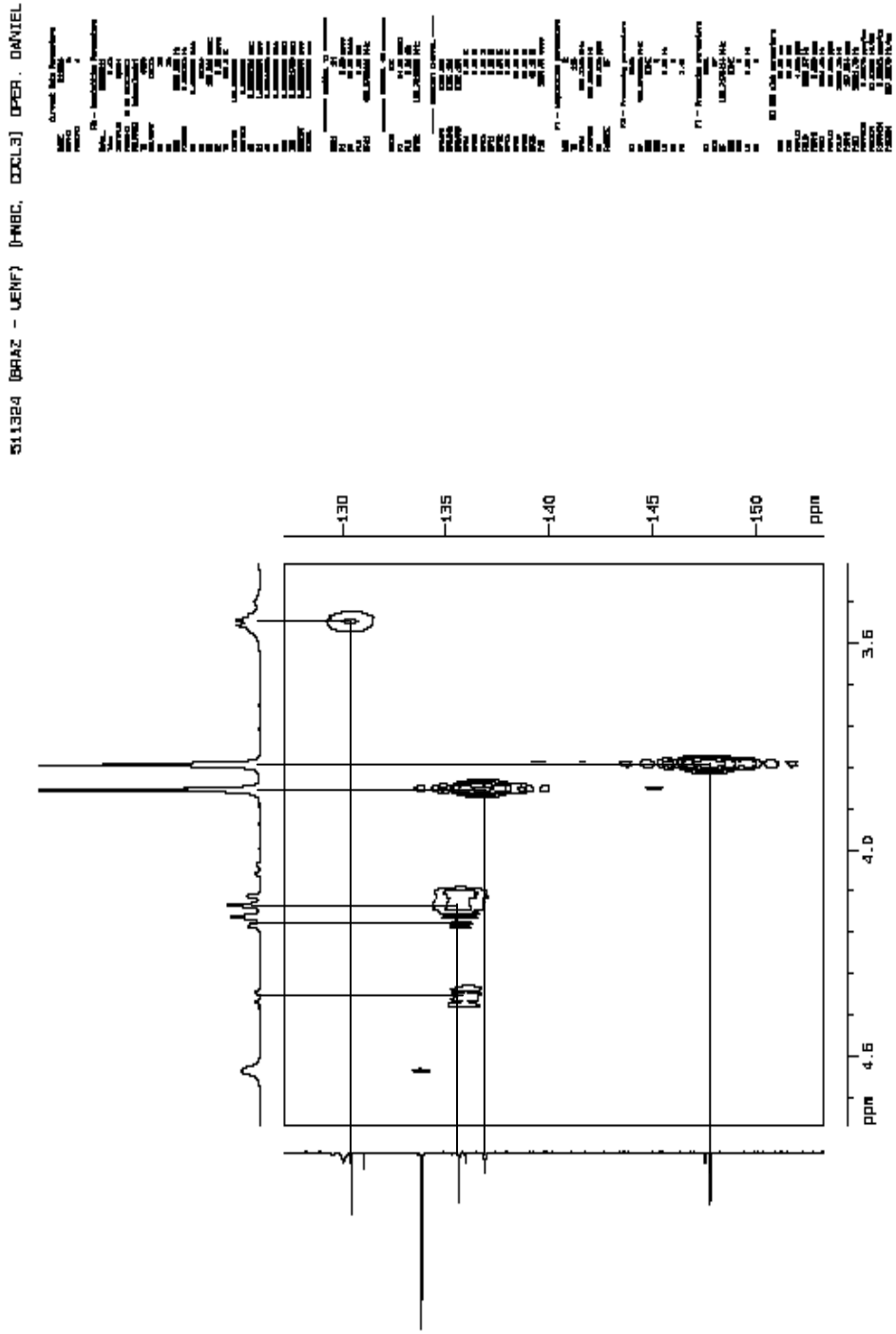
511324 (BRAZ - UENF) (HMBC, CDCL3) OPER. DANIEL



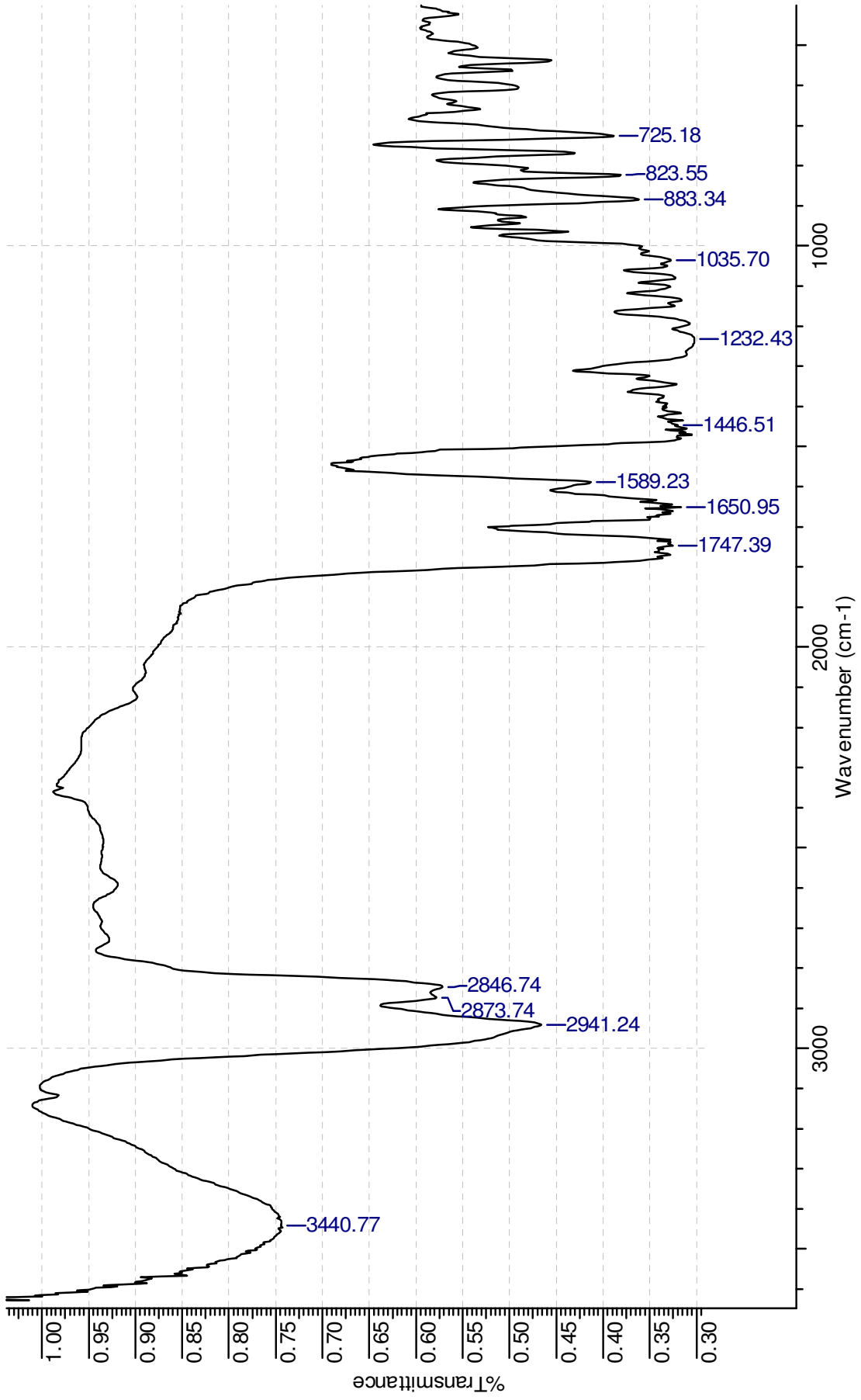
Espectro 134. Ampliação do mapa de correlação heteronuclear HMBC em CDCl_3 da mistura dos alcalóides (-)-obscurinervidina e (-)-obscurinervina.



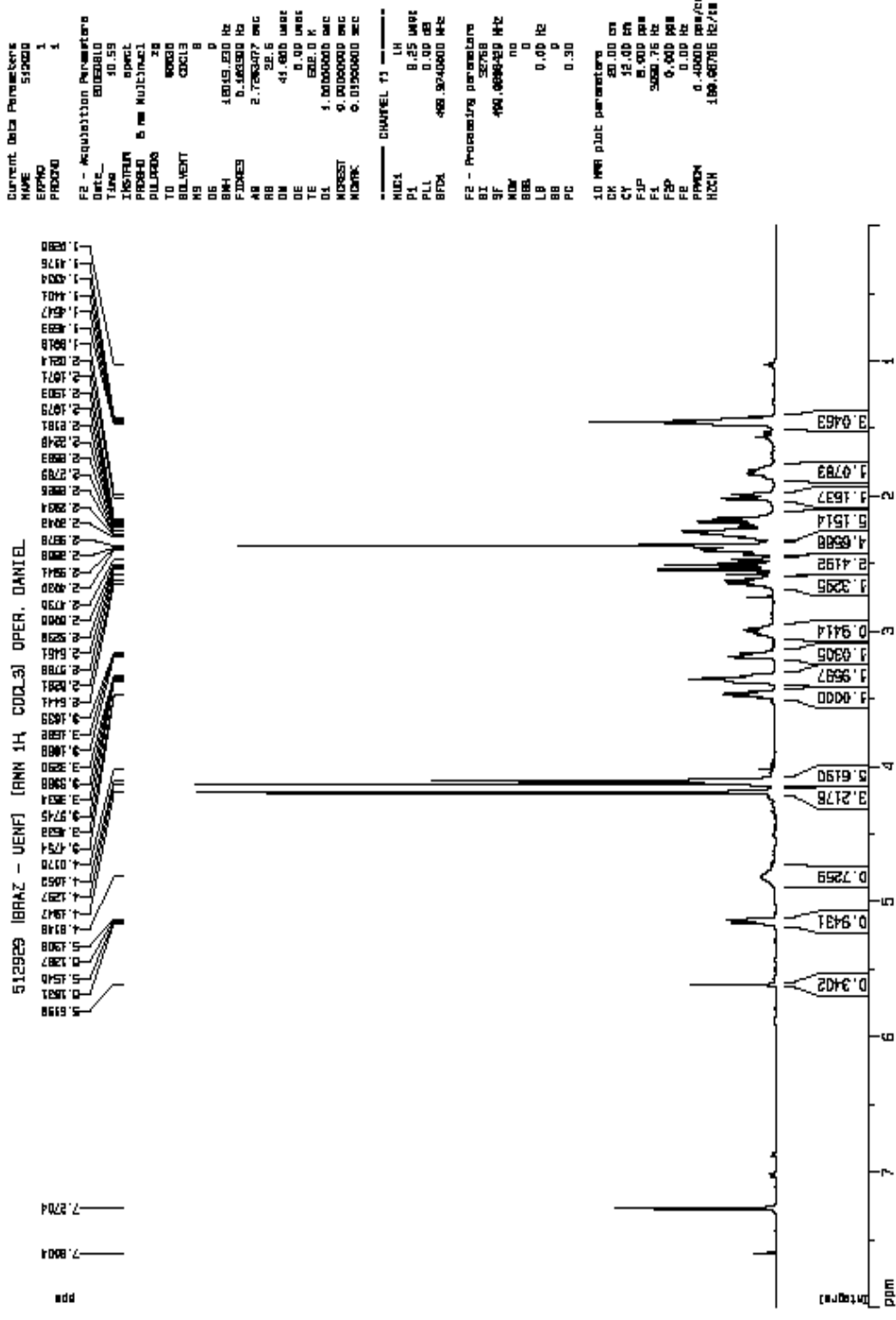
Espectro 135. Ampliação do mapa de correlação heteronuclear HMBC em CDCl₃ da mistura dos alcalóides (-)-obscurinerivina e (-)-obscurinerivina.



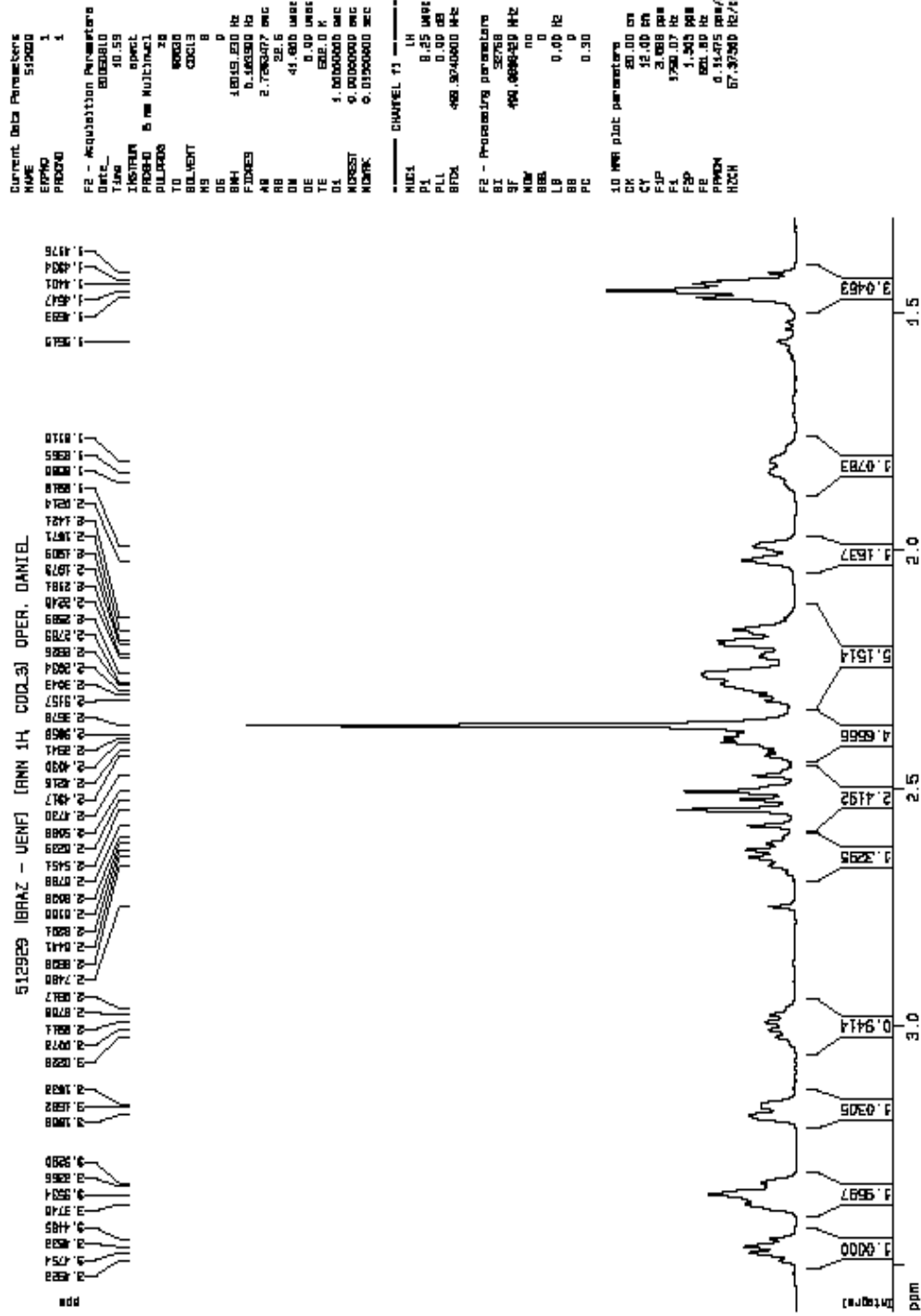
Espectro 136. Ampliação do mapa de correlação heteronuclear HMBC em CDCl₃ da mistura dos alcalóides (-)-obscurinervina e (-)-obscurinervina.



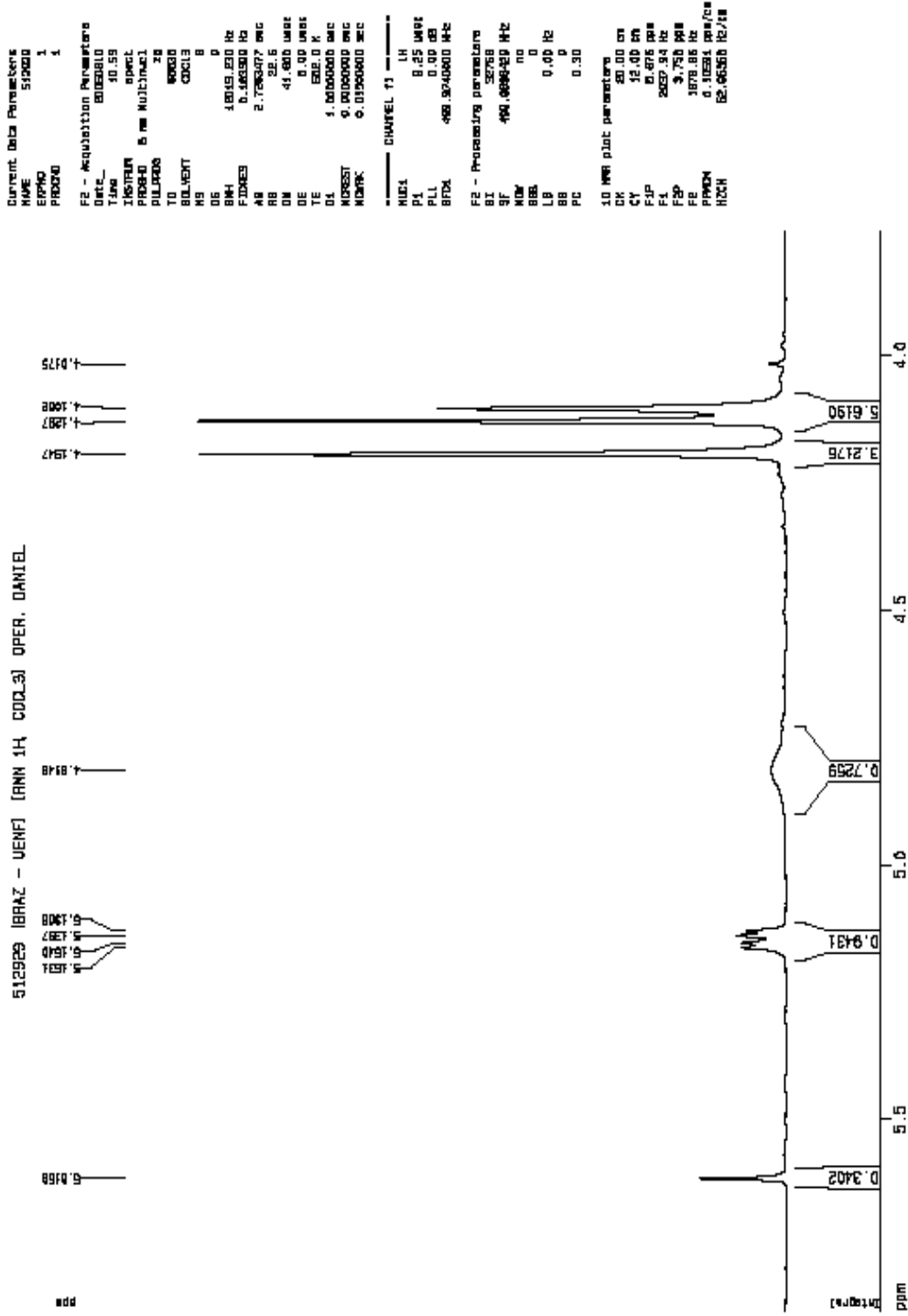
Espectro 141. Espectro de infravermelho da mistura dos alcalóides spruceanumina C e spruceanumina D.



Espectro 142. Espectro de RMN ¹H (500 MHz) em CDCl₃ da mistura dos alcalóides spruceanumina C e spruceanumina D.



Espectro 143. Ampliação da região δ_H 1,4-3,5 do espectro de RMN 1H (500 MHz) em $CDCl_3$ da mistura dos alcalóides spruceanumina C e spruceanumina D.



Espectro 144. Ampliação da região δ_H 4,0-5,7 do espectro de RMN 1H (500 MHz) em $CDCl_3$ da mistura dos alcalóides spruceanumina C e spruceanumina D.

512929 [BRAZ - UENF] [PNN 13C-BB, CDCL3] OPER. DANIEL

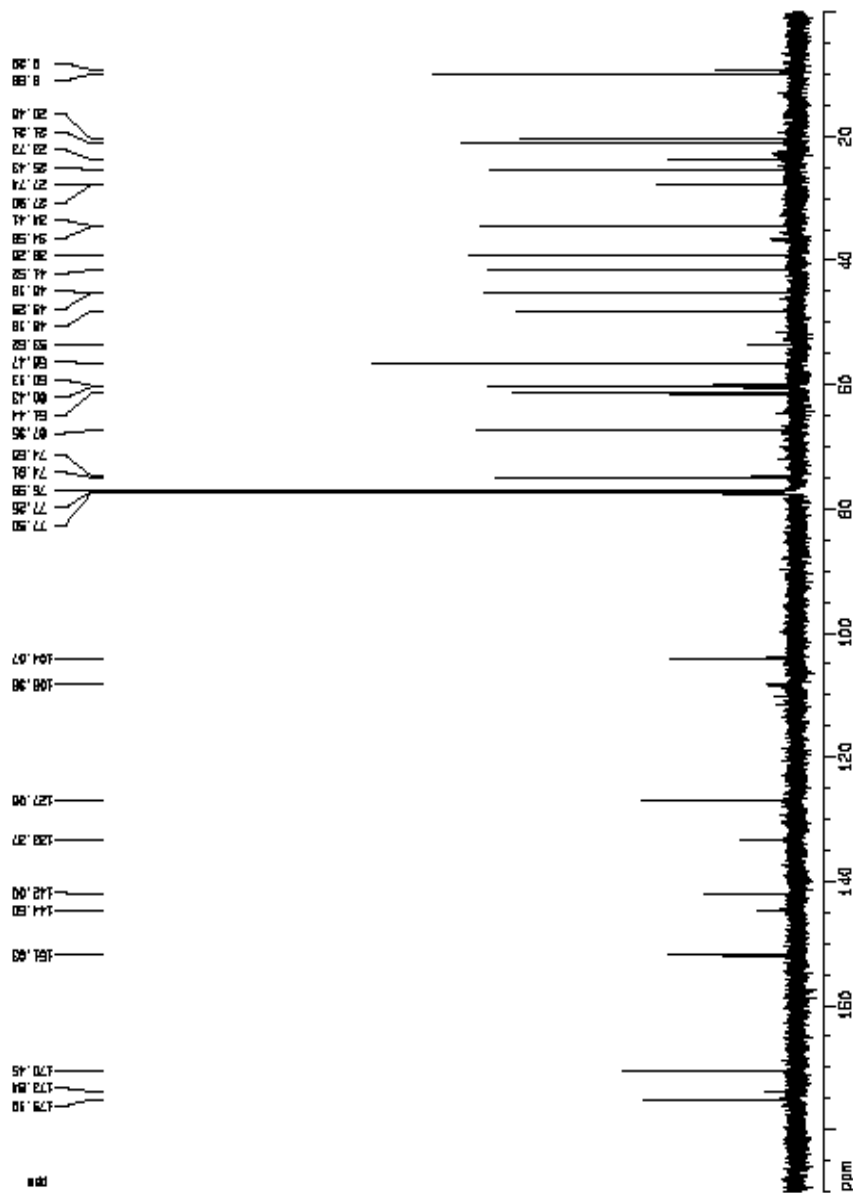
Current Data Parameters
 NAME 512929
 EXPNO 2
 PROCNO 1

FE - Acquisition Parameters
 Date_ 20080810
 Time 12:10
 INSTRUM spect
 PROBR4 5 mm Multinuc1
 PULPROG zgpg30
 TO SOLVENT CDCl3
 NS 1024
 DS 0
 SWH 20747.273 Hz
 FIDRES 0.553061 Hz
 AQ 0.7200000 sec
 RG 6582
 INCR 8.00 uMHC
 DE 28.000 uMHC
 TE 300.2 K
 D4 1.00000000 sec
 d41 0.00000000 sec
 DELTA 0.00000000 sec
 ACQRES 0.00000000 sec
 NSREST 0.00000000 sec
 NSMRK 0.01500000 sec

CHANNEL f1
 NUC1 13C
 P1 14.00 uMHC
 PL1 0.00 dB
 SFO1 125.7628017 MHz

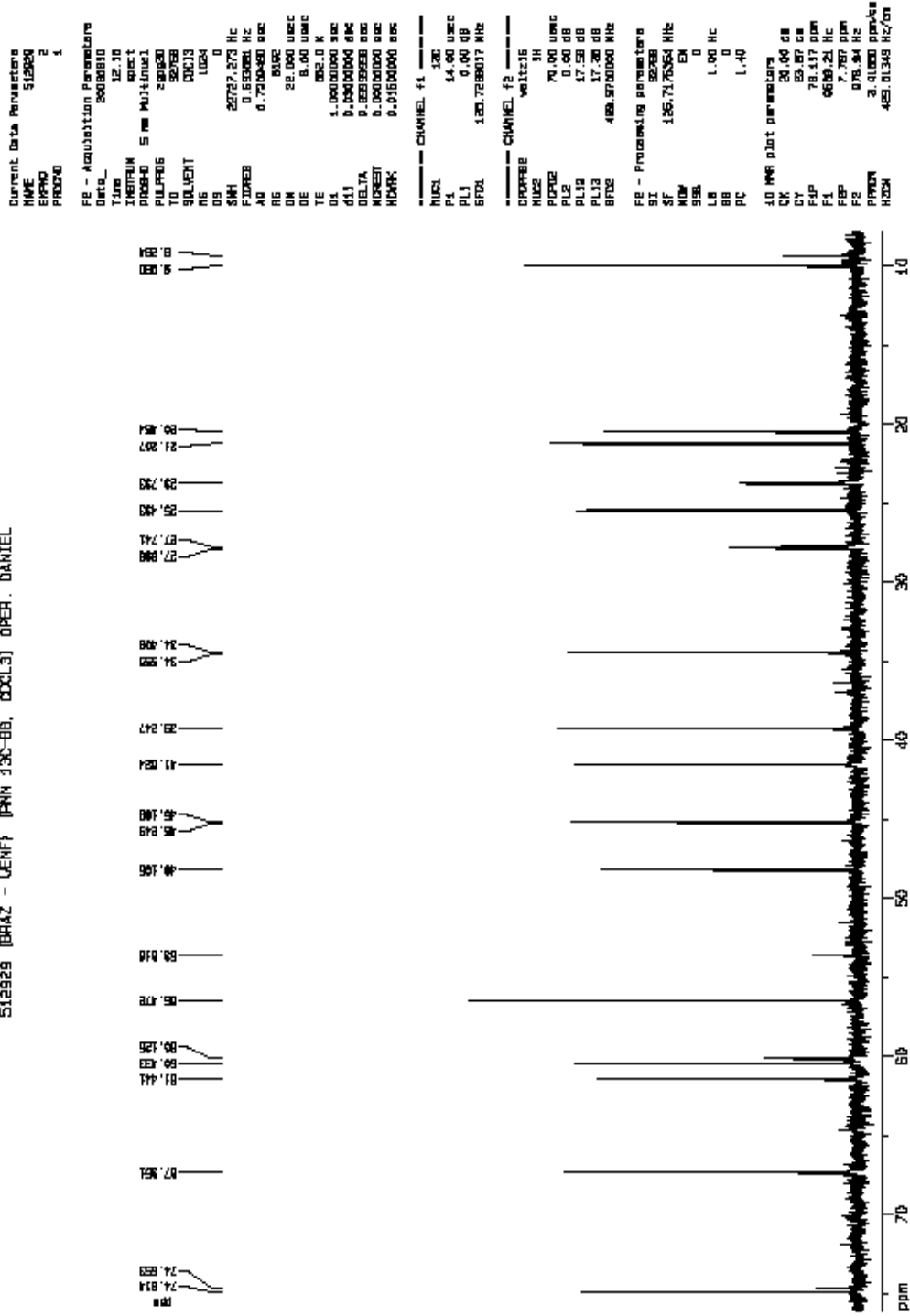
CHANNEL f2
 PROPR2 waltz16
 NUC2 1H
 P2 70.00 uMHC
 PL2 0.00 dB
 P3 47.50 dB
 PL3 17.20 dB
 SFO2 400.5700000 MHz

FE - Processing parameters
 SI 32768
 SF 125.7628017 MHz
 KW 0
 EN 0
 LB 1.00 Hz
 GB 0
 PC 1.40
 ID MR plot parameters
 CK 20.00 dB
 CY 50.00 dB
 FAP 100.000 dBm
 F1 200MHz 30 Hz
 F2 0.000 dBm
 F3 0.00 Hz
 PRGNT 0.00000000 sec
 HSCN 4194.31628 Hz/cyc



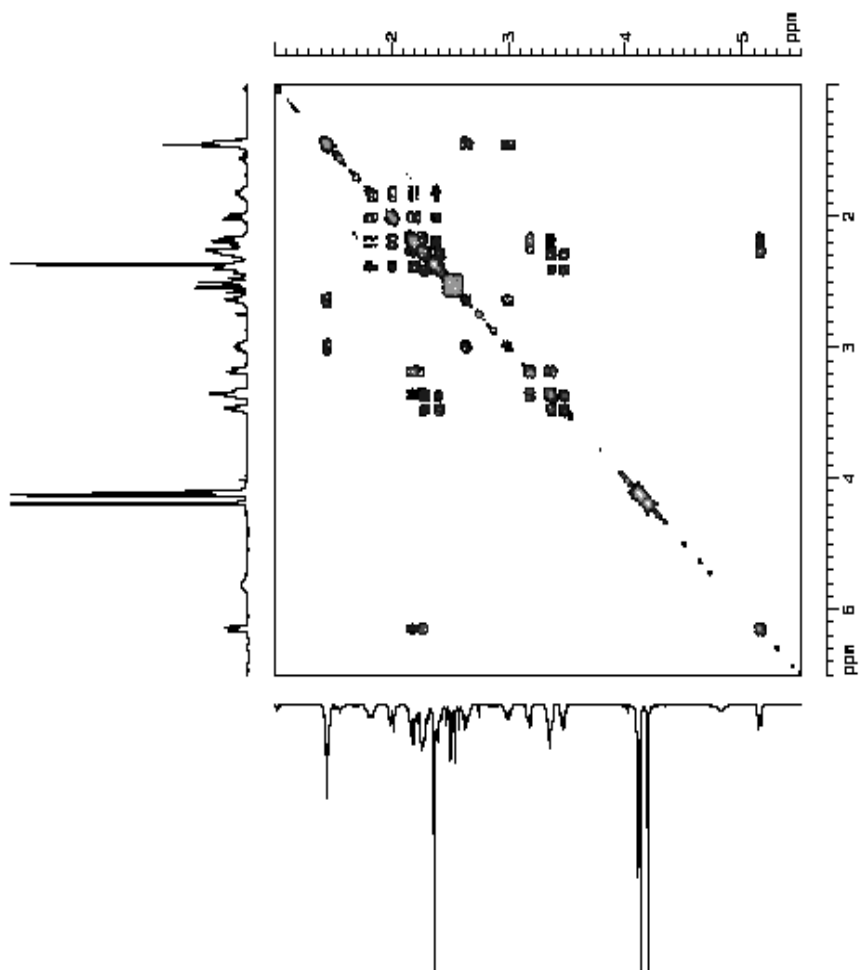
Espectro 145. Espectro de RMN ¹³C (125 MHz) em CDCl₃ da mistura dos alcalóides spruceanumina C e spruceanumina D.

512929 [BRAZ - UENF] [PNN 13C-BB, CDCL3] OPER. DANIEL



Espectro 146. Ampliação da região δ_c 0,8-74 do espectro de RMN ^{13}C (125 MHz) em CDCl_3 da mistura dos alcalóides spruceanumina C e spruceanumina D.

518928 (BRAZ - UENF) (COBY, CDCL3) OPER. DANIEL

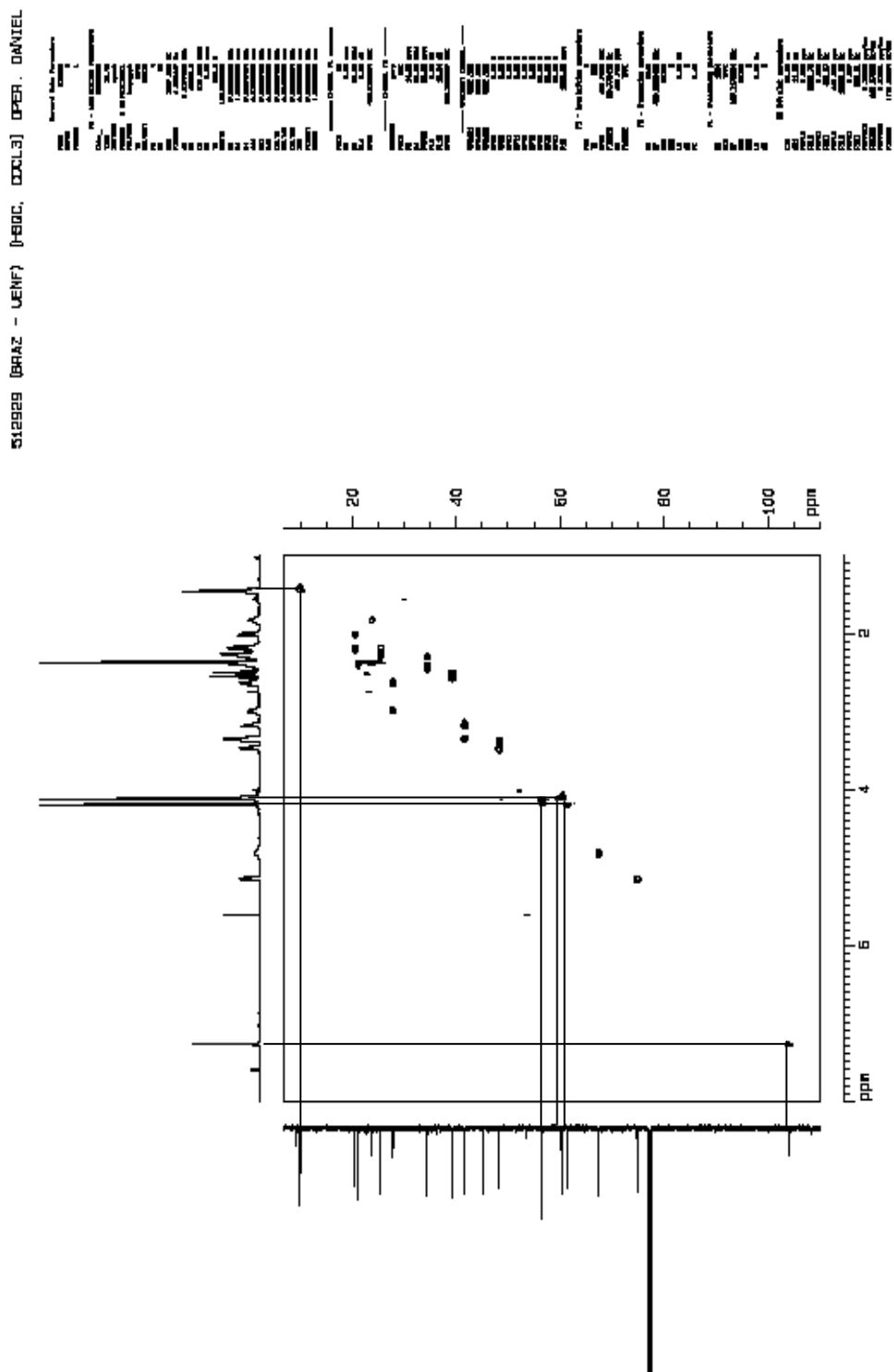


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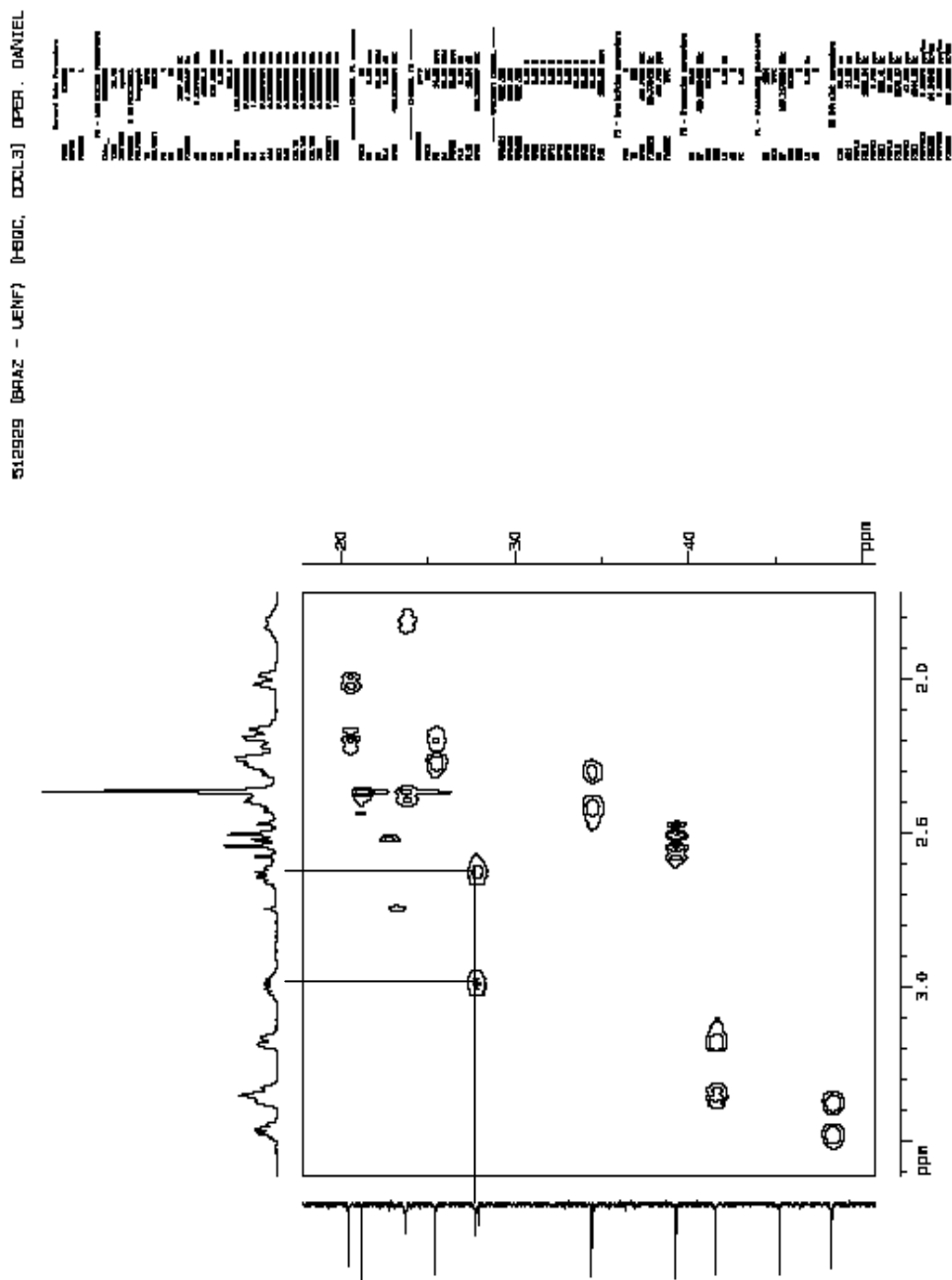
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EXPNO: 1
PROCNO: 1
PROCNAME:
DATE_UTC:
TIME:
INSTRUM: spect
PROBHD:
PULPROG: zgpg30
TD: 65536
SOLVENT: CDCL3
AQ: 0.10000000
RG: 327.50000000
AQ2: 0.05000000
RG2: 327.50000000
RG3: 327.50000000
AQ3: 0.05000000
RG4: 327.50000000
AQ4: 0.05000000
RG5: 327.50000000
AQ5: 0.05000000
RG6: 327.50000000
AQ6: 0.05000000
RG7: 327.50000000
AQ7: 0.05000000
RG8: 327.50000000
AQ8: 0.05000000
RG9: 327.50000000
AQ9: 0.05000000
RG10: 327.50000000
AQ10: 0.05000000
RG11: 327.50000000
AQ11: 0.05000000
RG12: 327.50000000
AQ12: 0.05000000
RG13: 327.50000000
AQ13: 0.05000000
RG14: 327.50000000
AQ14: 0.05000000
RG15: 327.50000000
AQ15: 0.05000000
RG16: 327.50000000
AQ16: 0.05000000
RG17: 327.50000000
AQ17: 0.05000000
RG18: 327.50000000
AQ18: 0.05000000
RG19: 327.50000000
AQ19: 0.05000000
RG20: 327.50000000
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RG21: 327.50000000
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RG22: 327.50000000
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RG25: 327.50000000
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=====

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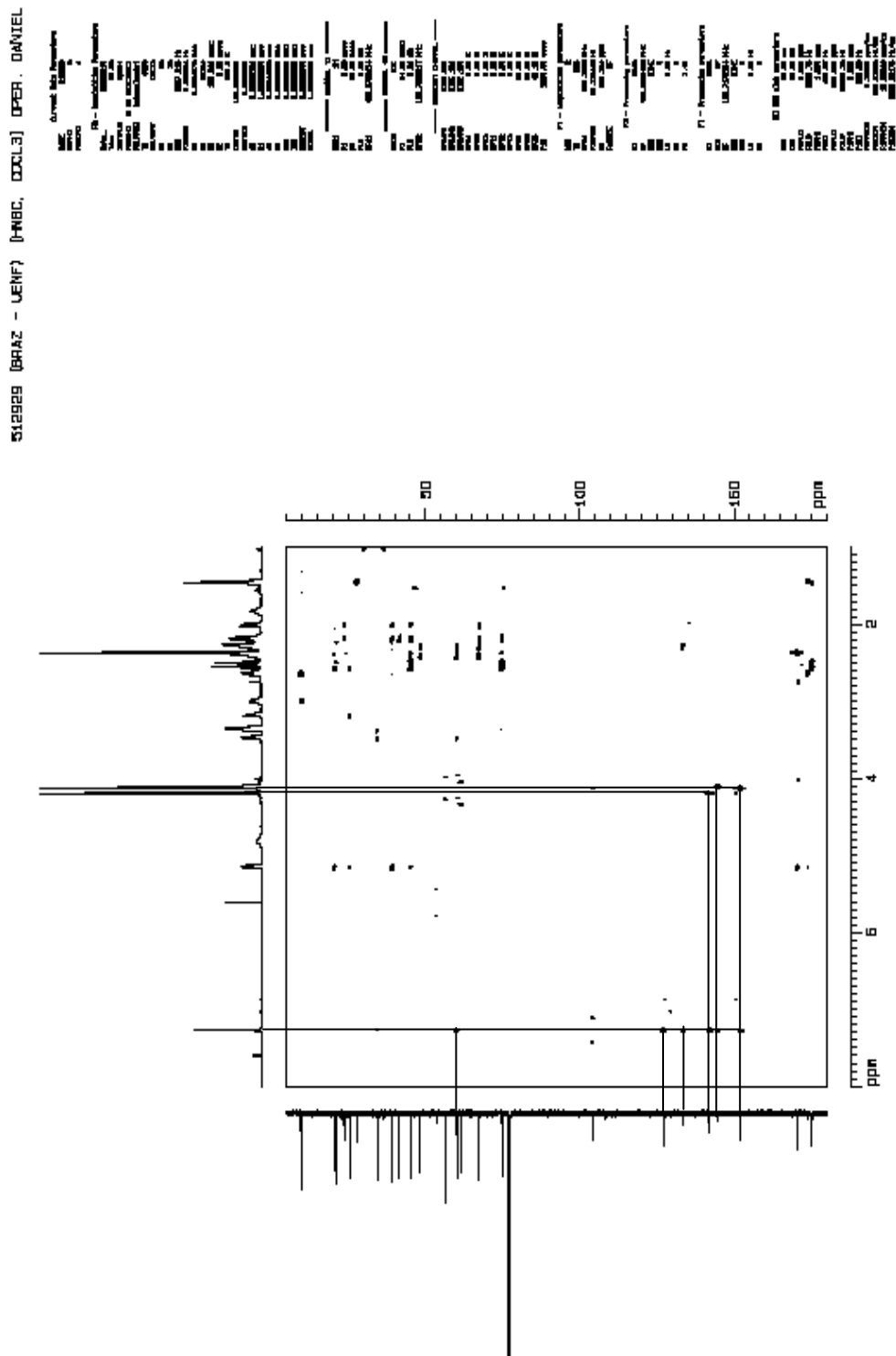
Espectro 148. Mapa de correlação homonuclear ¹H-¹H-COSY em CDCl₃ da mistura dos alcalóides spruceanumina C e spruceanumina D.



Espectro 150. Mapa de correlação heteronuclear HSQC em $CDCl_3$ da mistura dos alcalóides spruceanumina C e spruceanumina D.

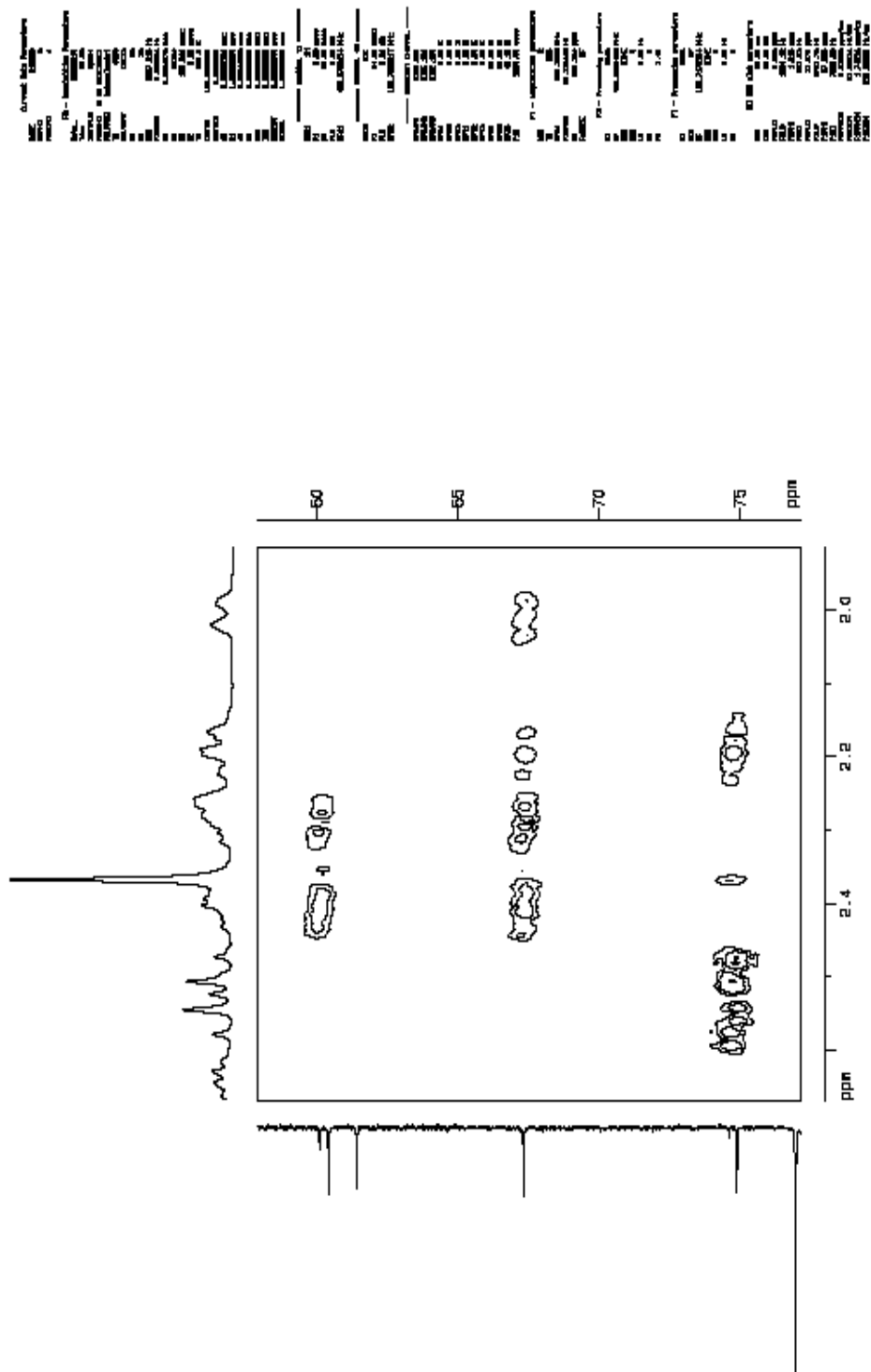


Espectro 151. Ampliação do mapa de correlação heteronuclear HSQC em CDCl_3 da mistura dos alcalóides spruceanumina C e spruceanumina D.

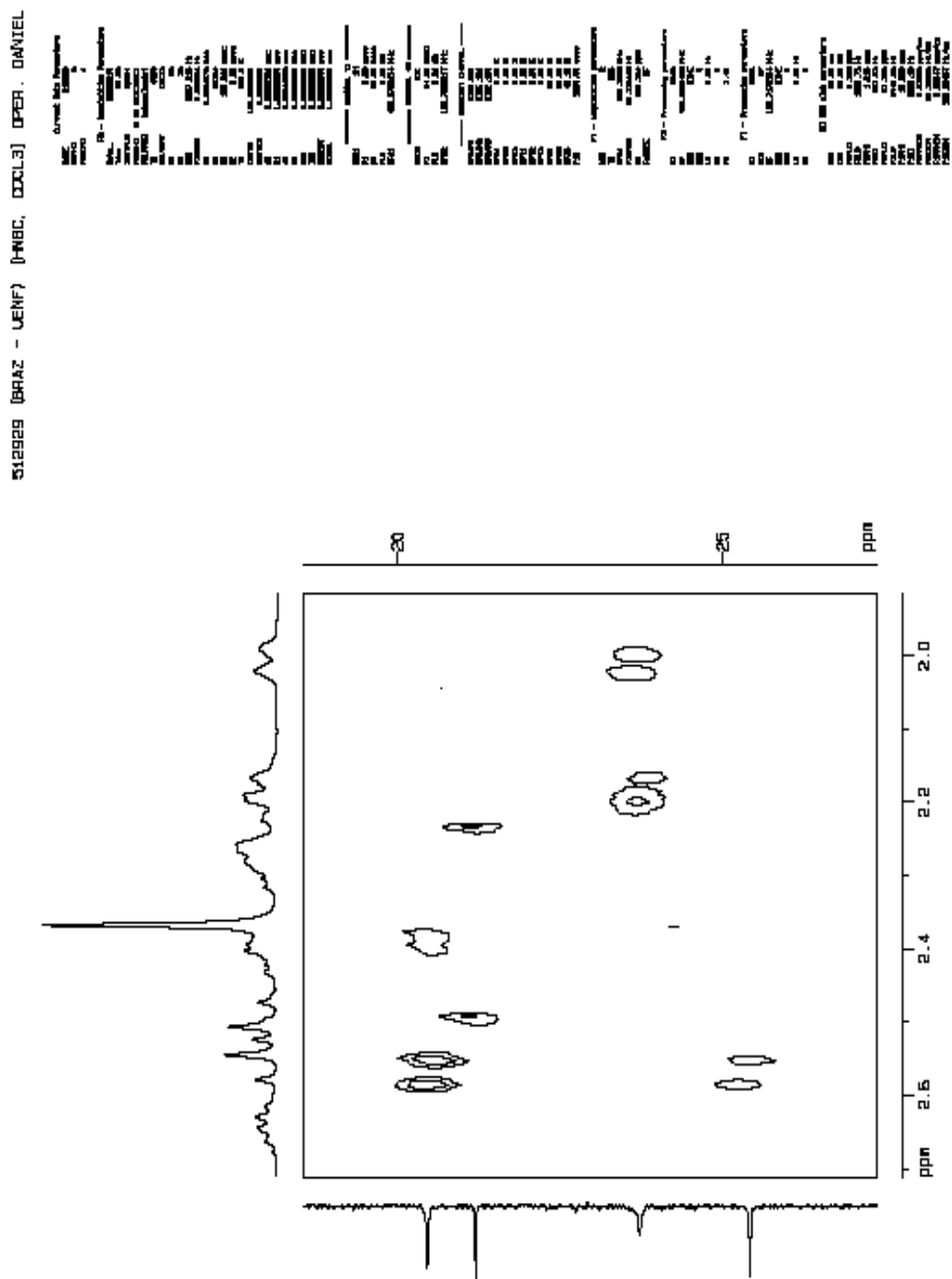


Espectro 152. Mapa de correlação heteronuclear HMBC em CDCl₃ da mistura dos alcalóides spruceanumina C e spruceanumina D.

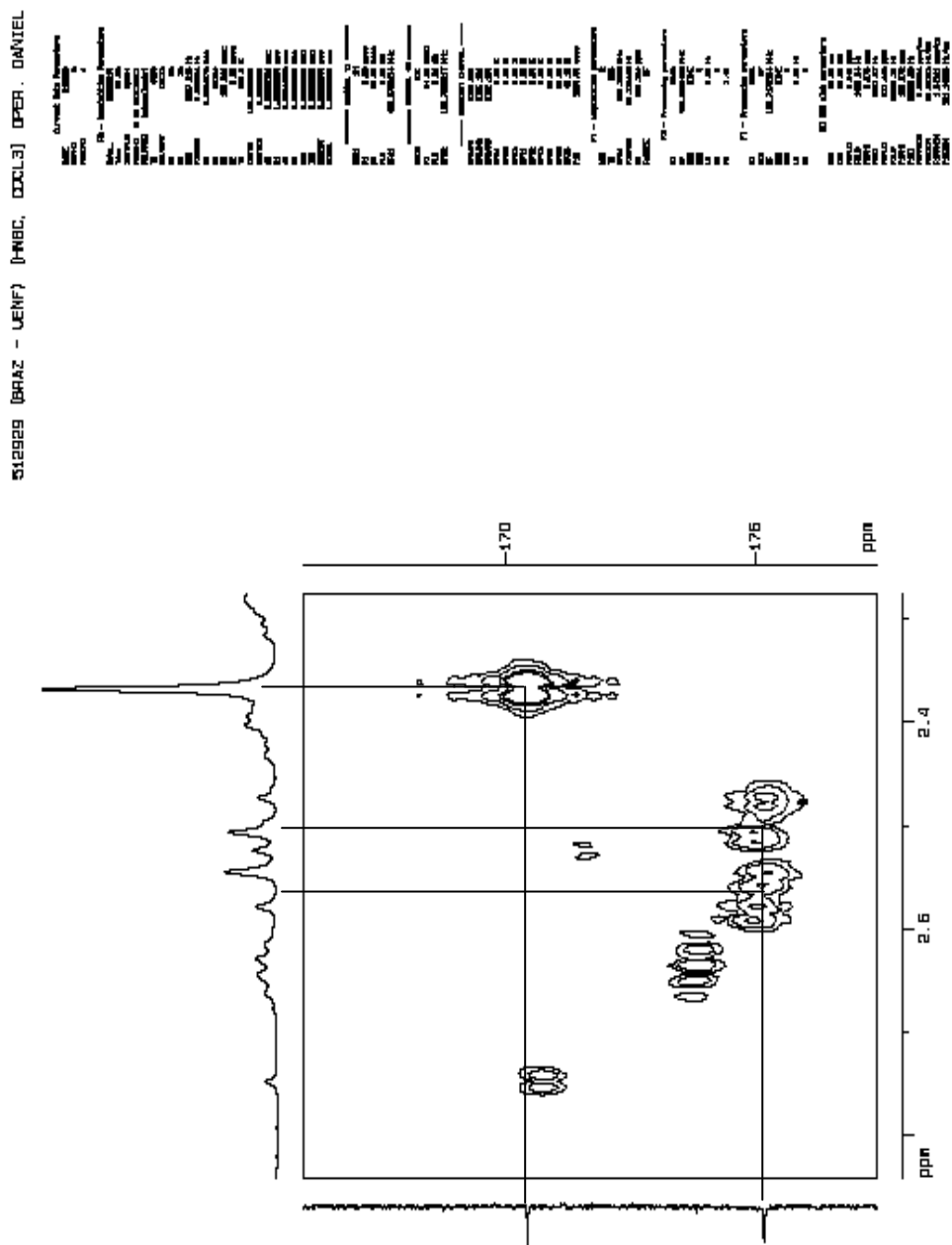
512929 (BRAZ - UENF) [HMBC, CDCl3] OPER. DANIEL



Espectro 153. Ampliação do mapa de correlação heteronuclear HMBC em CDCl₃ da mistura dos alcalóides spruceanumina C e spruceanumina D.



Espectro 154. Ampliação do mapa de correlação heteronuclear HMBC em CDCl₃ da mistura dos alcalóides spruceanumina C e spruceanumina D.



Espectro 155. Ampliação do mapa de correlação heteronuclear HMBC em CDCl₃ da mistura dos alcalóides spruceanumina C e spruceanumina D.