

UNIVERSIDAD DE SALAMANCA

FACULTAD DE CIENCIAS QUÍMICAS

Departamento de Química Orgánica



**UNIVERSIDAD
DE SALAMANCA**

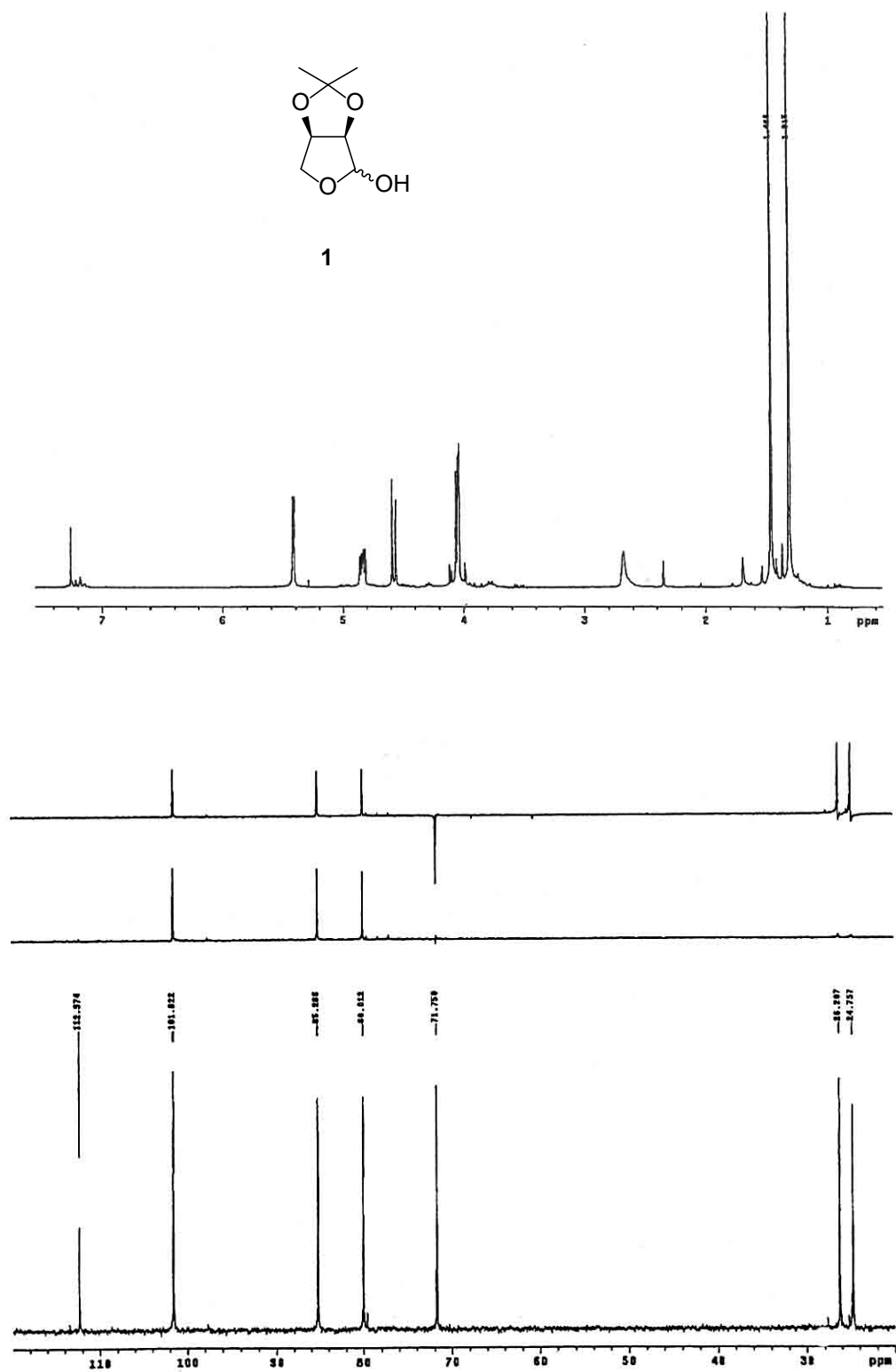
**APLICACIÓN DE LA REACTIVIDAD DE NITRONAS Y SULFONAS
A LA SÍNTESIS DE SISTEMAS PIRROLIDÍNICOS QUIRALES**

MARÍA FE FLORES PABLOS

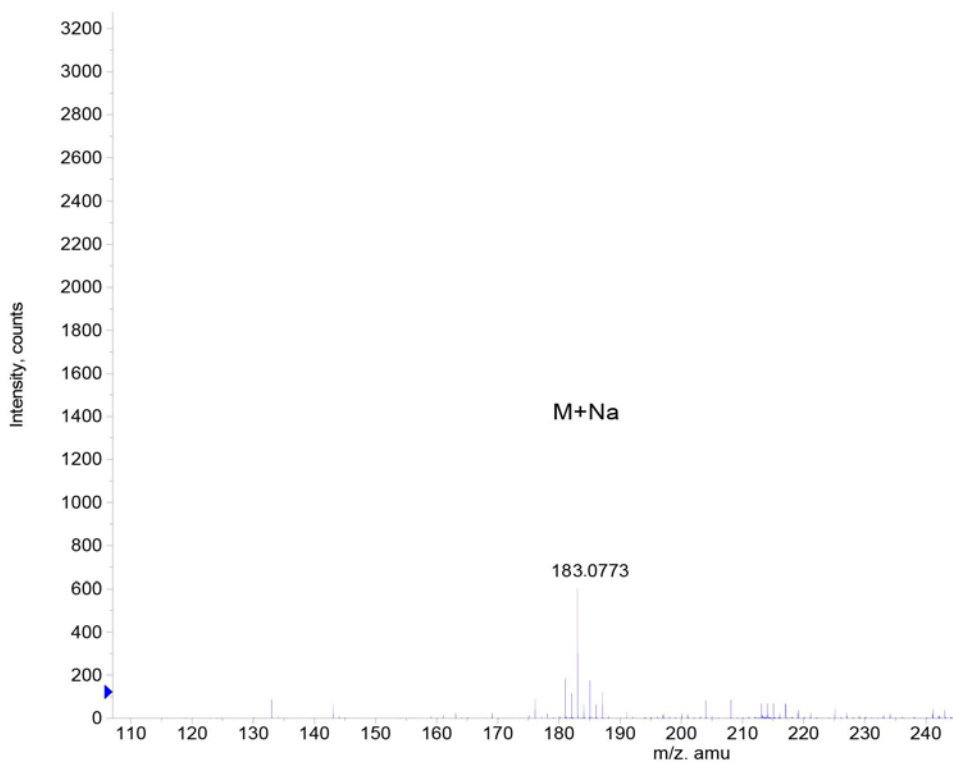
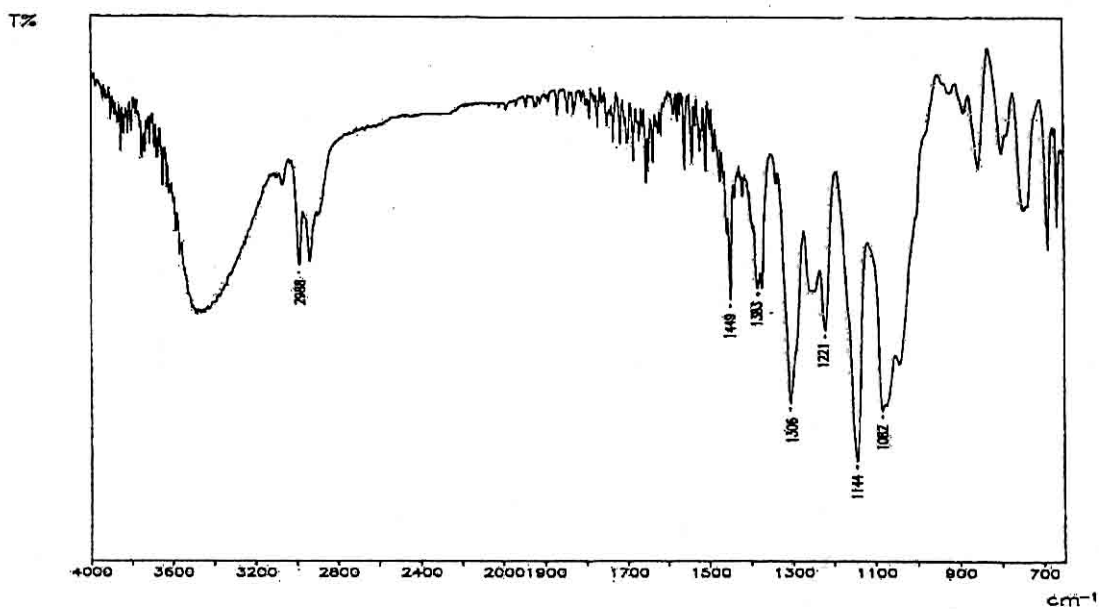
JULIO 2013

ESPECTROSCOPIA

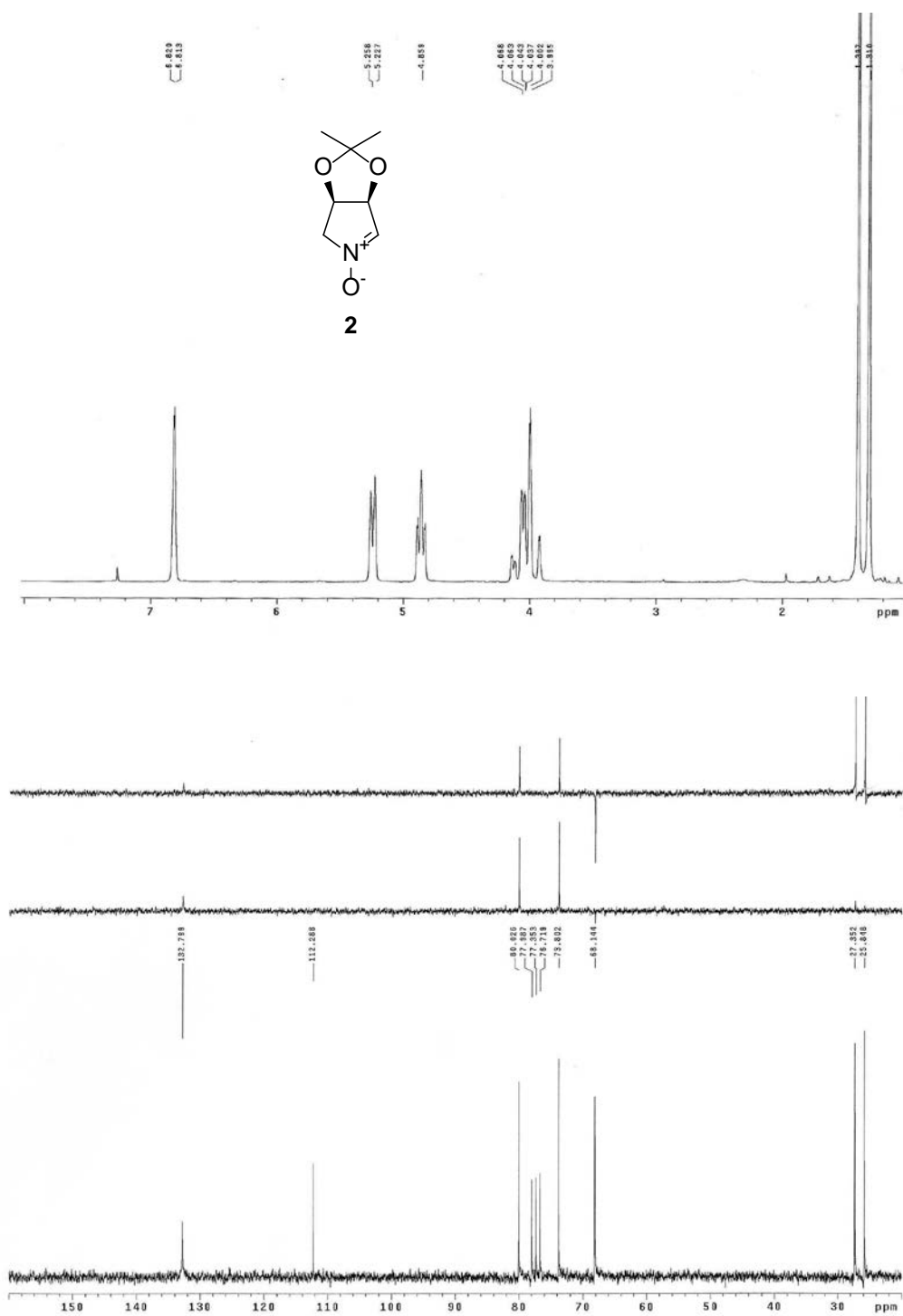
^1H y ^{13}C del compuesto **1**:



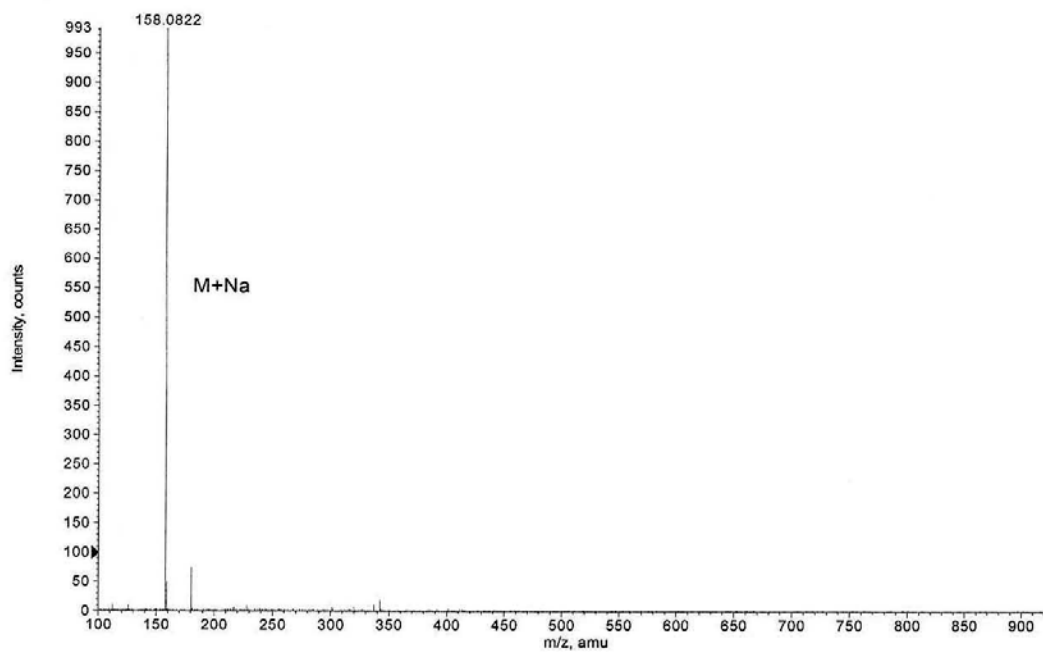
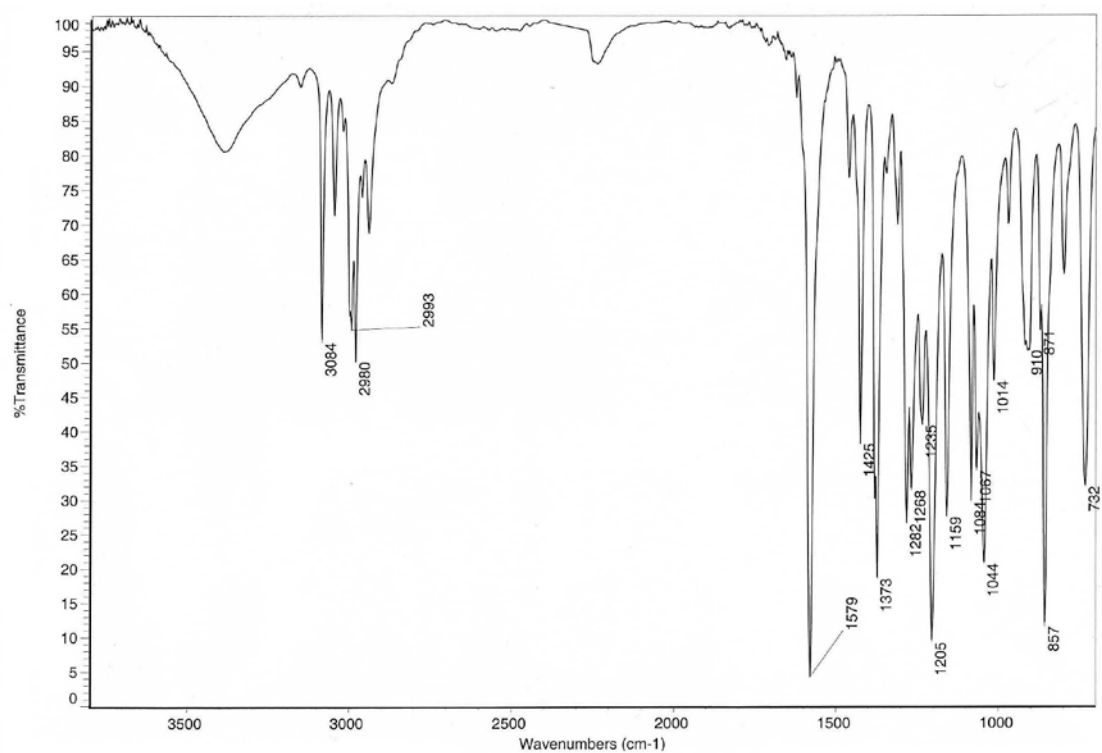
IR y HRMS del compuesto **1**:



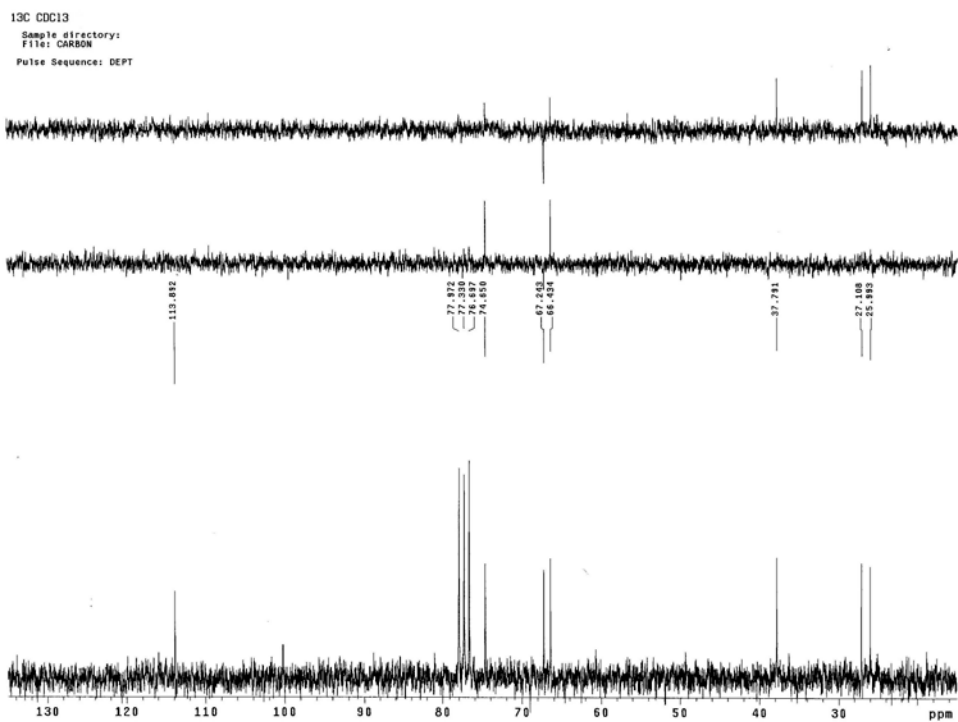
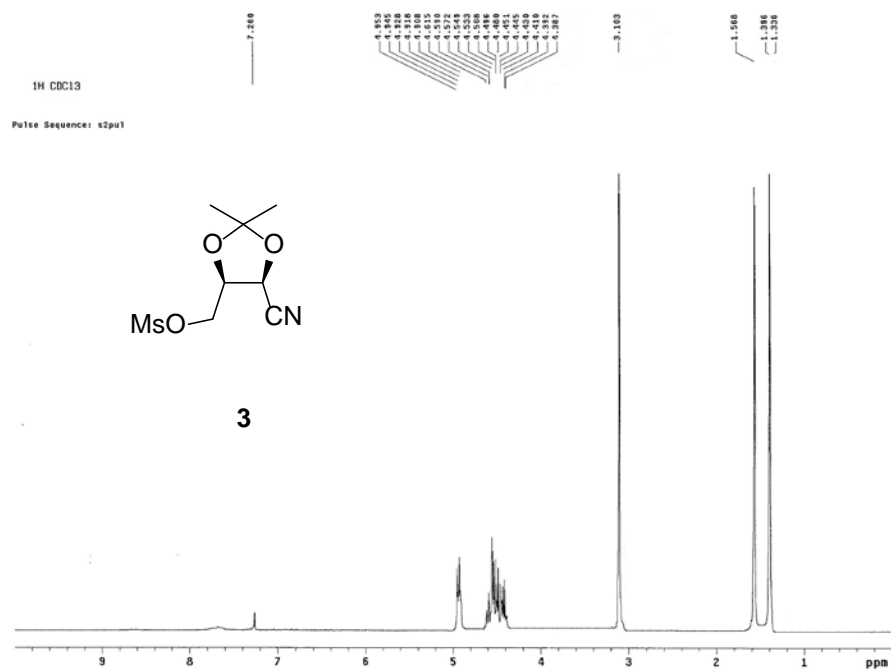
^1H y ^{13}C del compuesto **2**:



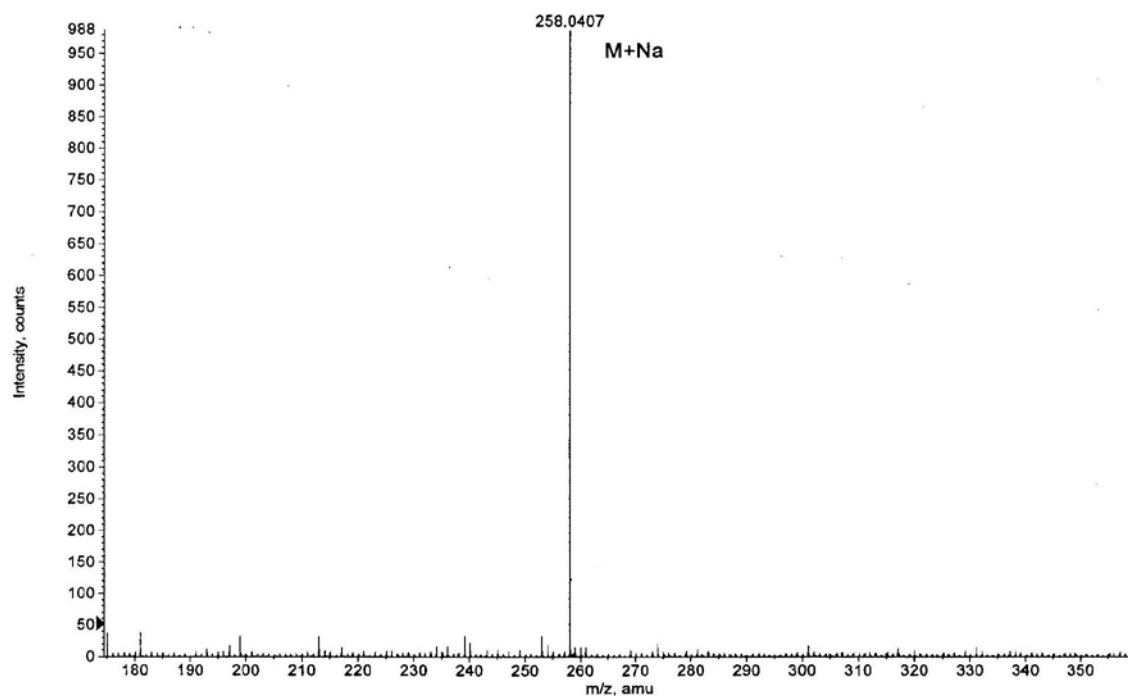
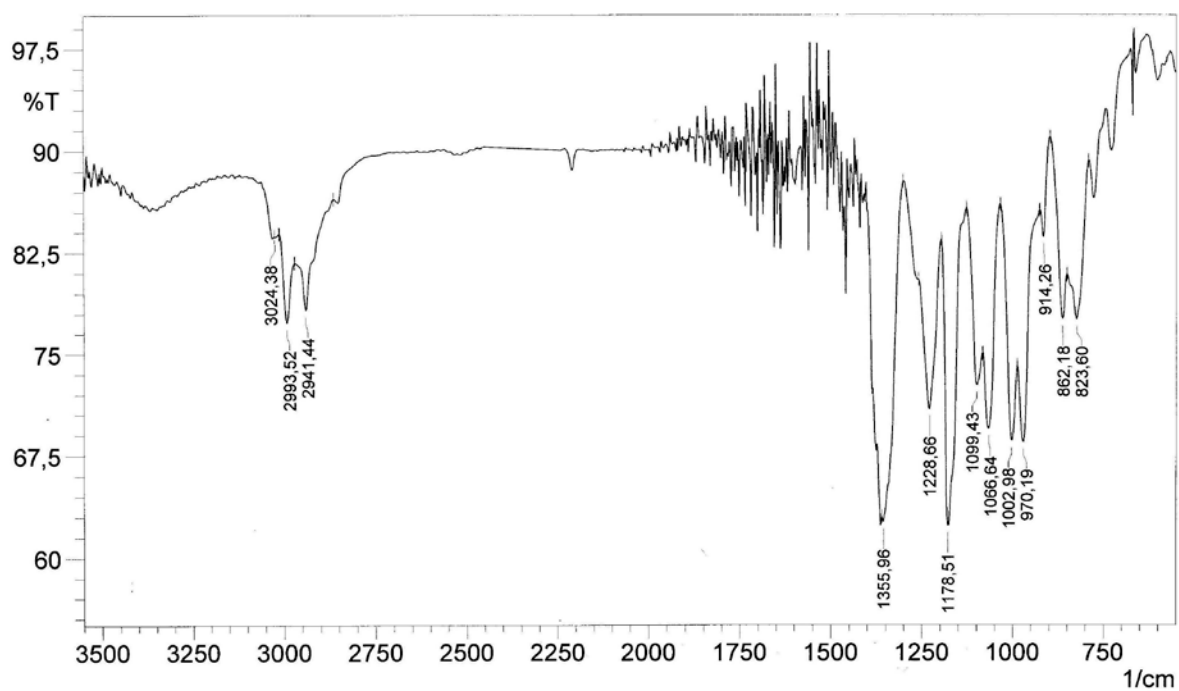
IR y HRMS del compuesto 2:



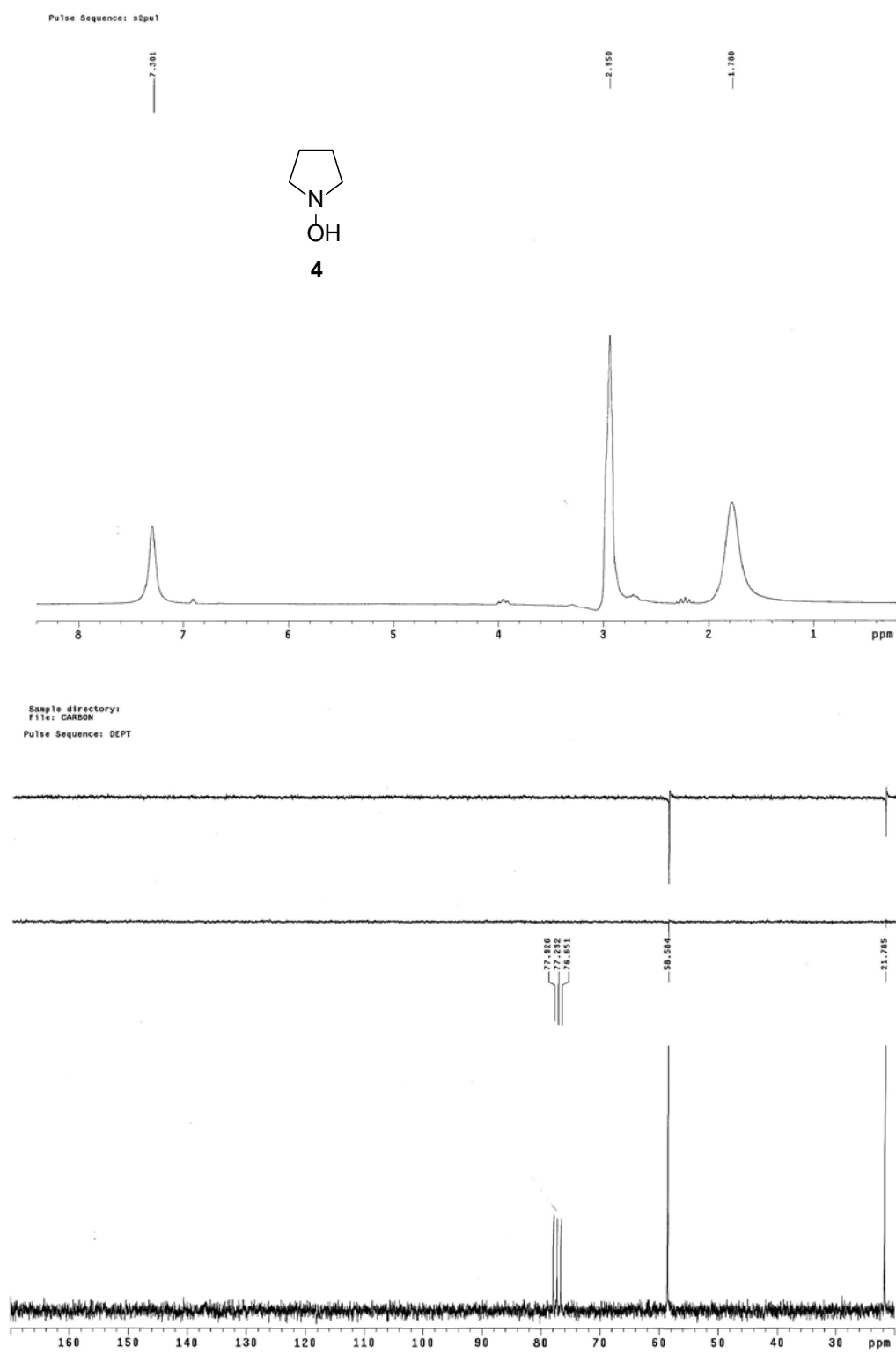
^1H y ^{13}C del compuesto **3**:



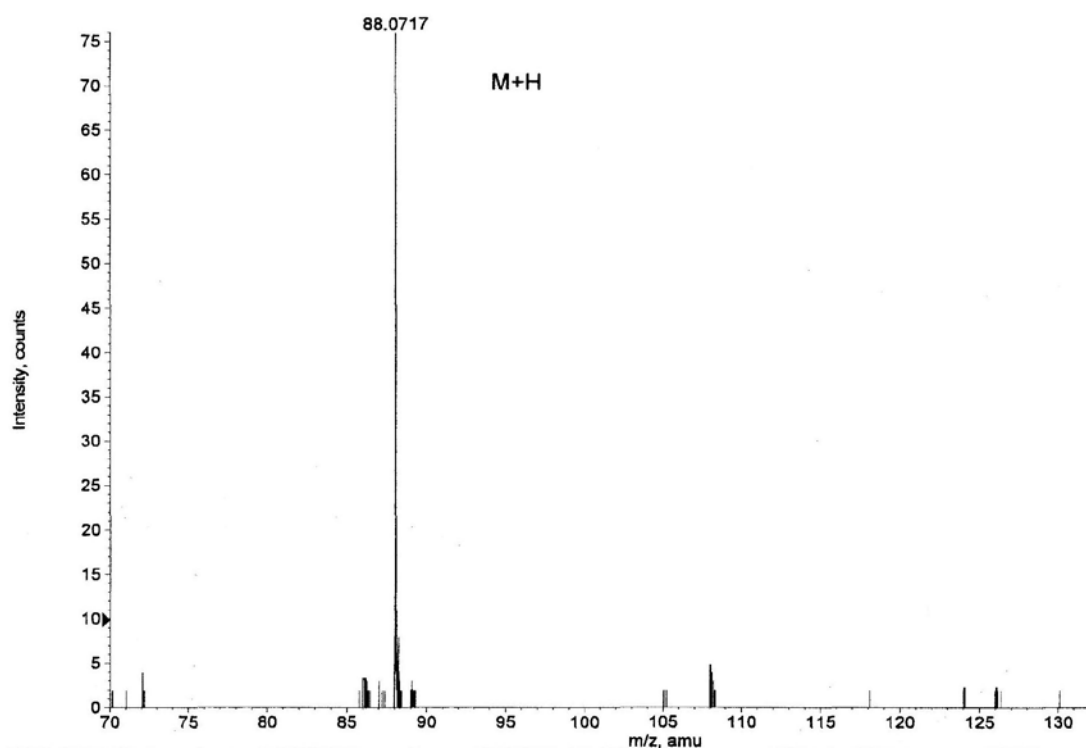
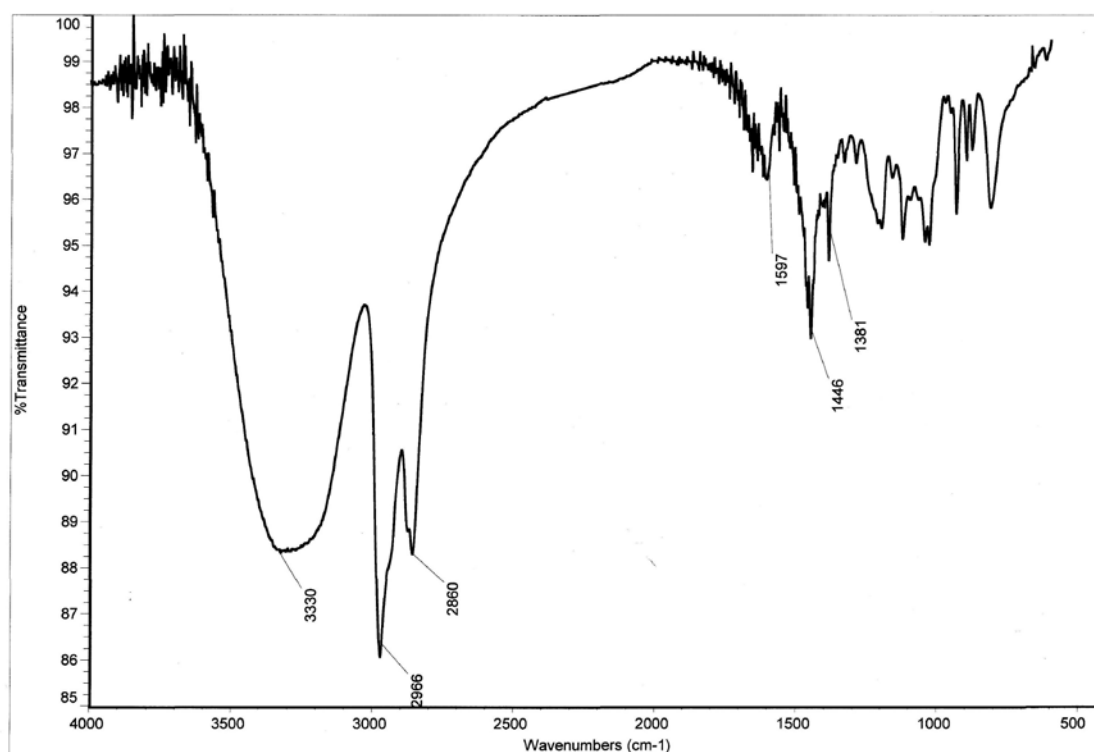
IR y HRMS del compuesto 3:



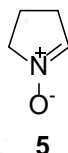
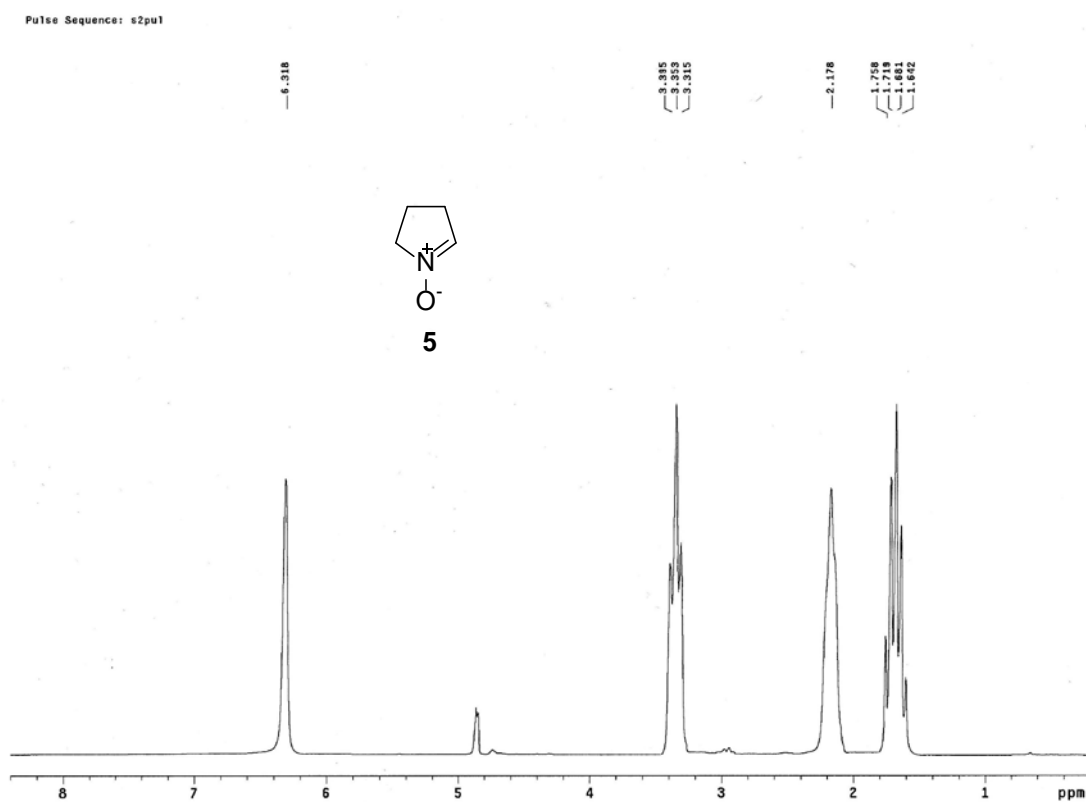
^1H y ^{13}C del compuesto **4**:



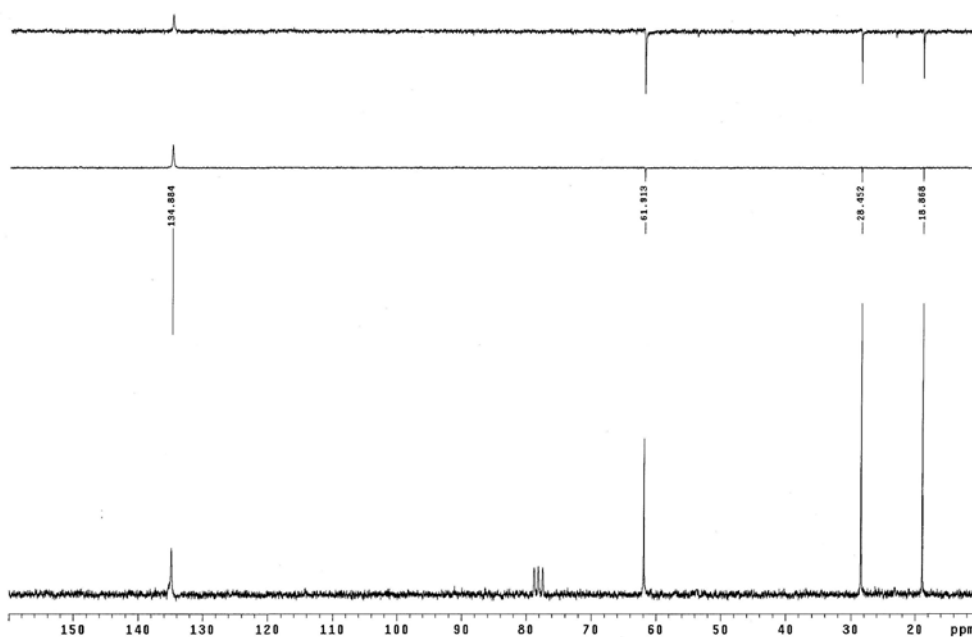
IR y HRMS del compuesto 4:



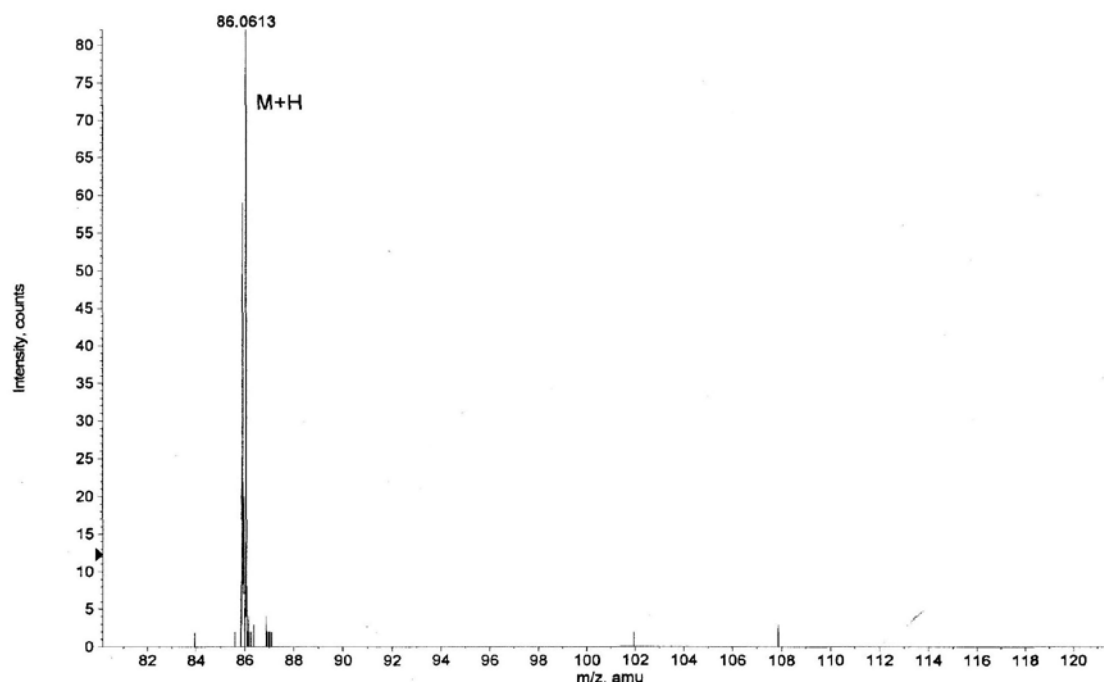
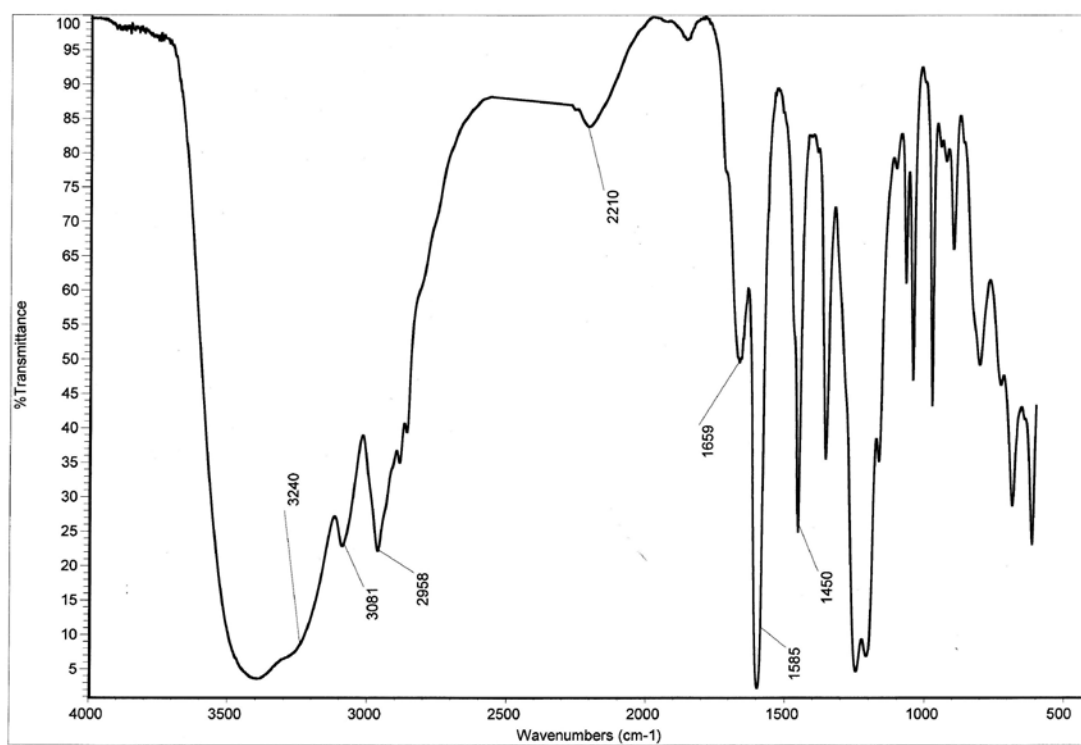
^1H y ^{13}C del compuesto **5**:



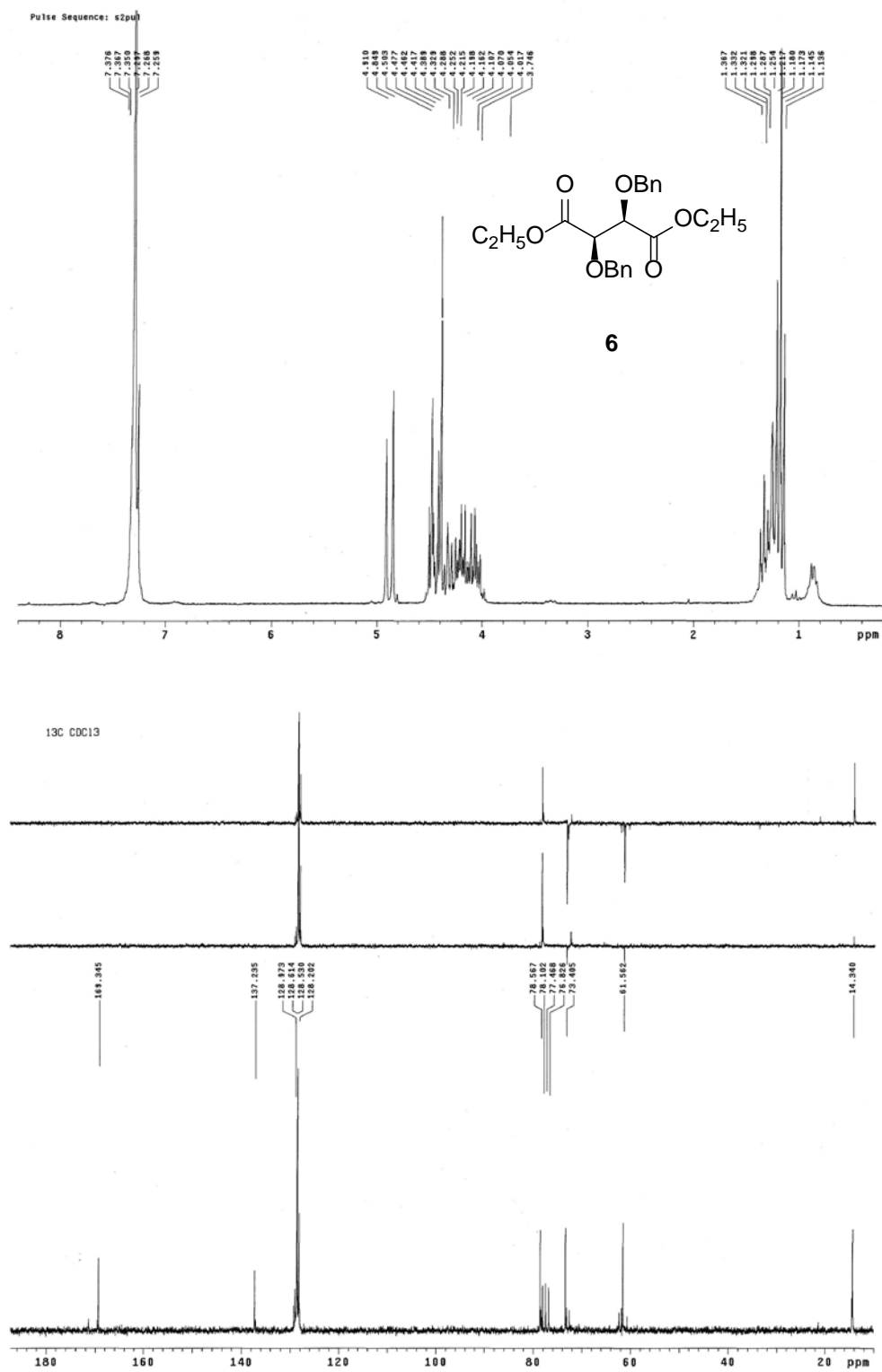
Sample directory:
File: CARBON
Pulse Sequence: DEPT

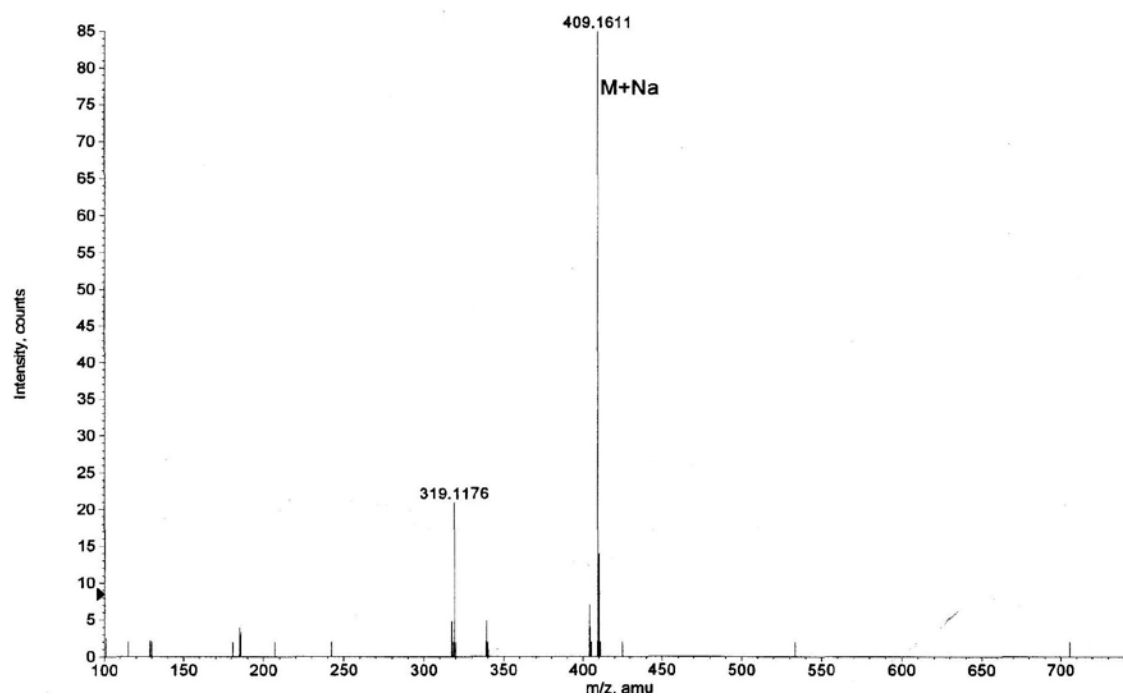
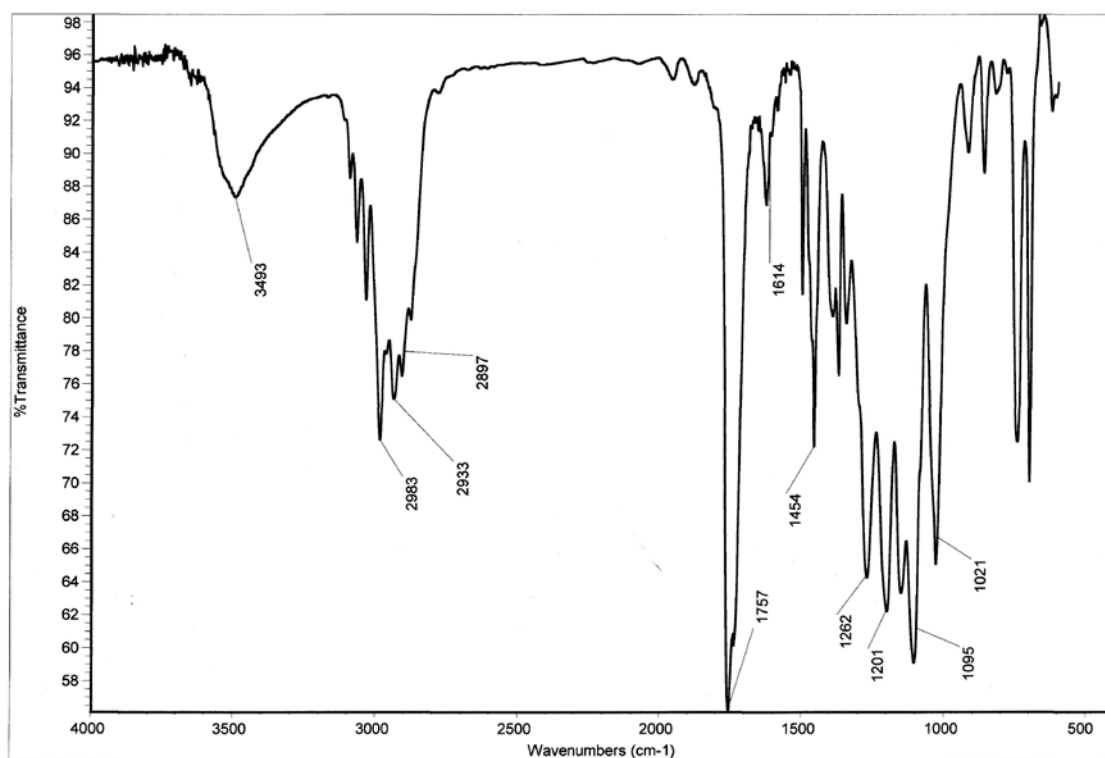


IR y HRMS del compuesto **5**:

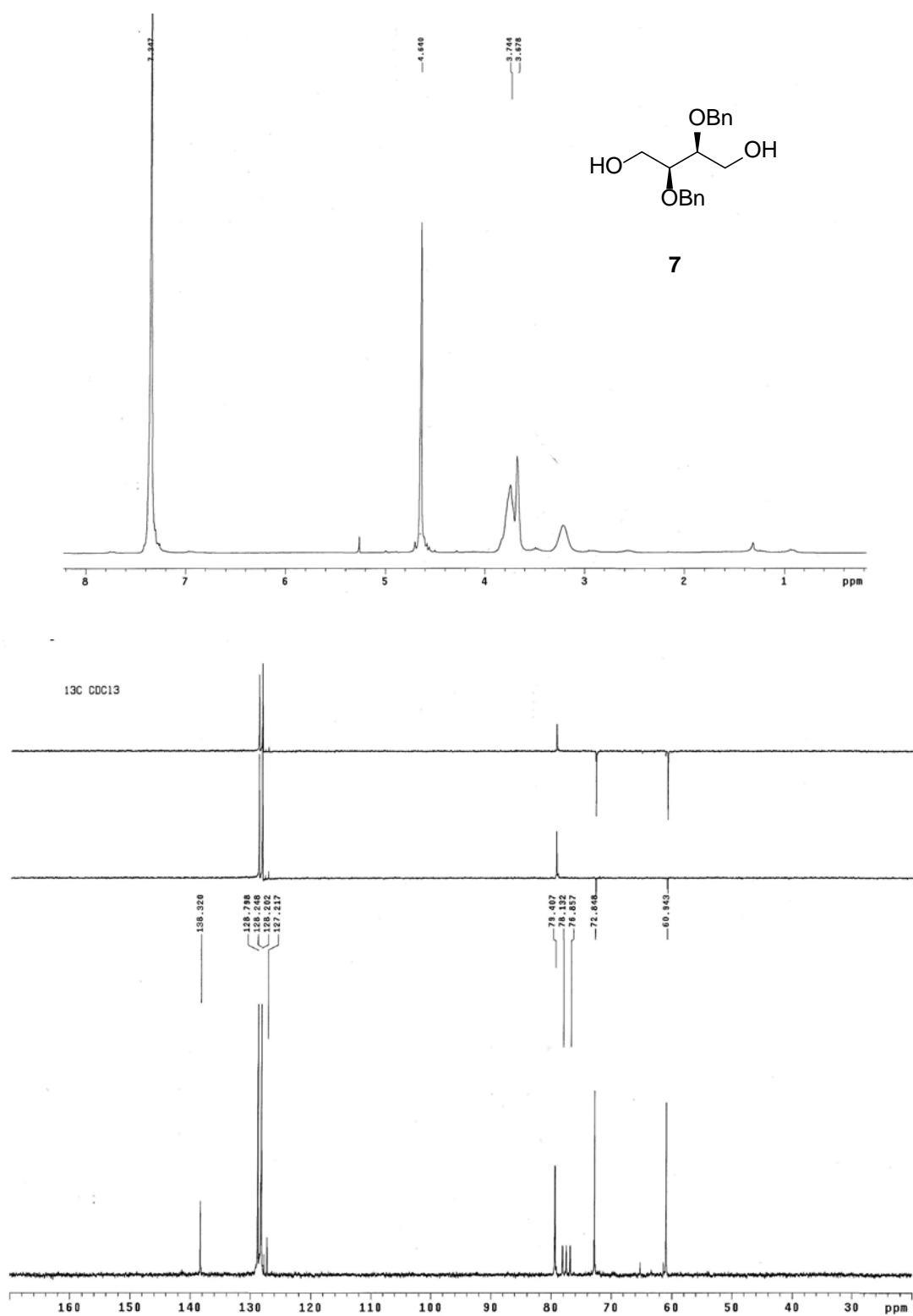


^1H y ^{13}C del compuesto **6**:

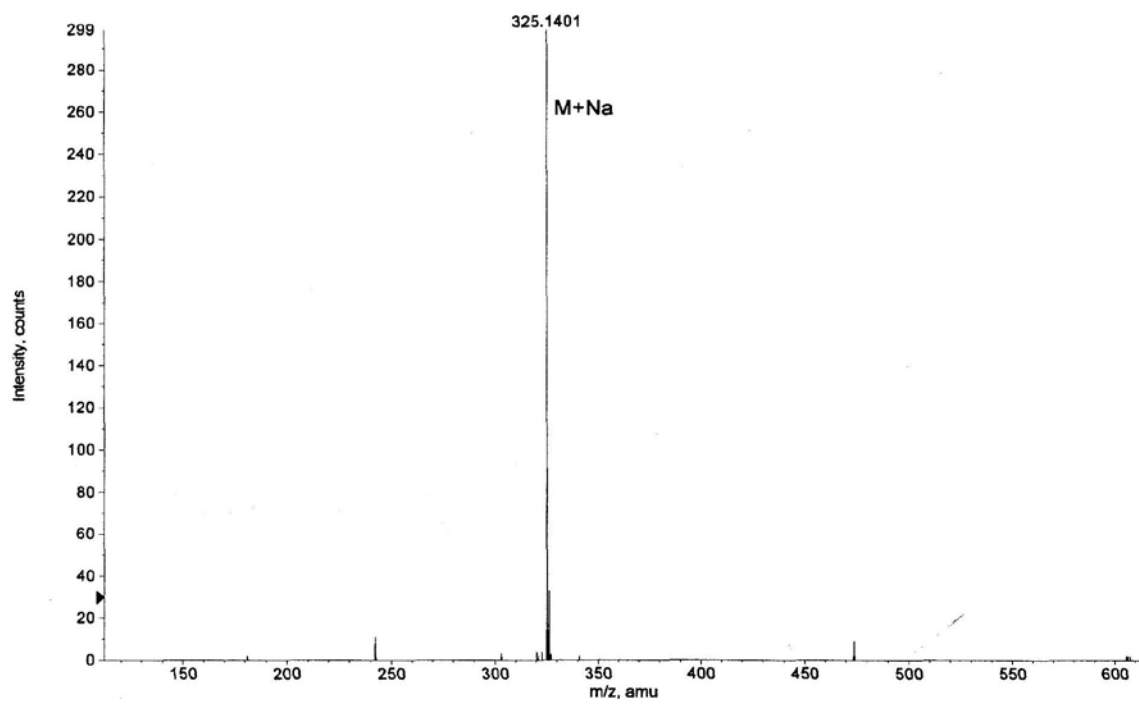
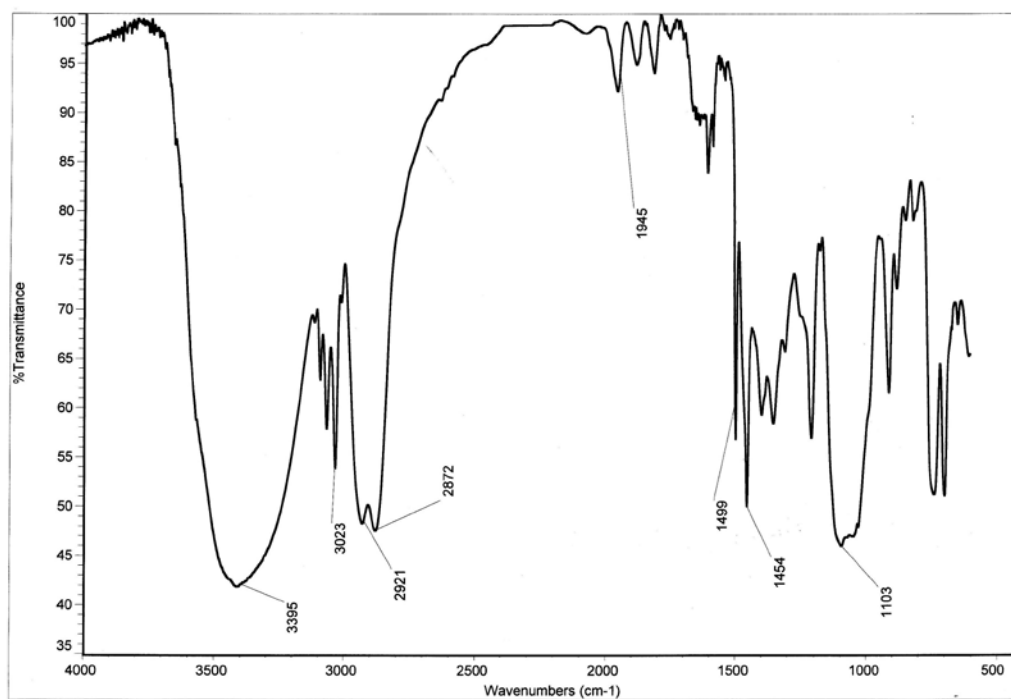


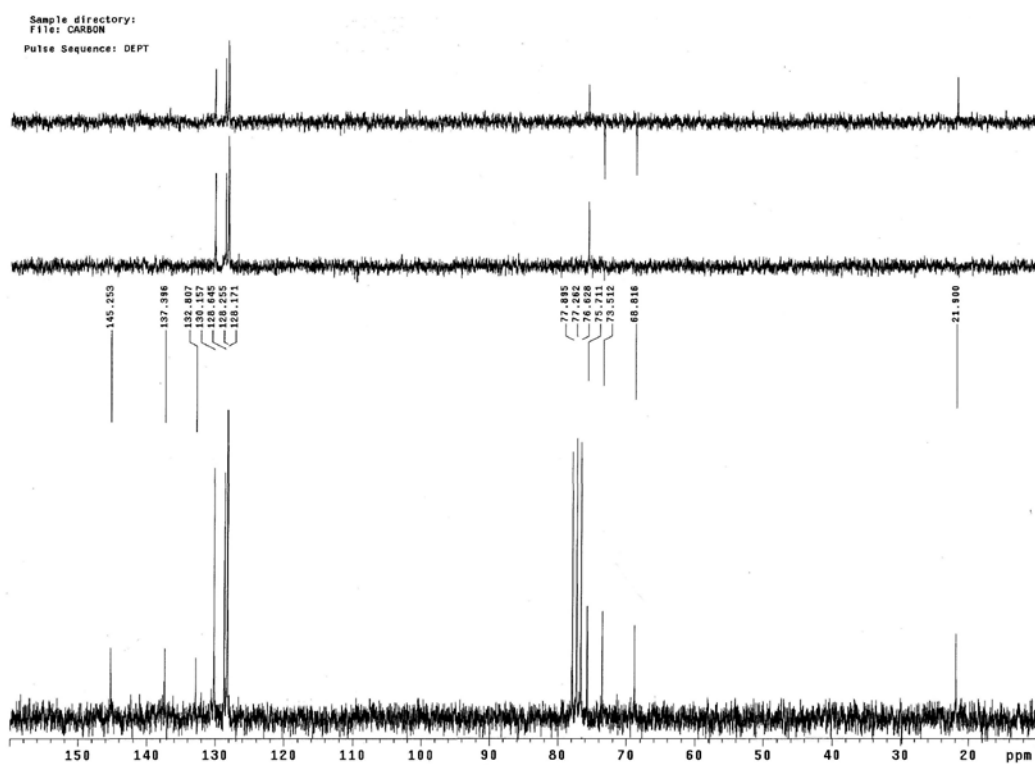
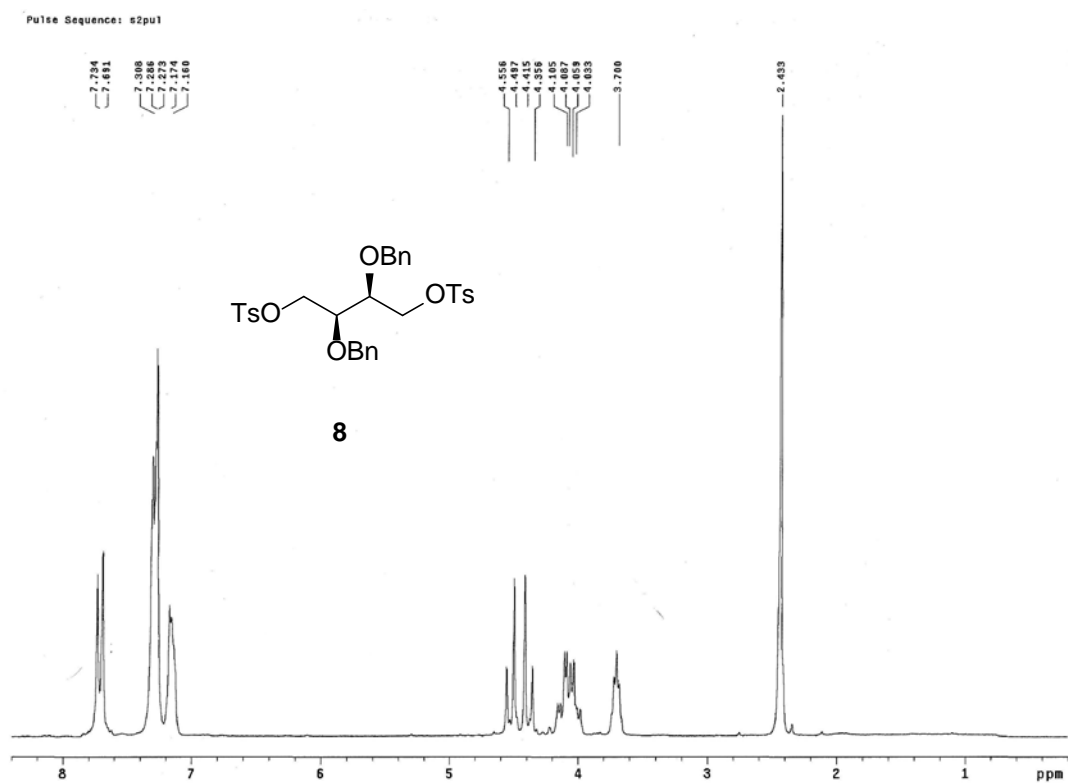
IR y HRMS del compuesto **6**:

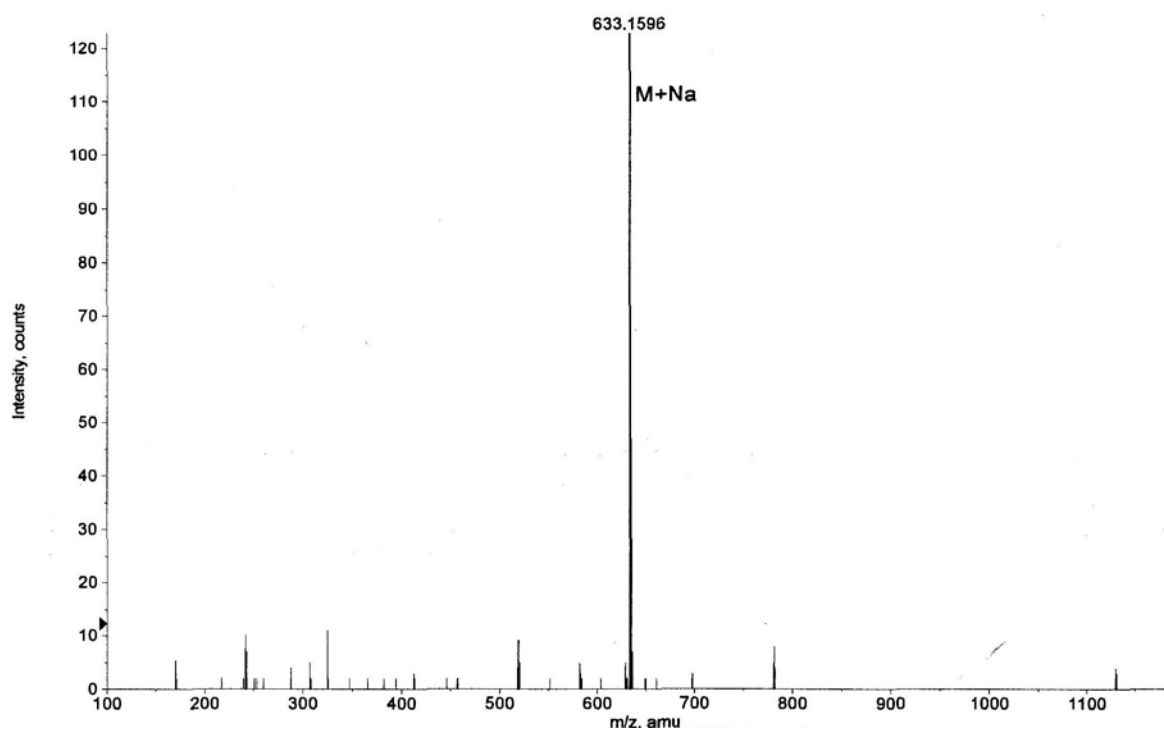
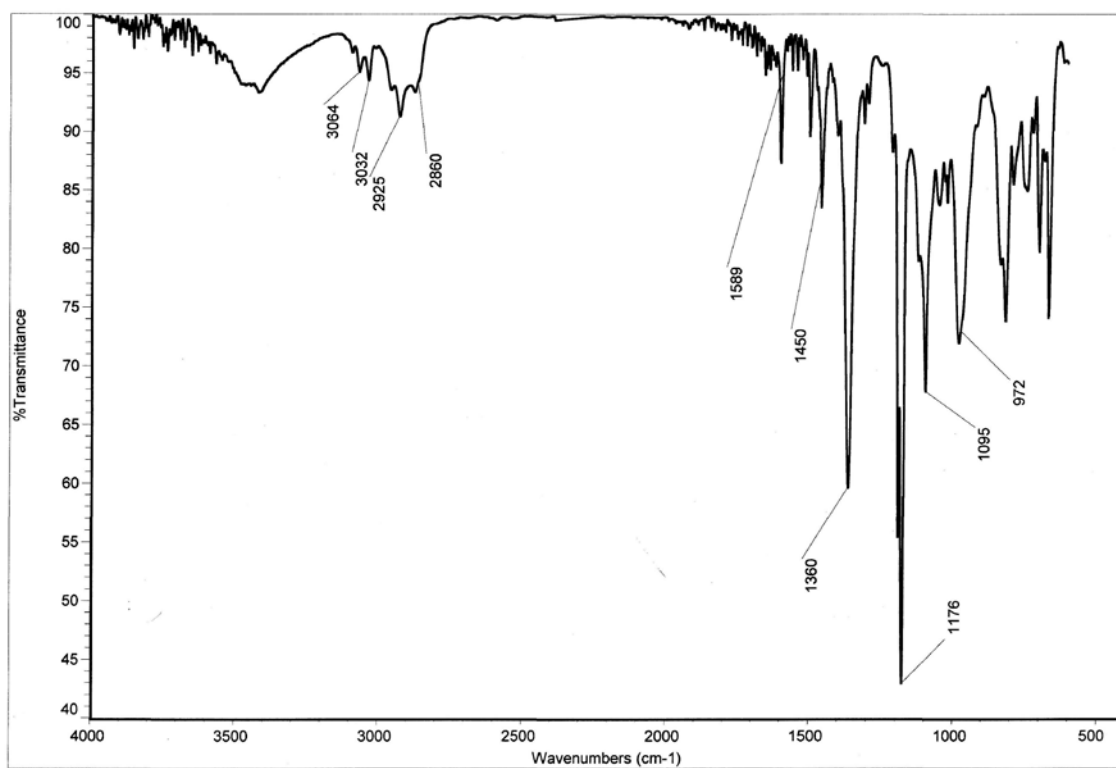
^1H y ^{13}C del compuesto **7**:

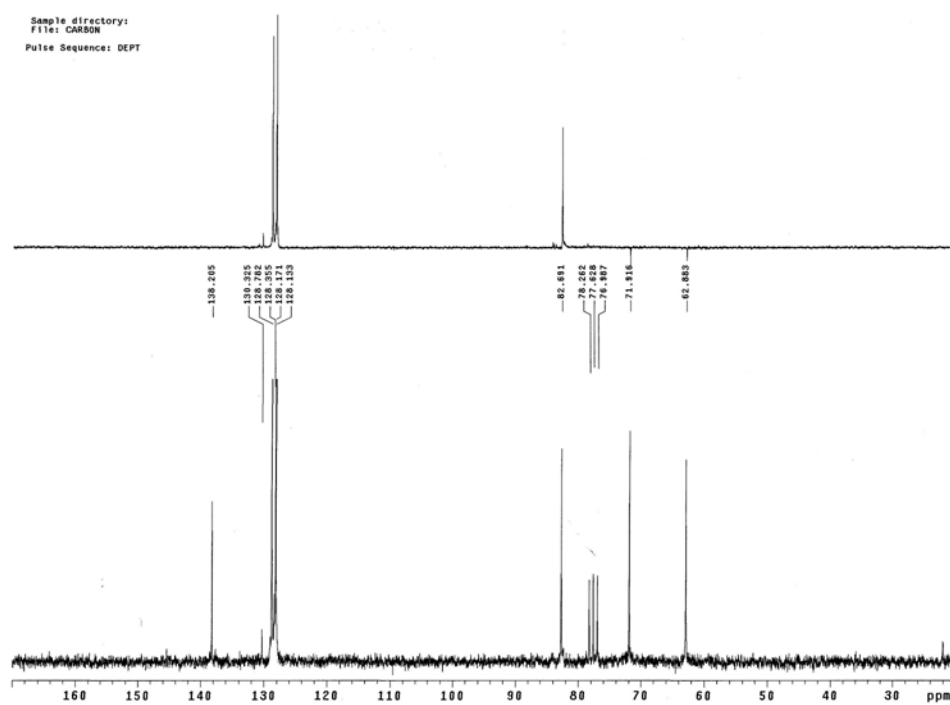
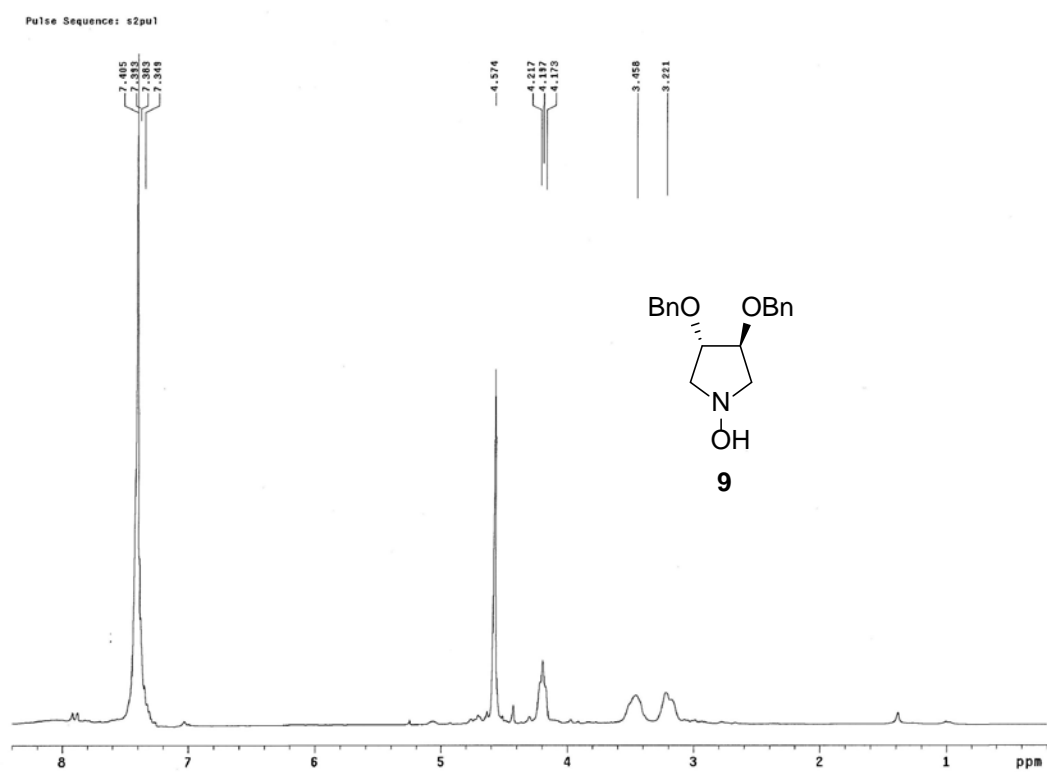


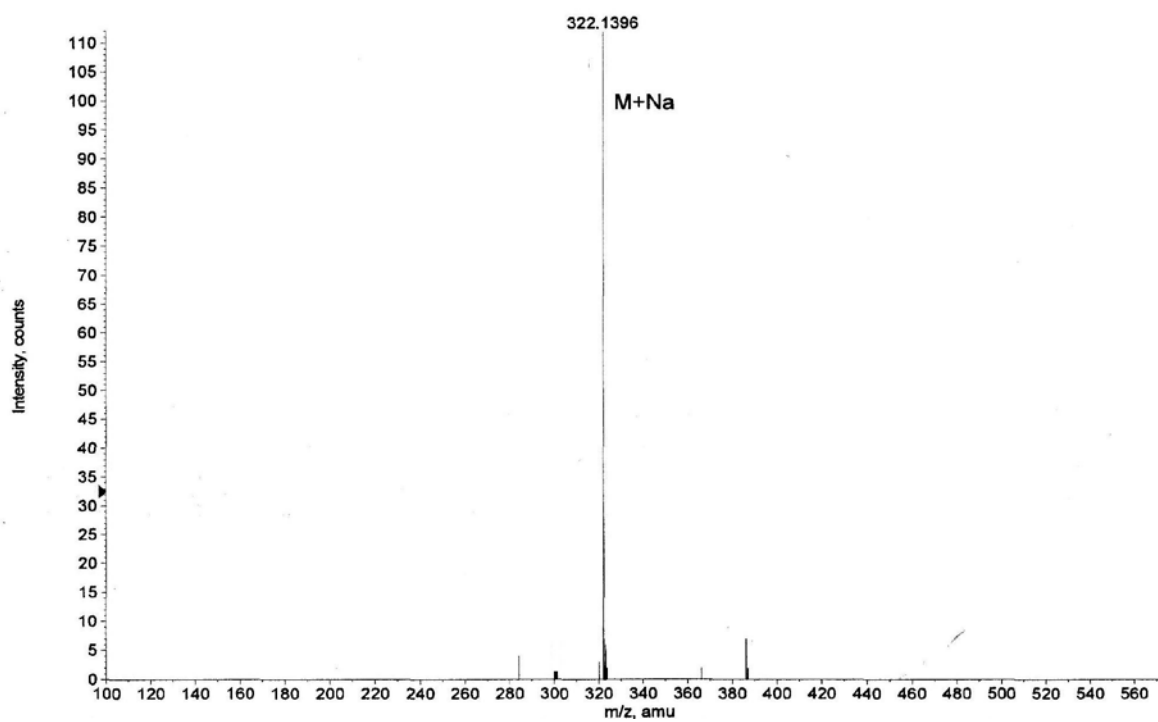
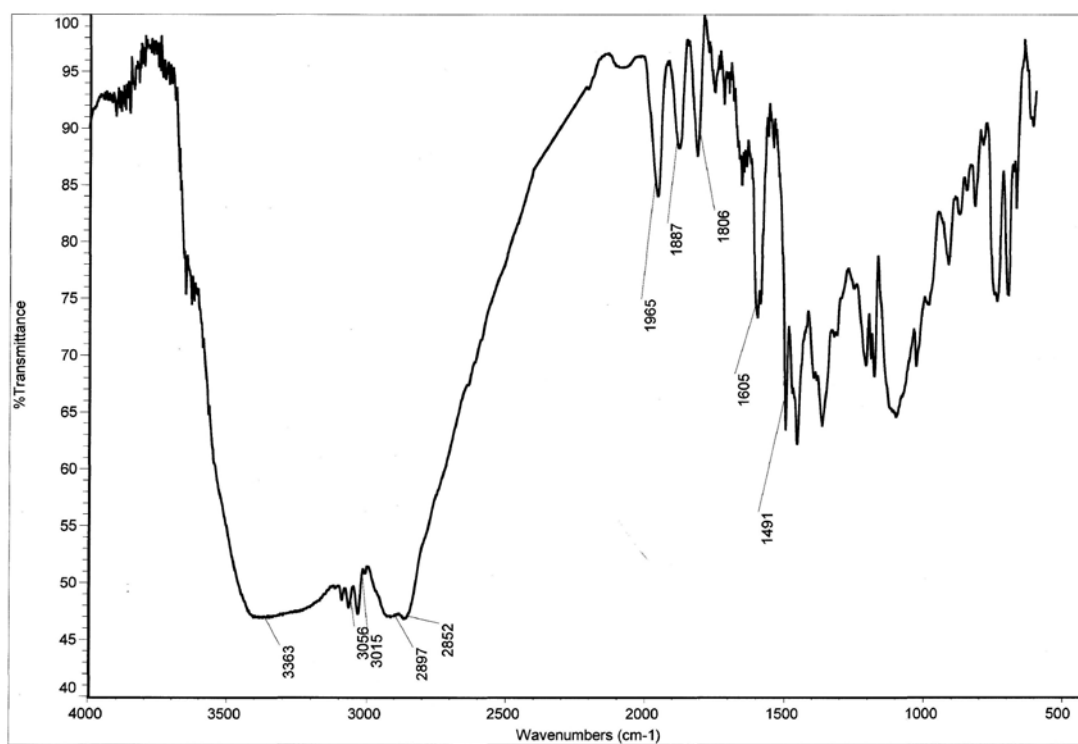
IR y HRMS del compuesto 7:

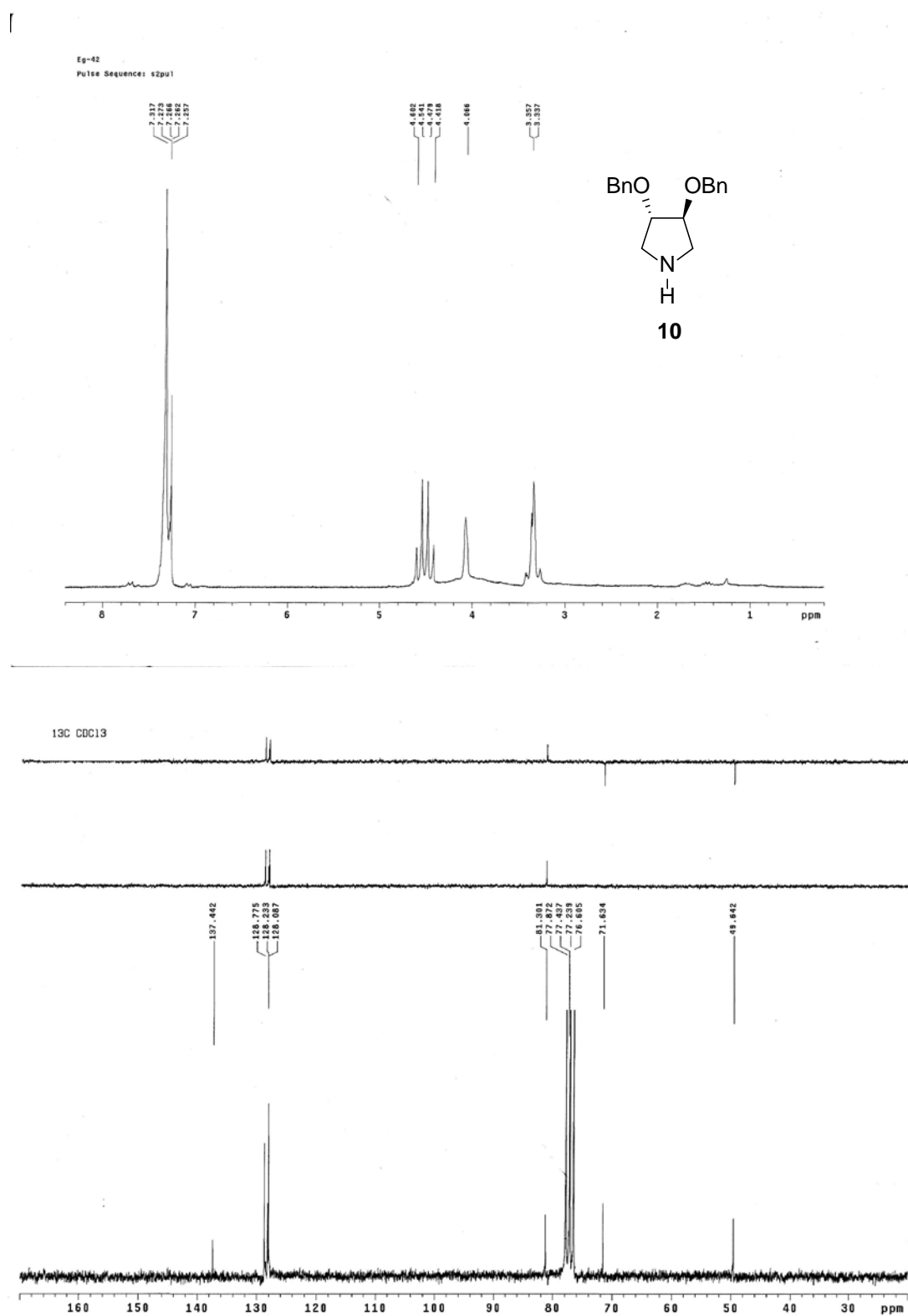


^1H y ^{13}C del compuesto **8**:

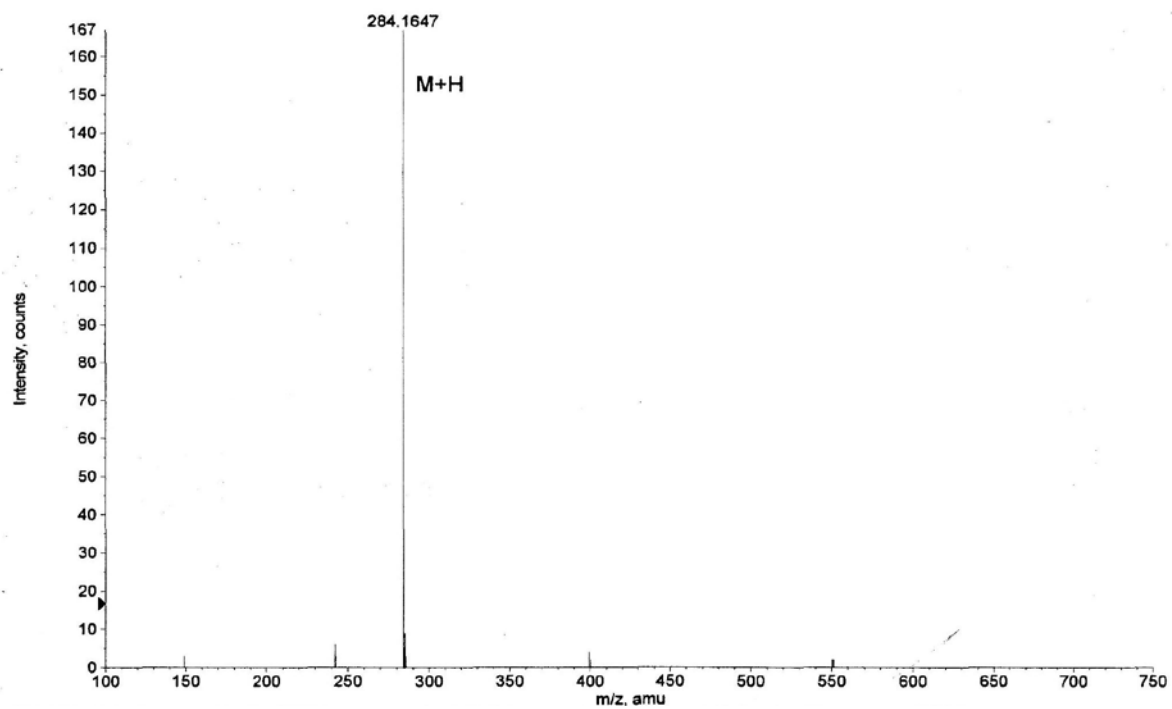
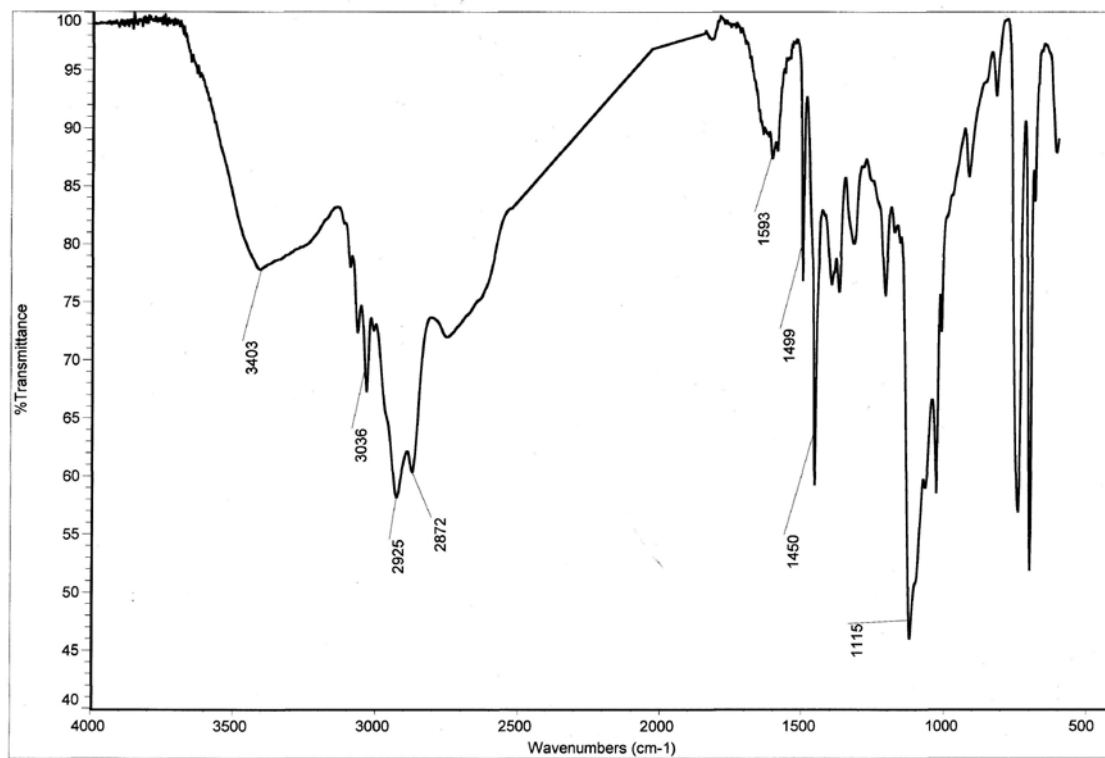
IR y HRMS del compuesto **8**:

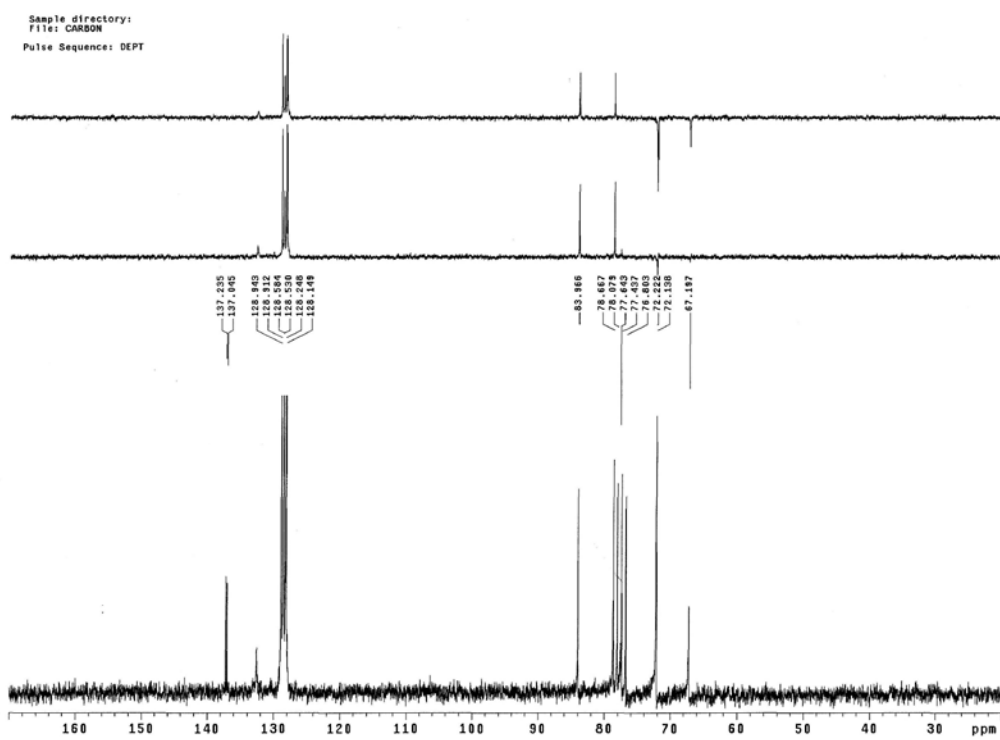
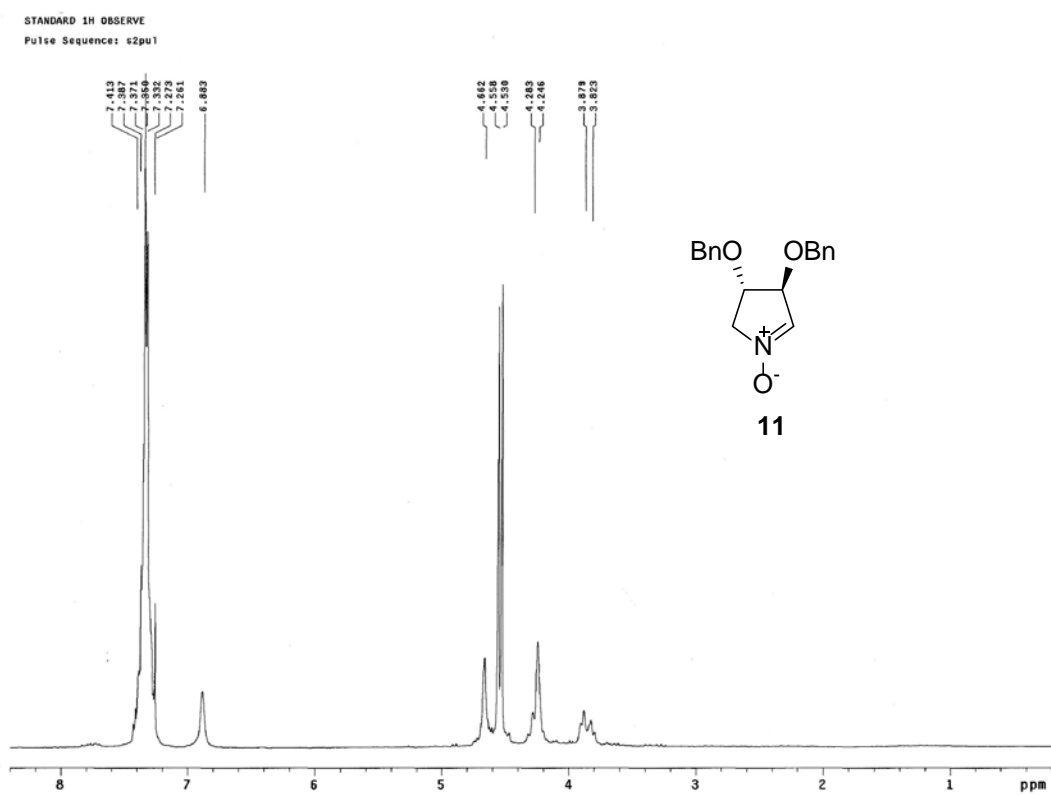
^1H y ^{13}C del compuesto **9**:

IR y HRMS del compuesto **9**:

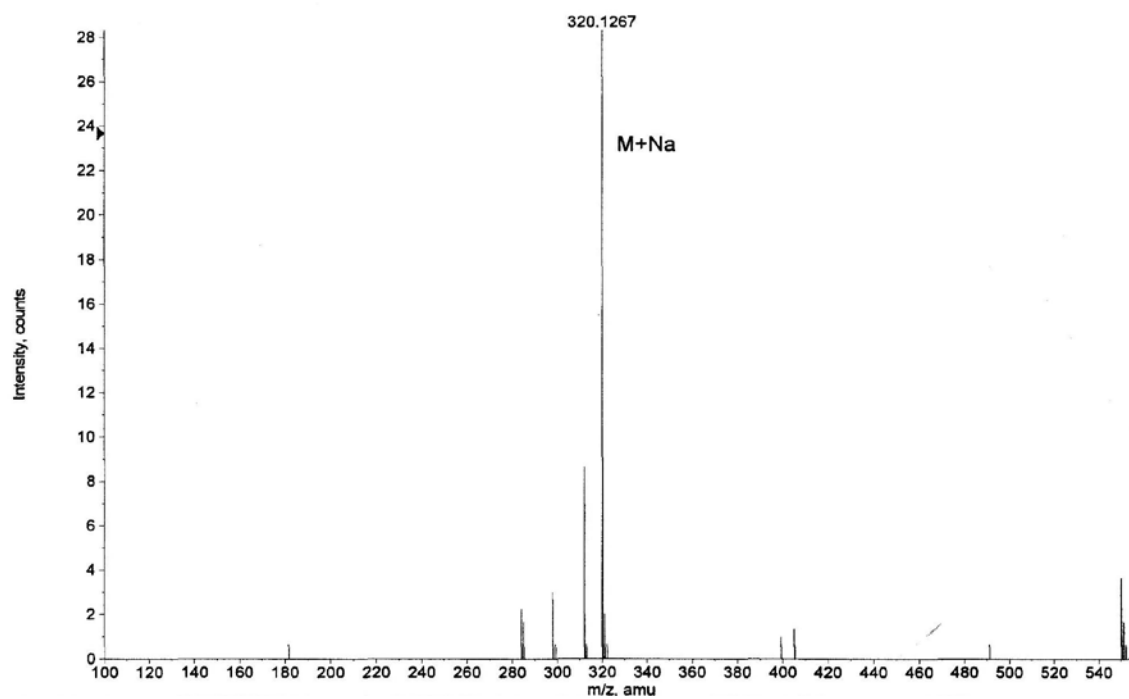
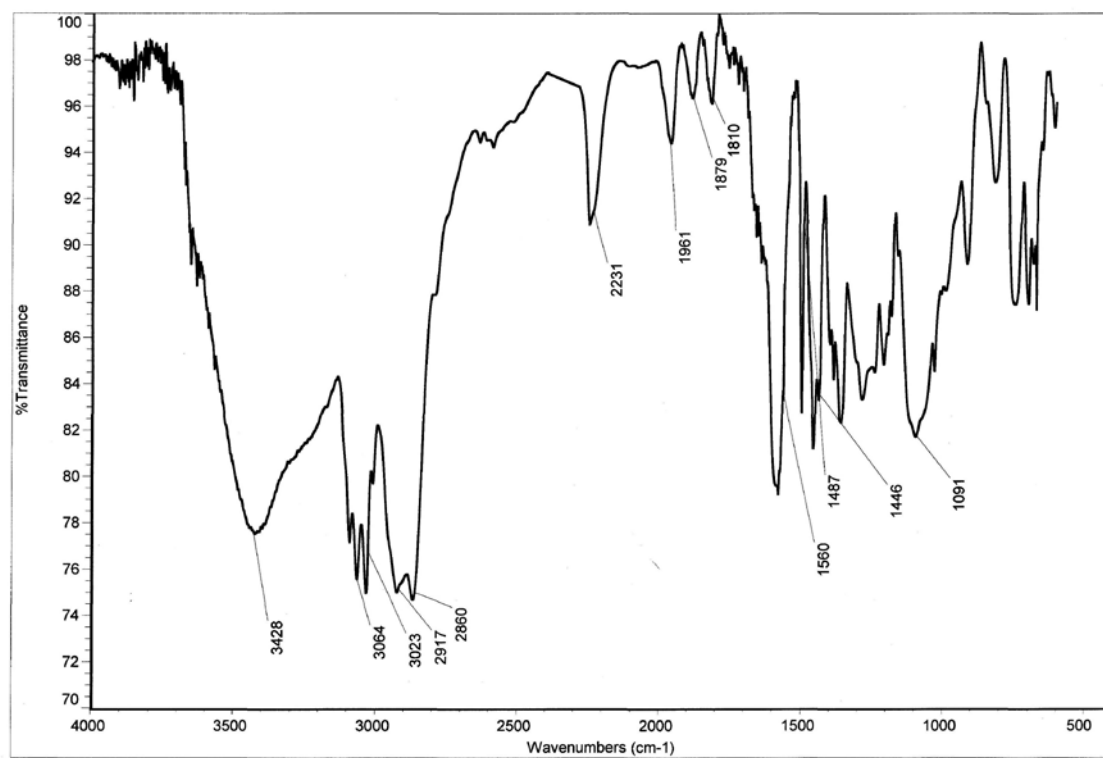
^1H y ^{13}C del compuesto **10**:

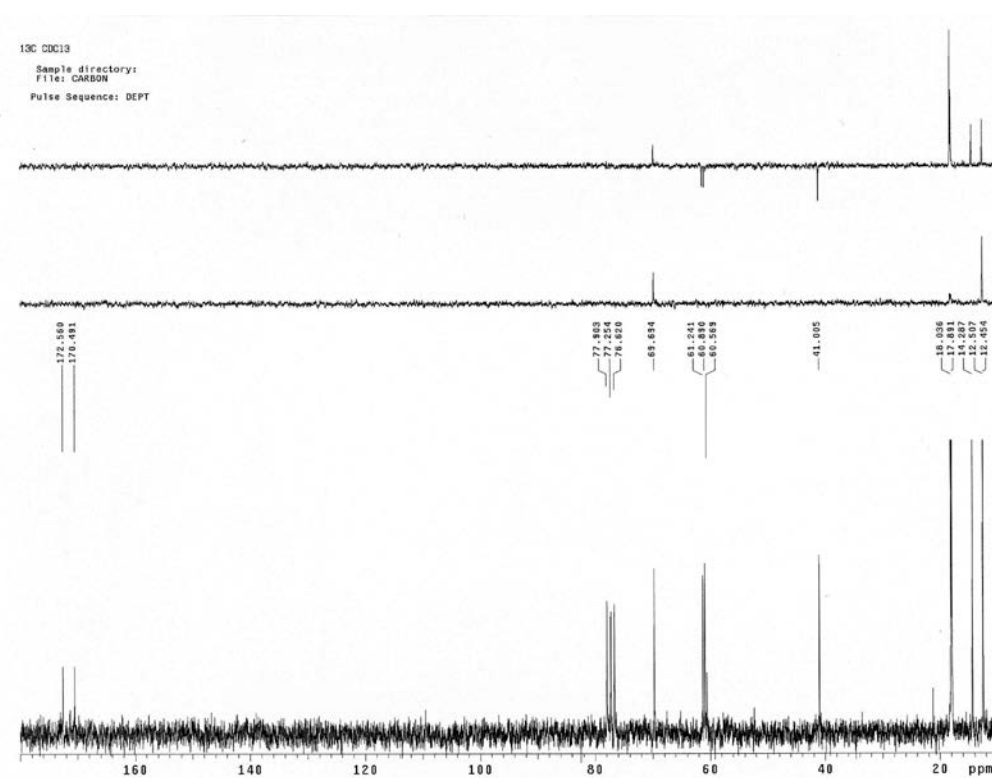
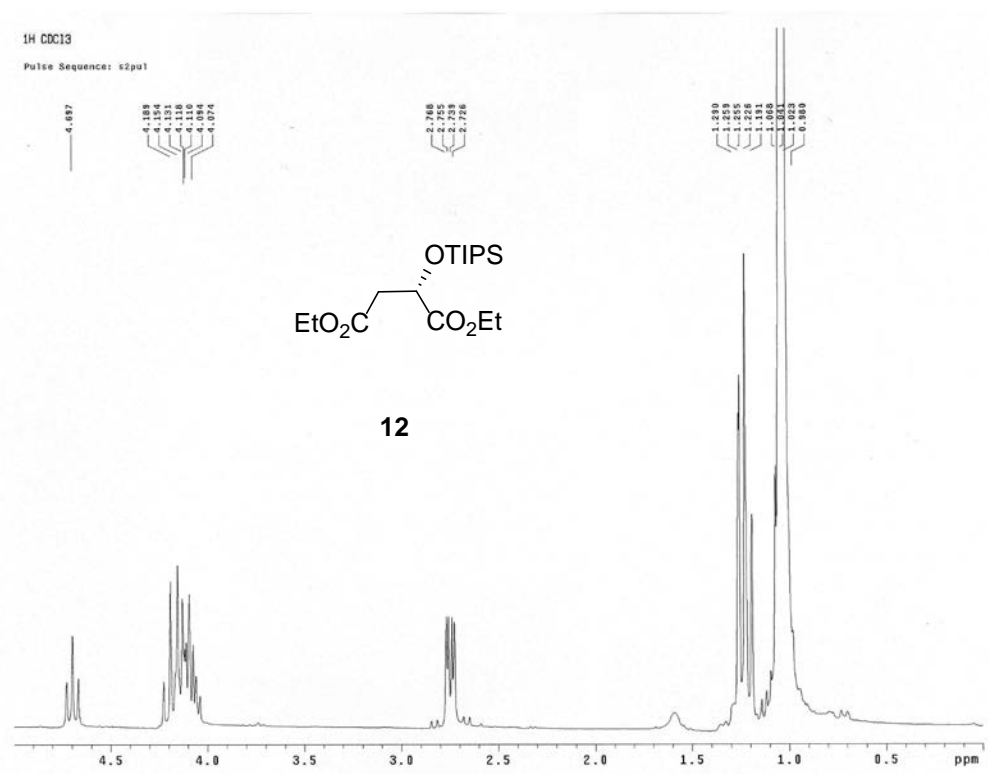
IR y HRMS del compuesto **10**:

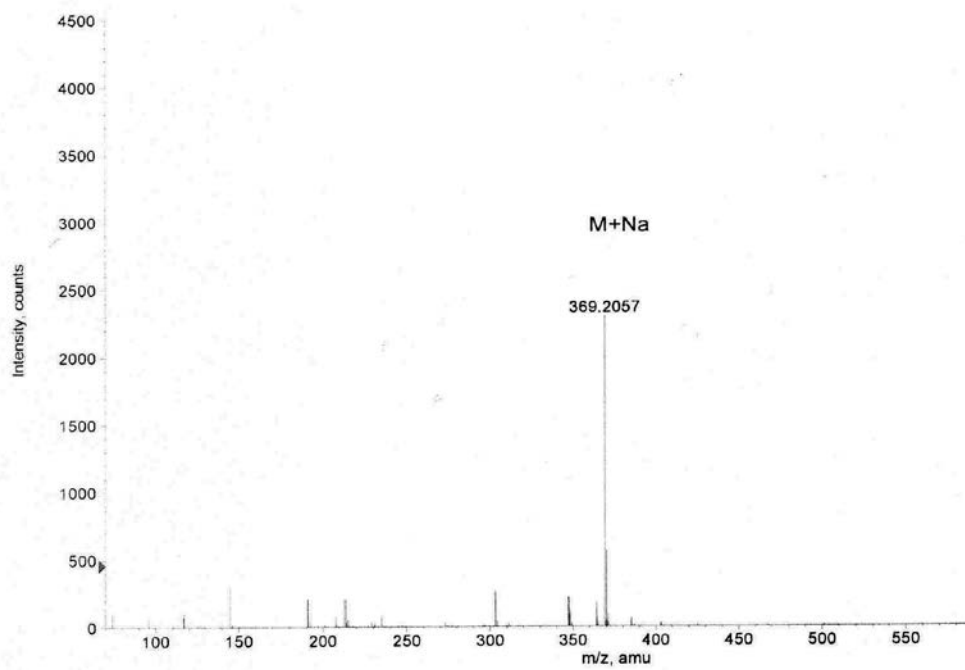
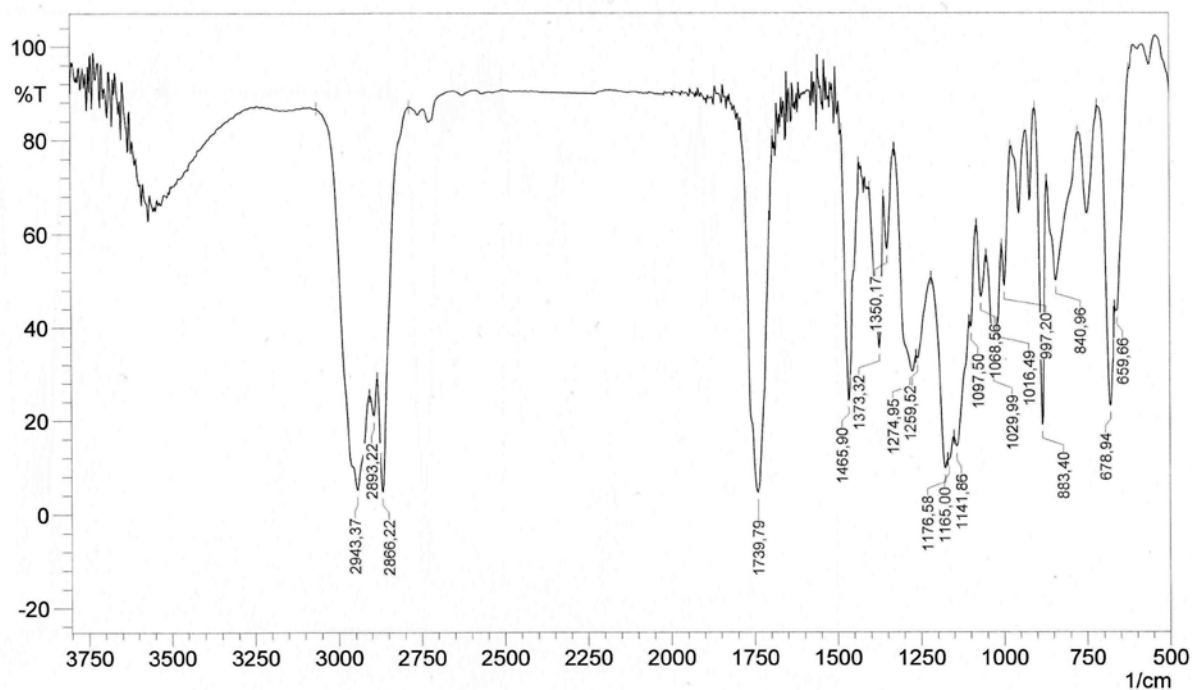


^1H y ^{13}C del compuesto **11**:

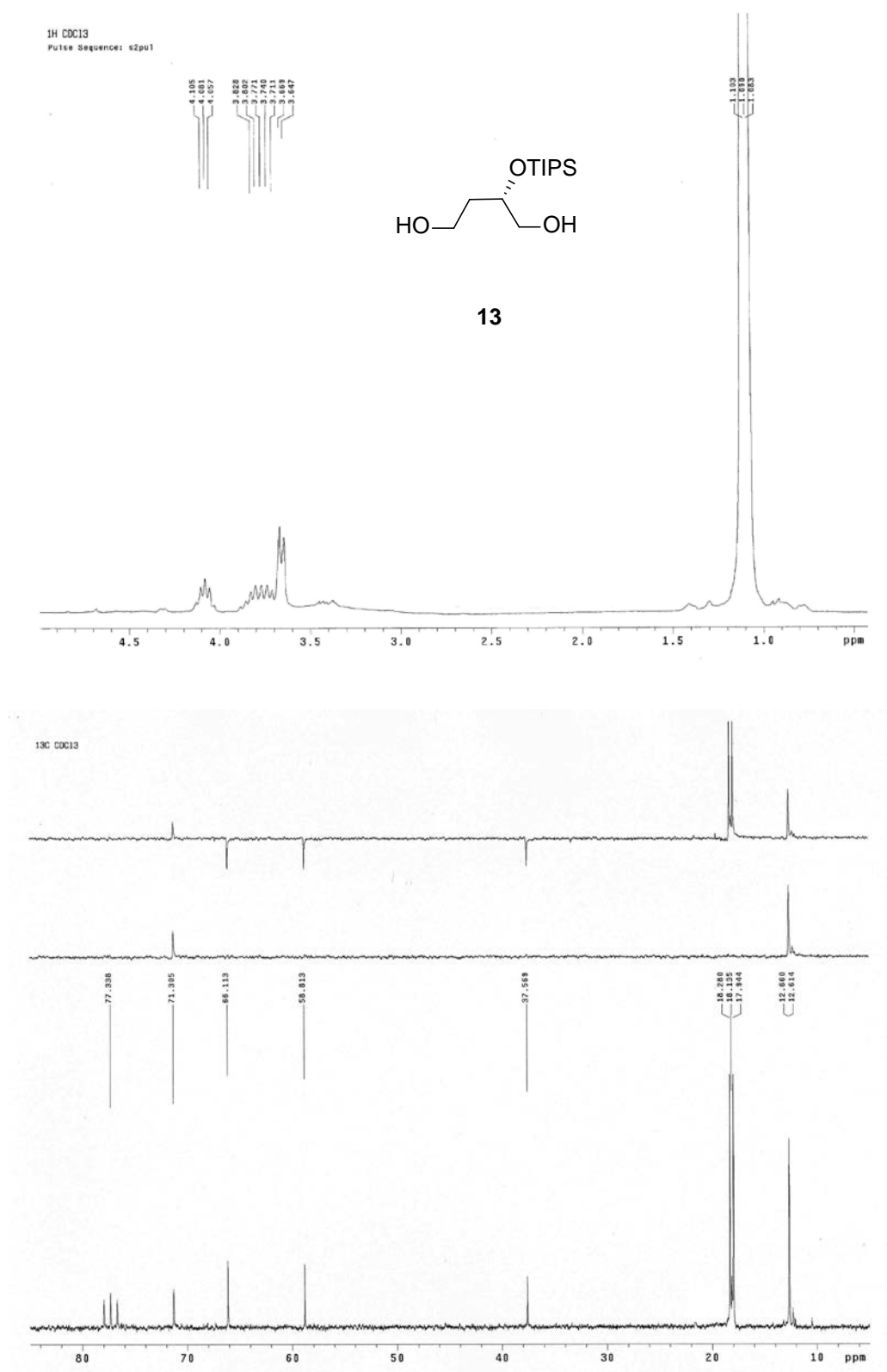
IR y HRMS del compuesto **11**:



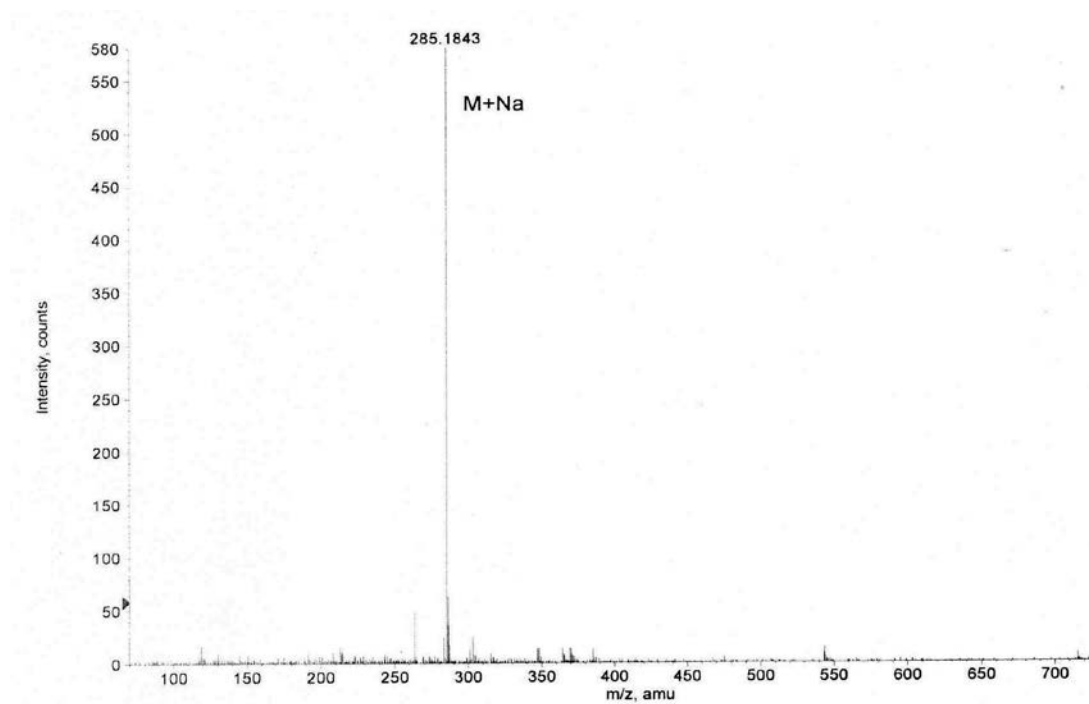
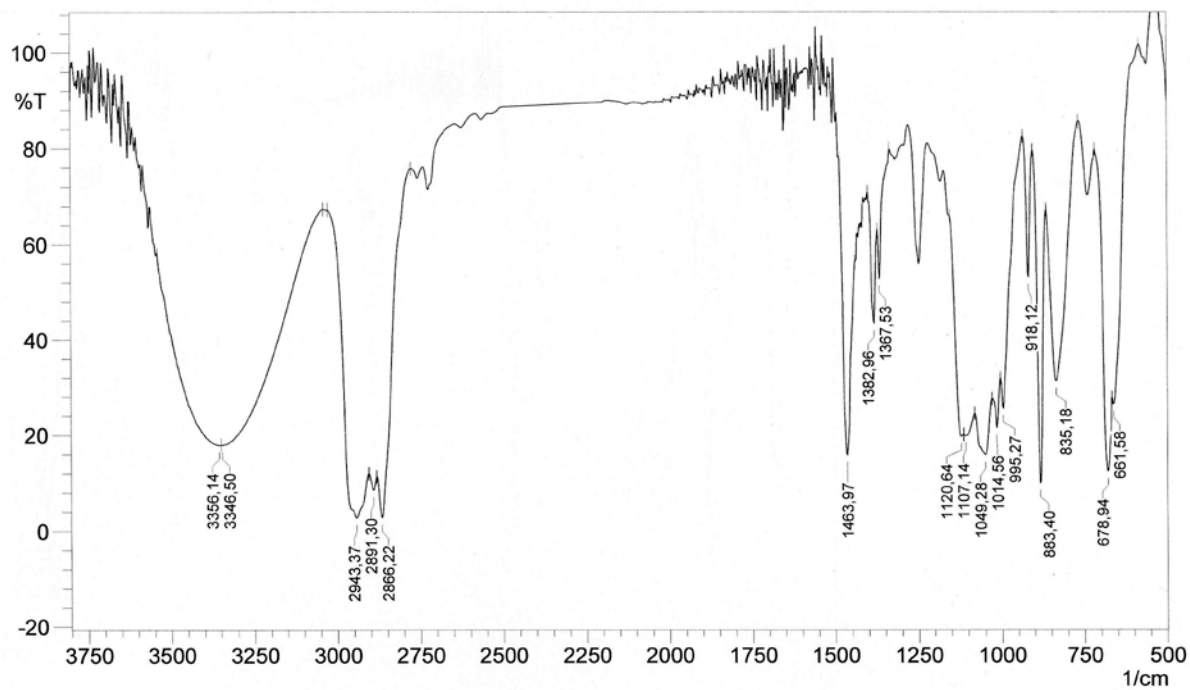
^1H y ^{13}C del compuesto **12**:

IR y HRMS del compuesto **12**:

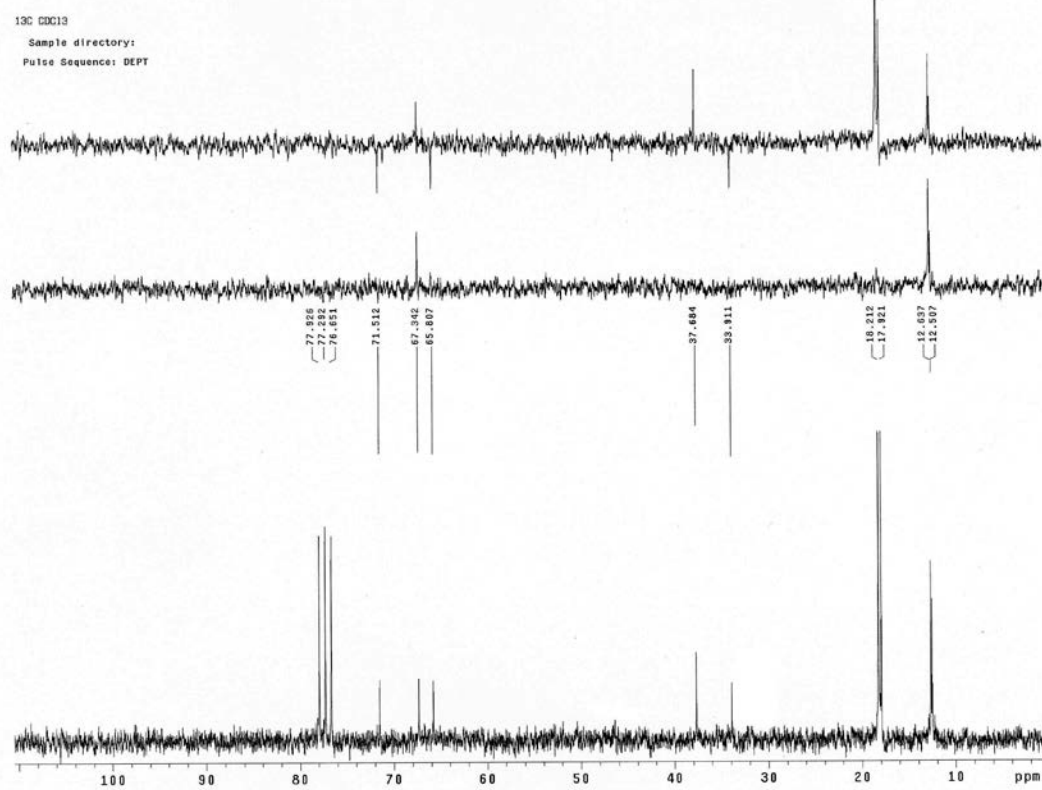
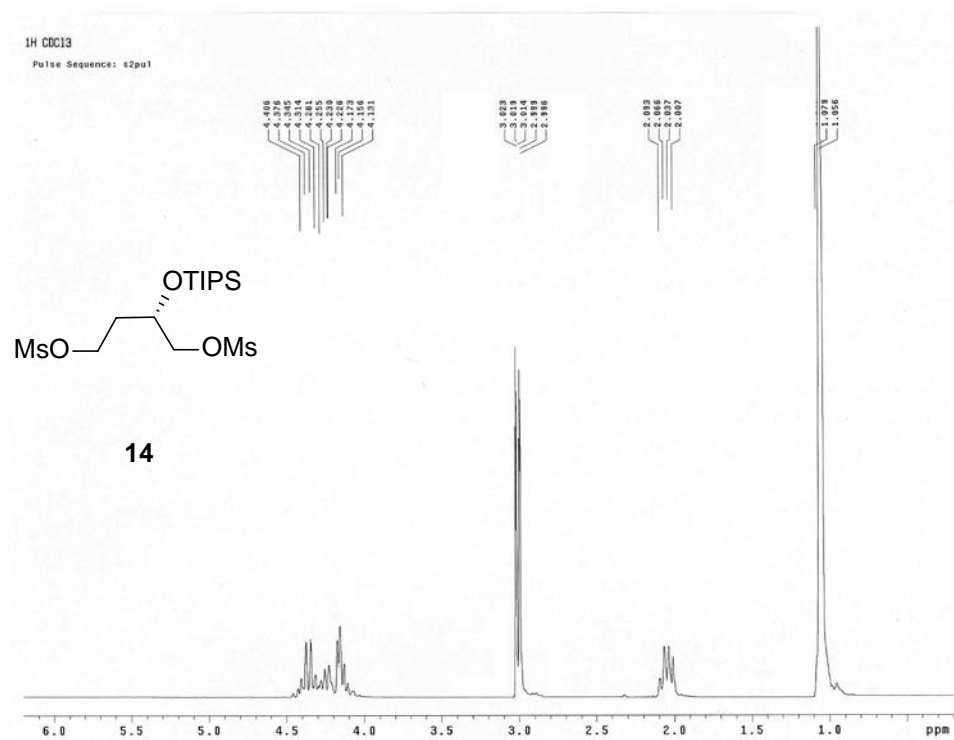
^1H y ^{13}C del compuesto **13**:



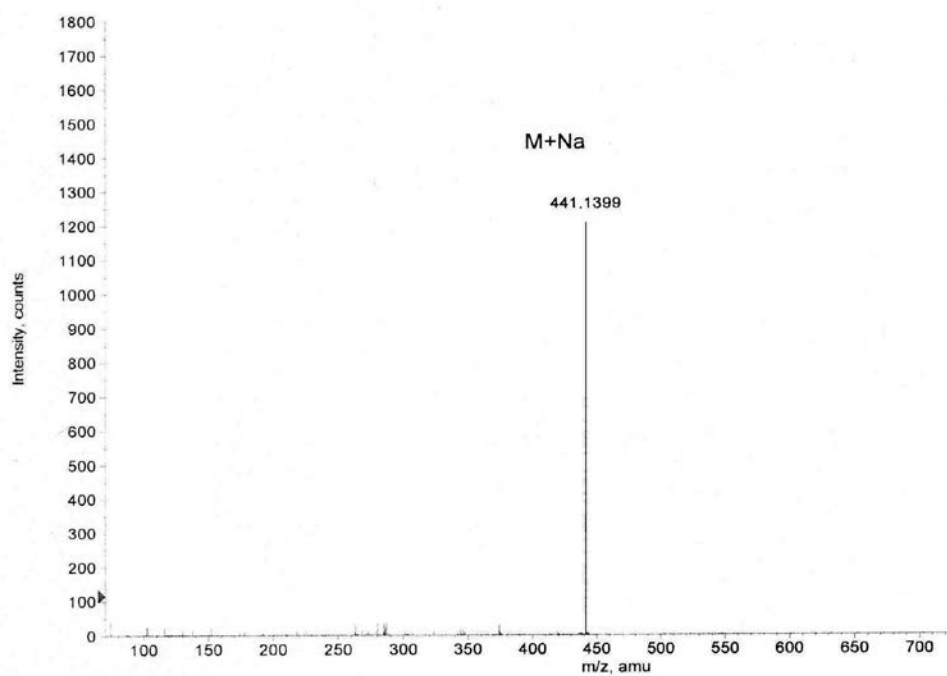
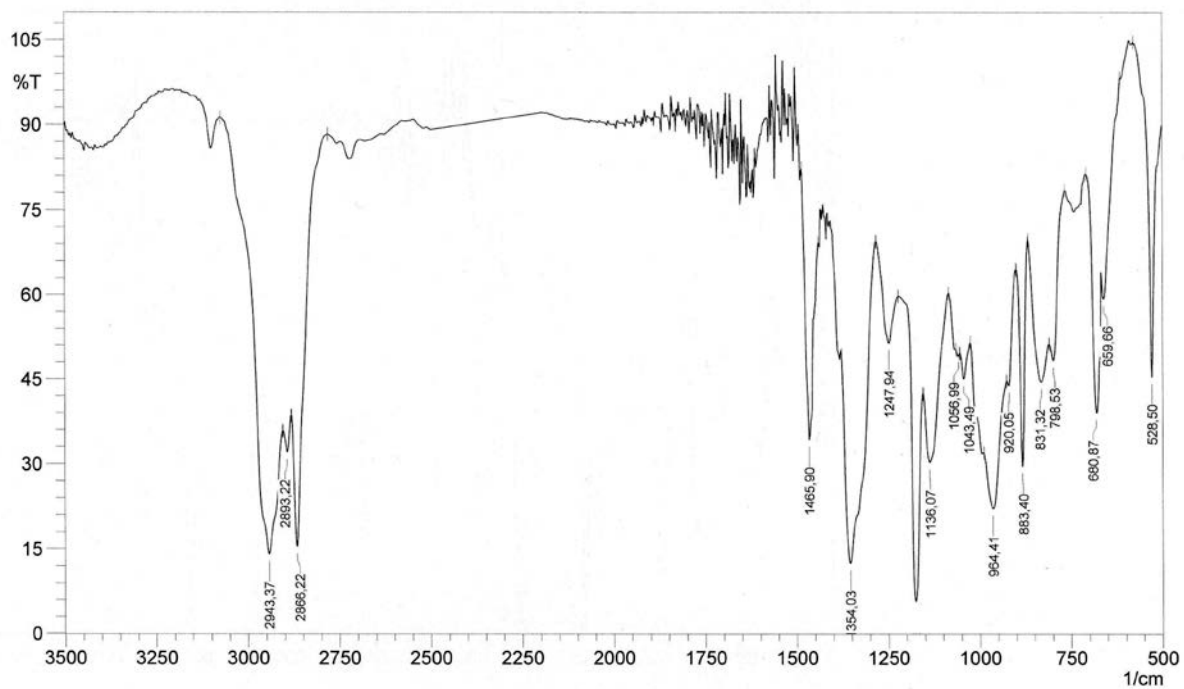
IR y HRMS del compuesto **13**:



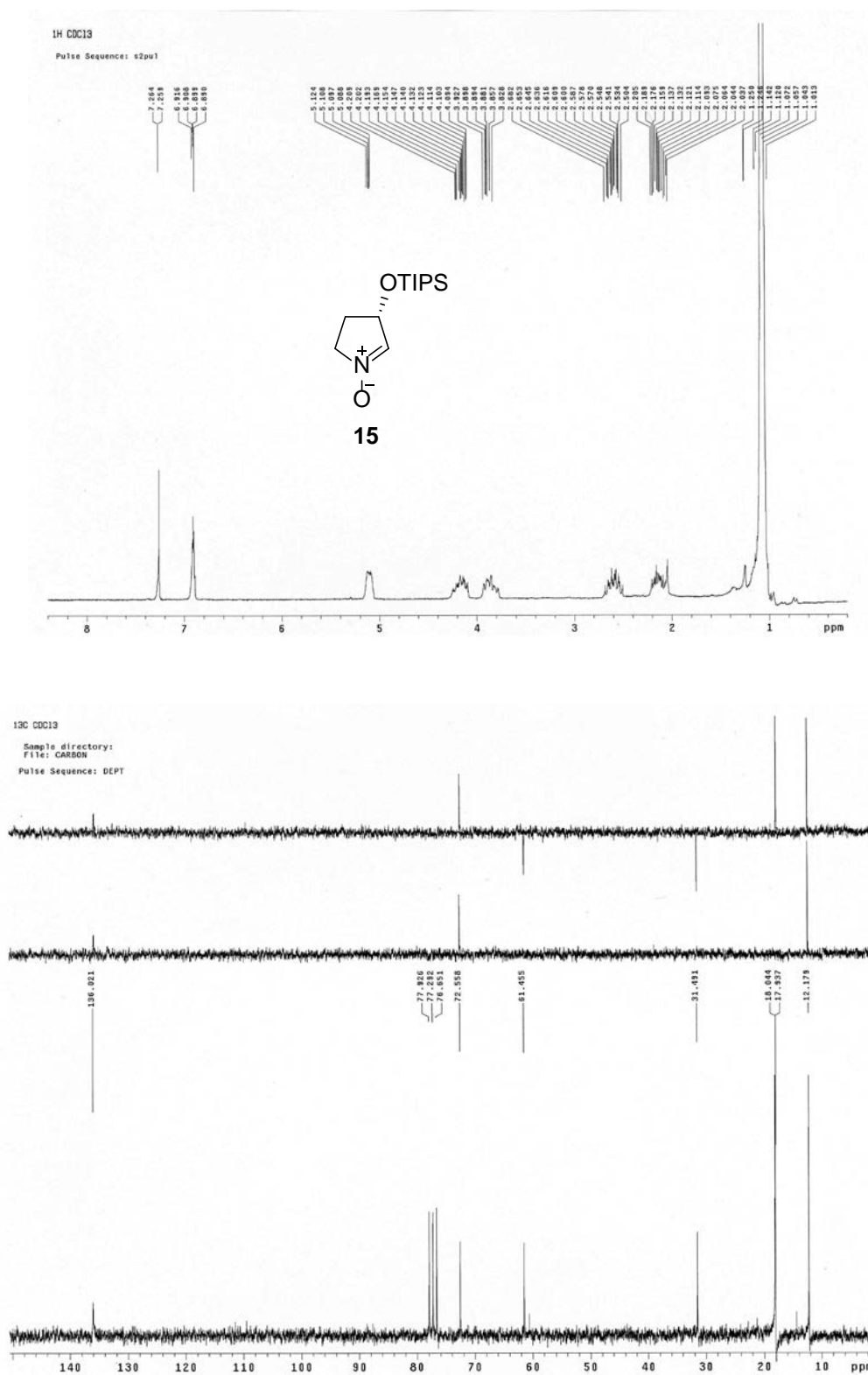
^1H y ^{13}C del compuesto **14**:



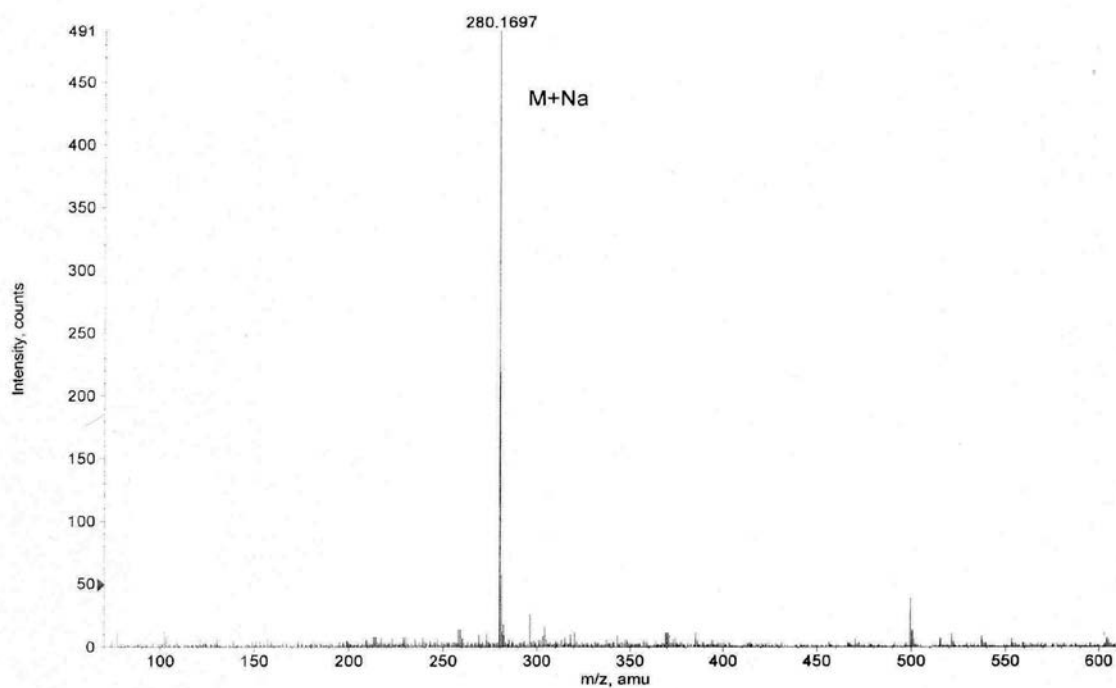
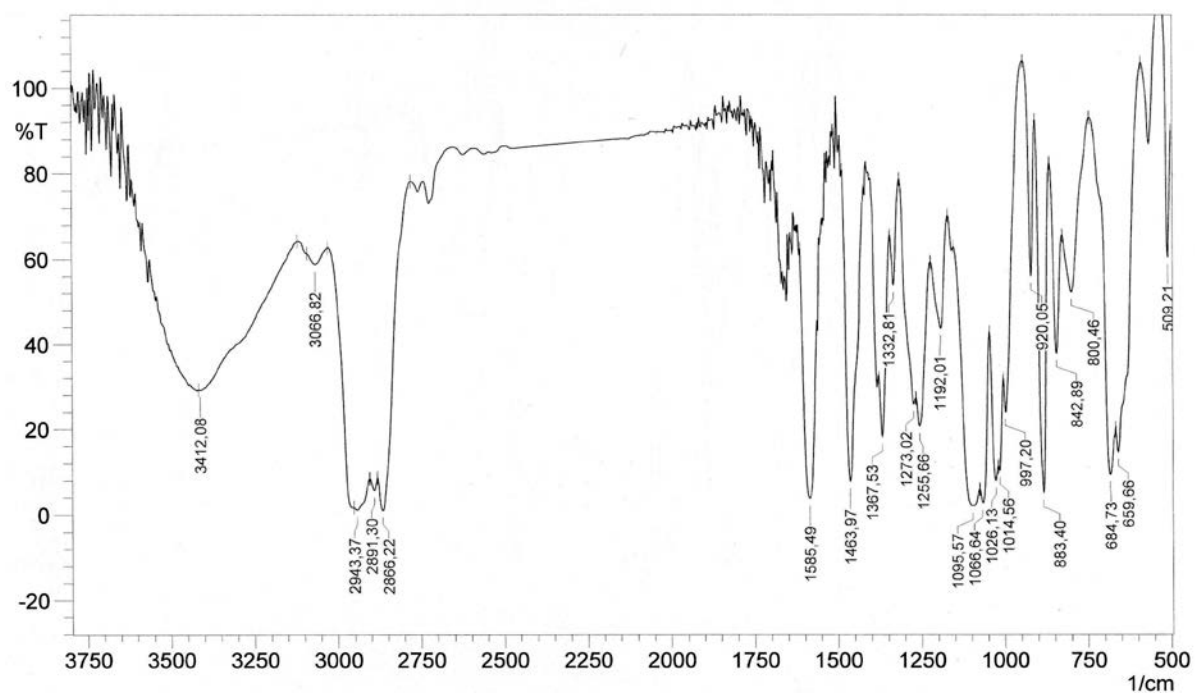
IR y HRMS del compuesto **14**:



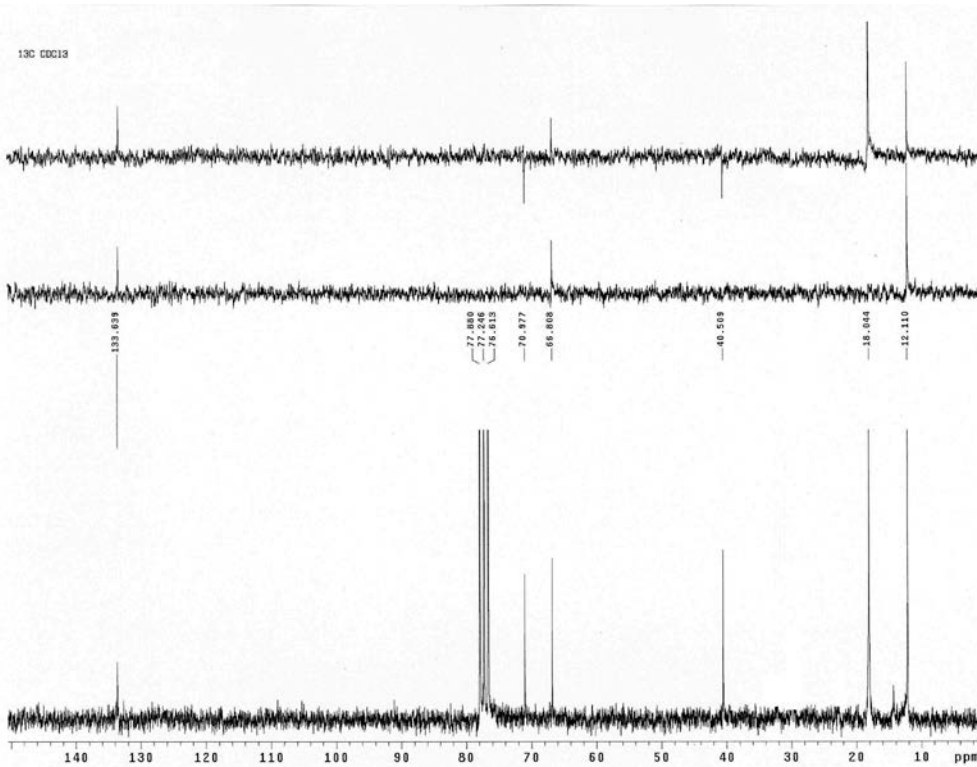
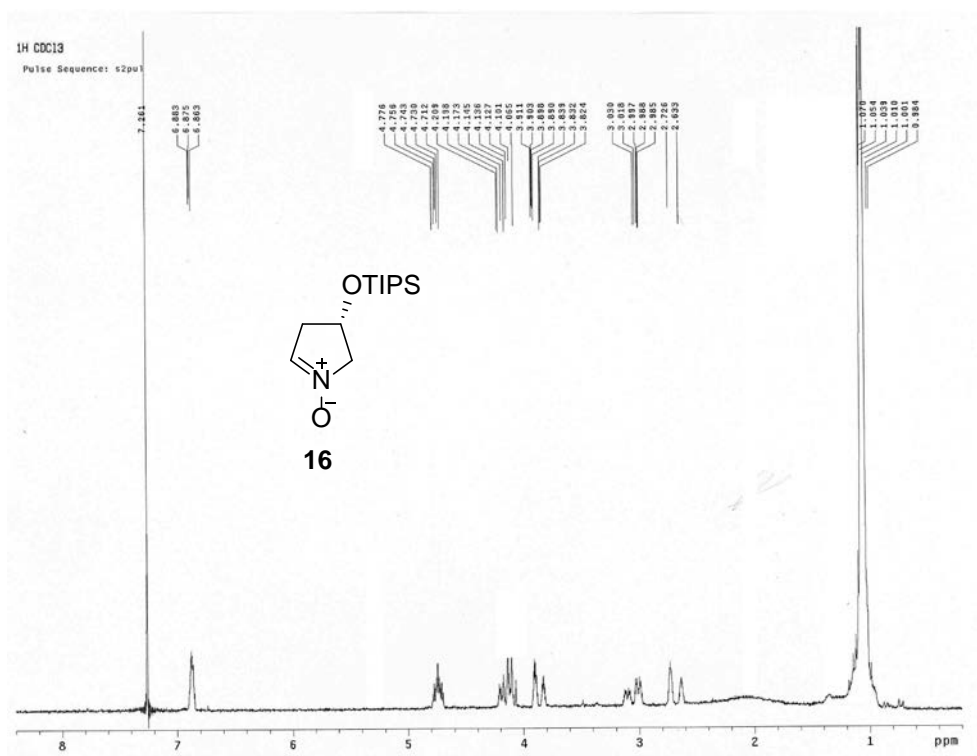
^1H y ^{13}C del compuesto **15**:



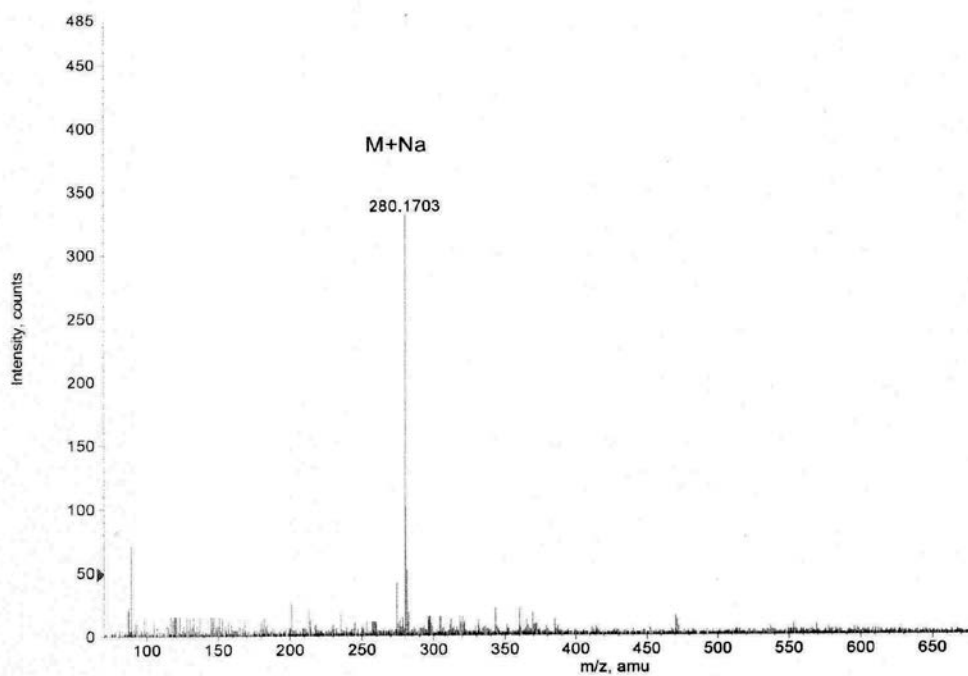
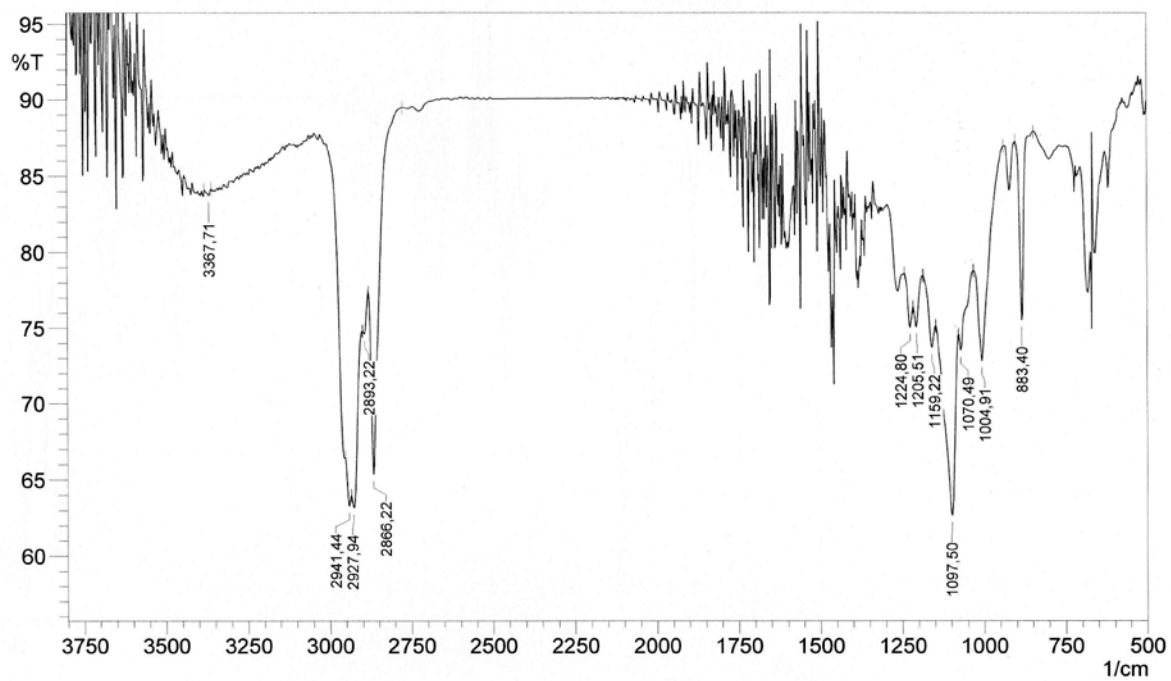
IR y HRMS del compuesto **15**:



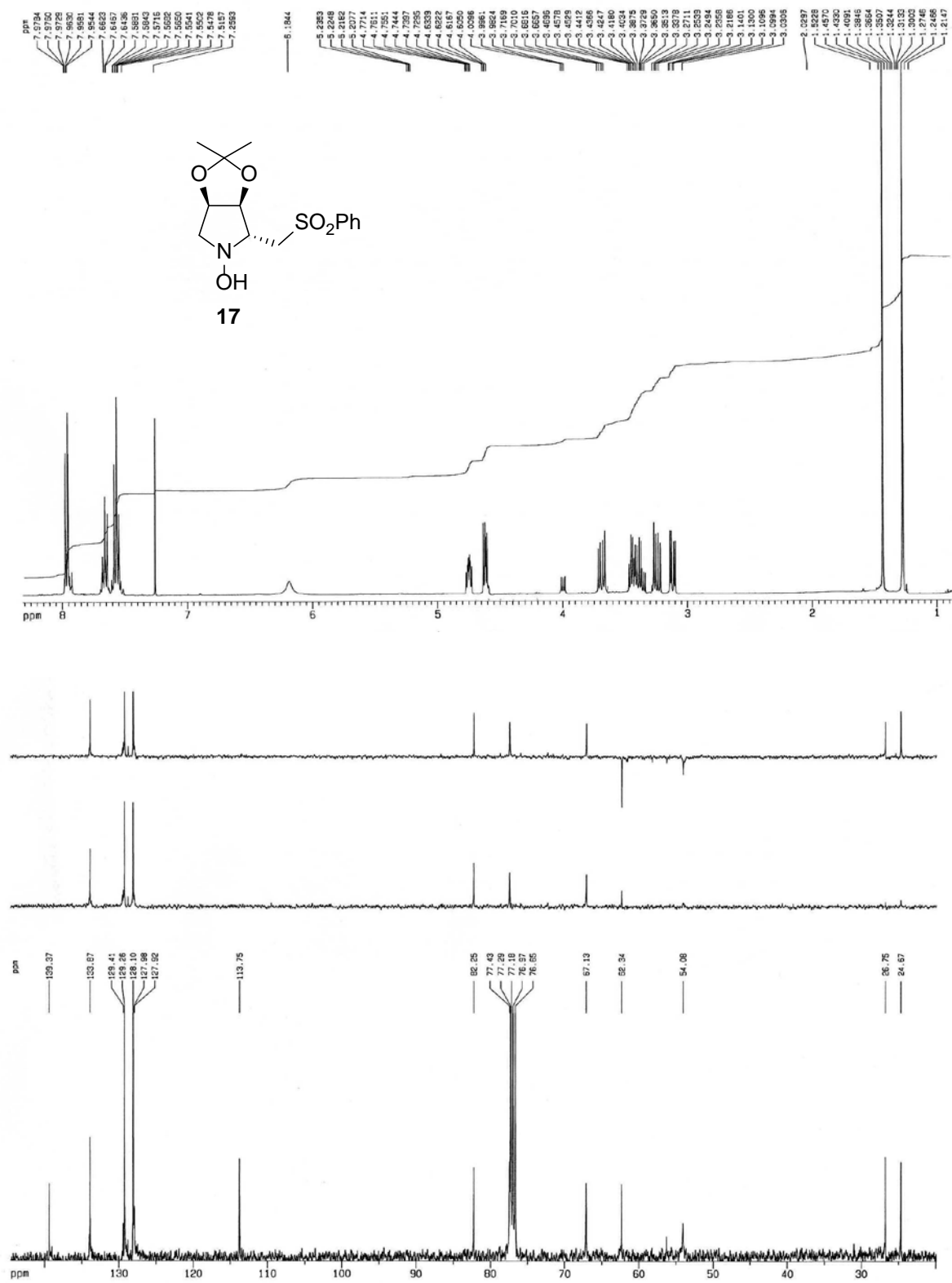
^1H y ^{13}C del compuesto **16**:

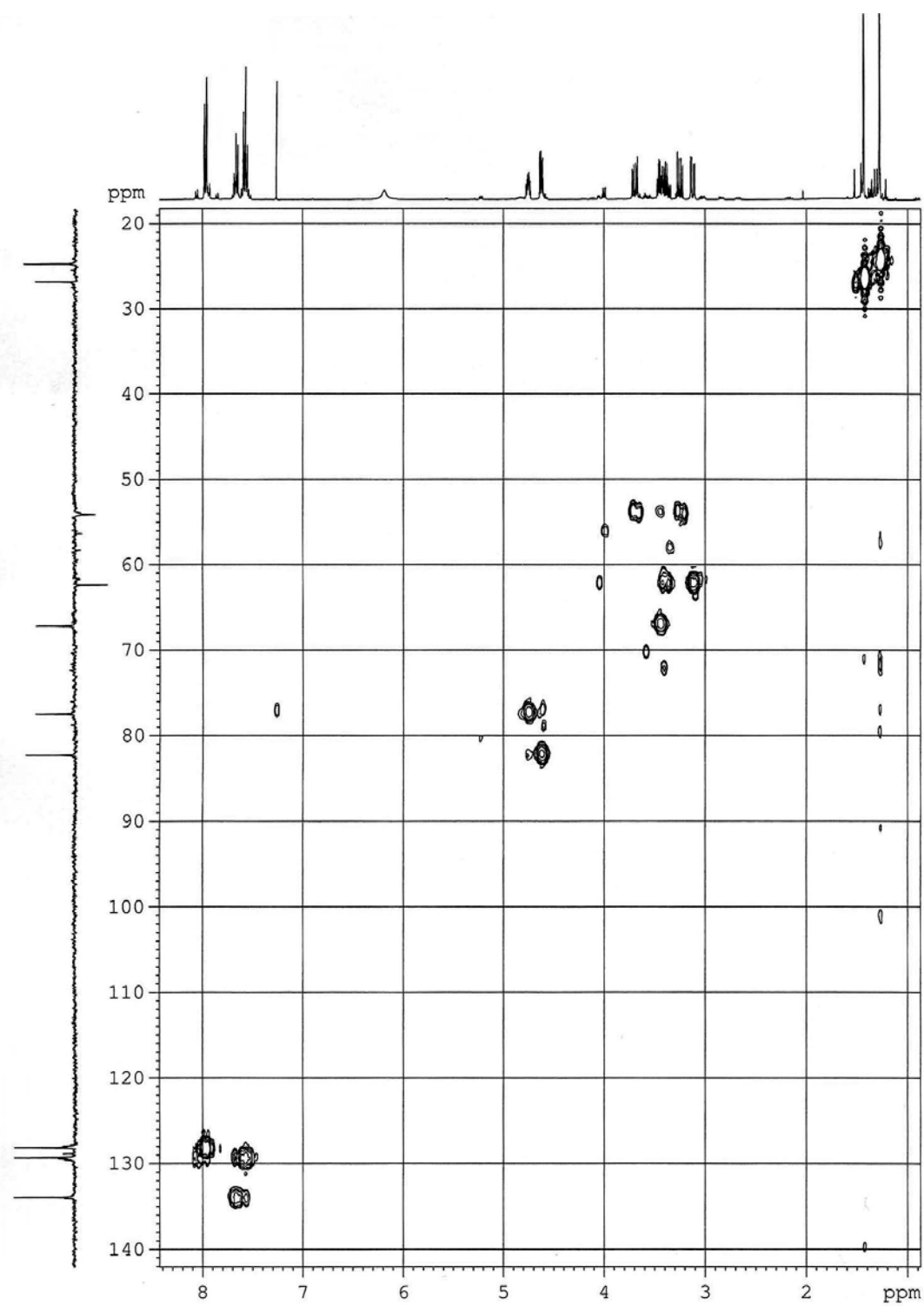


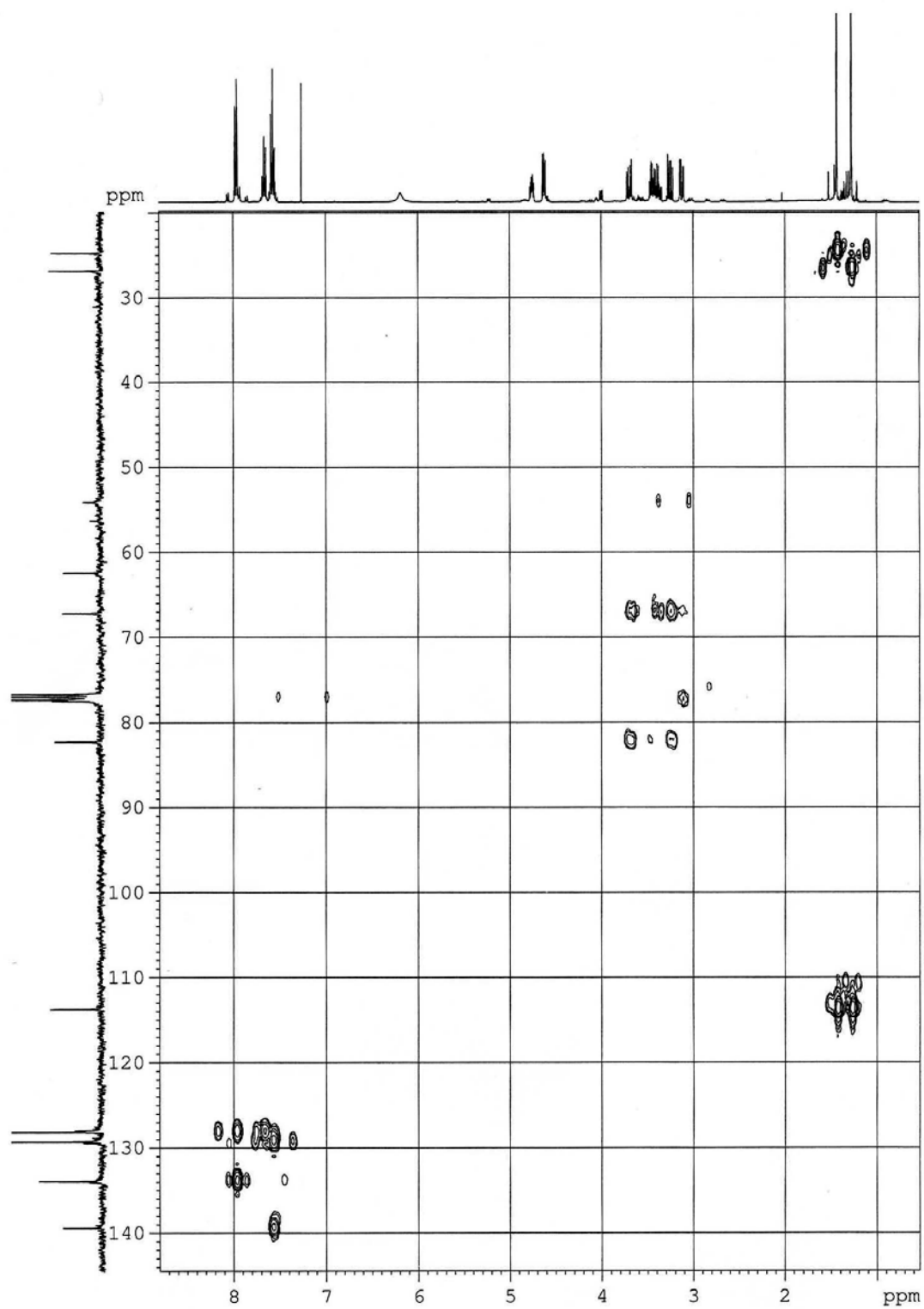
IR y HRMS del compuesto **16**:



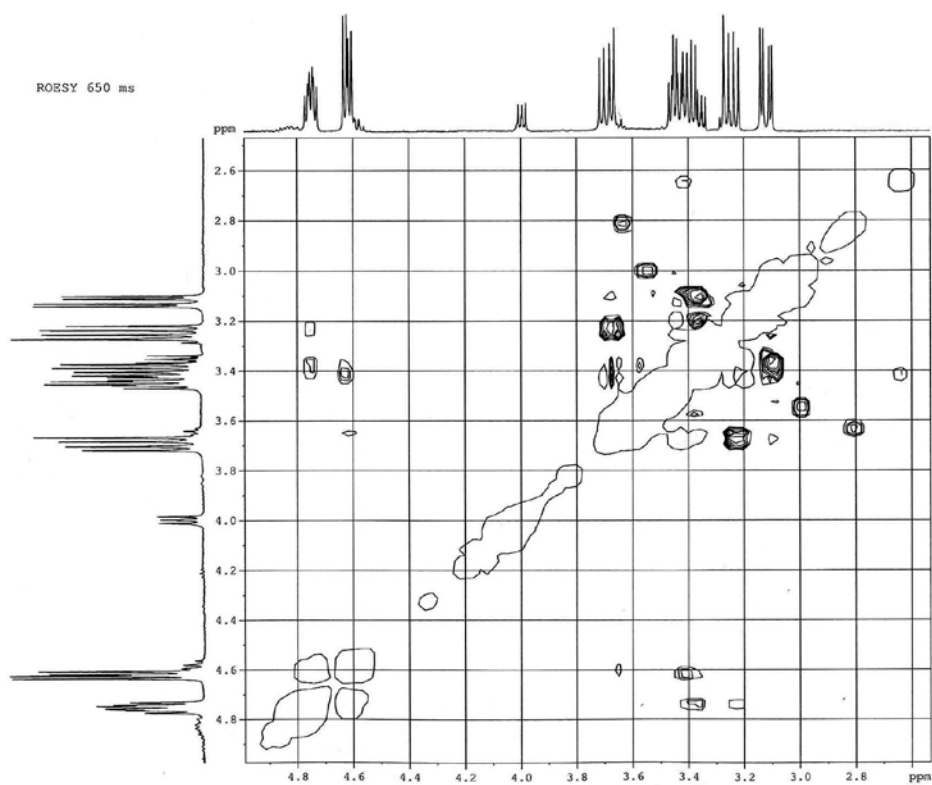
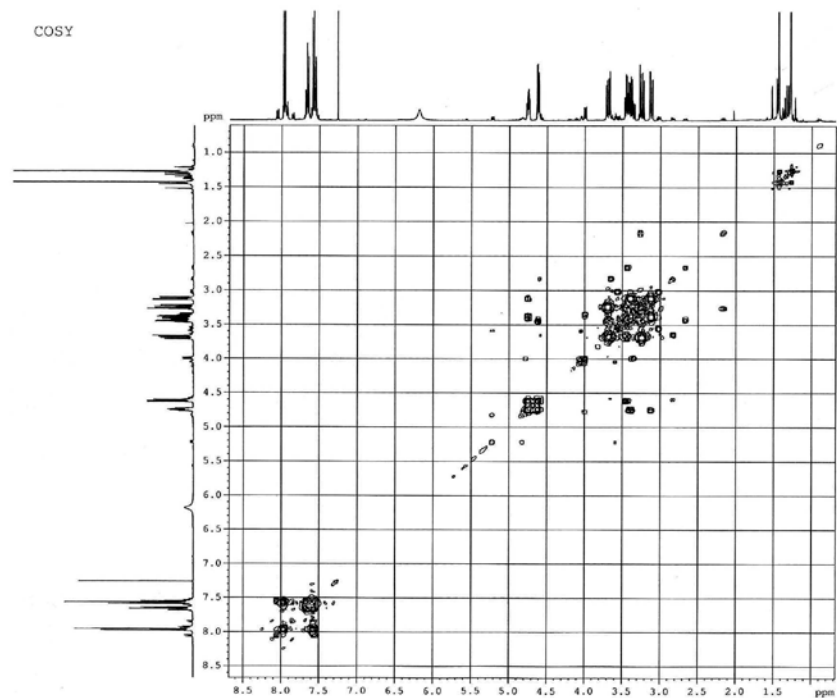
^1H y ^{13}C del compuesto **17**:



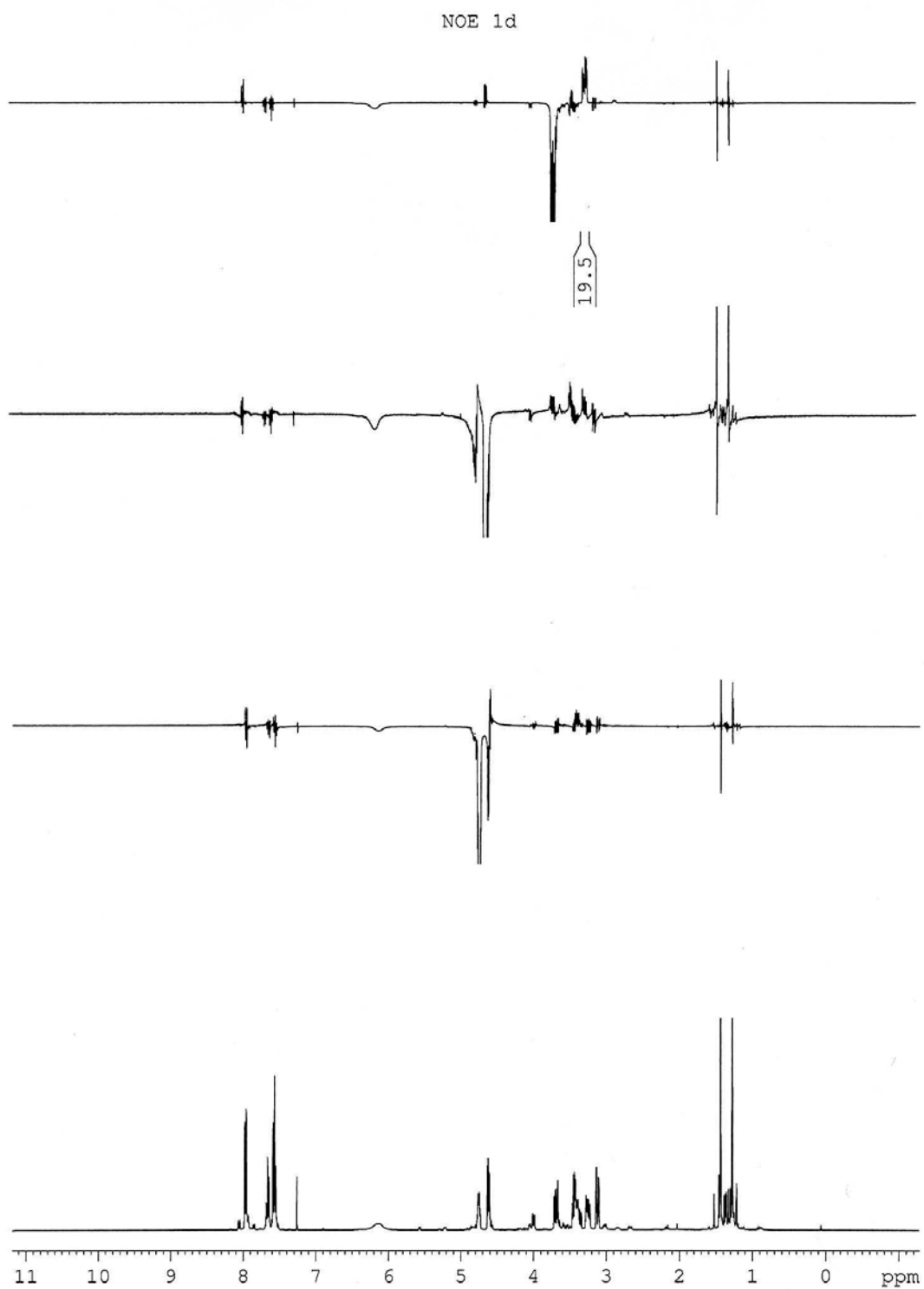
HMQC del compuesto **17**:

HMBC del compuesto **17**:

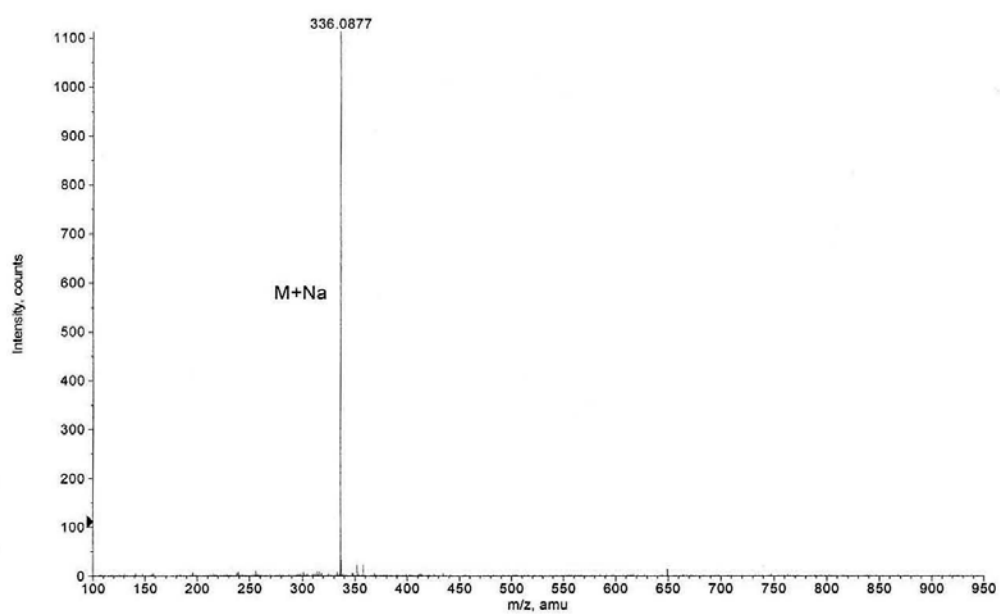
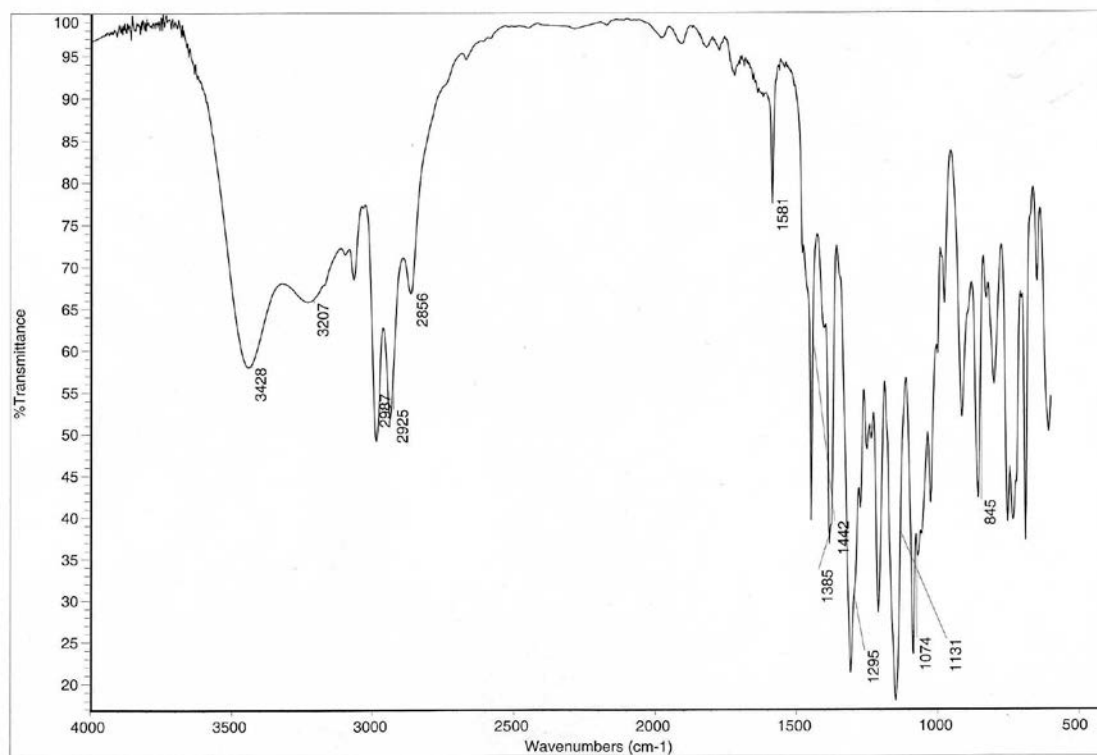
Cosy y Roesy del compuesto **17**:



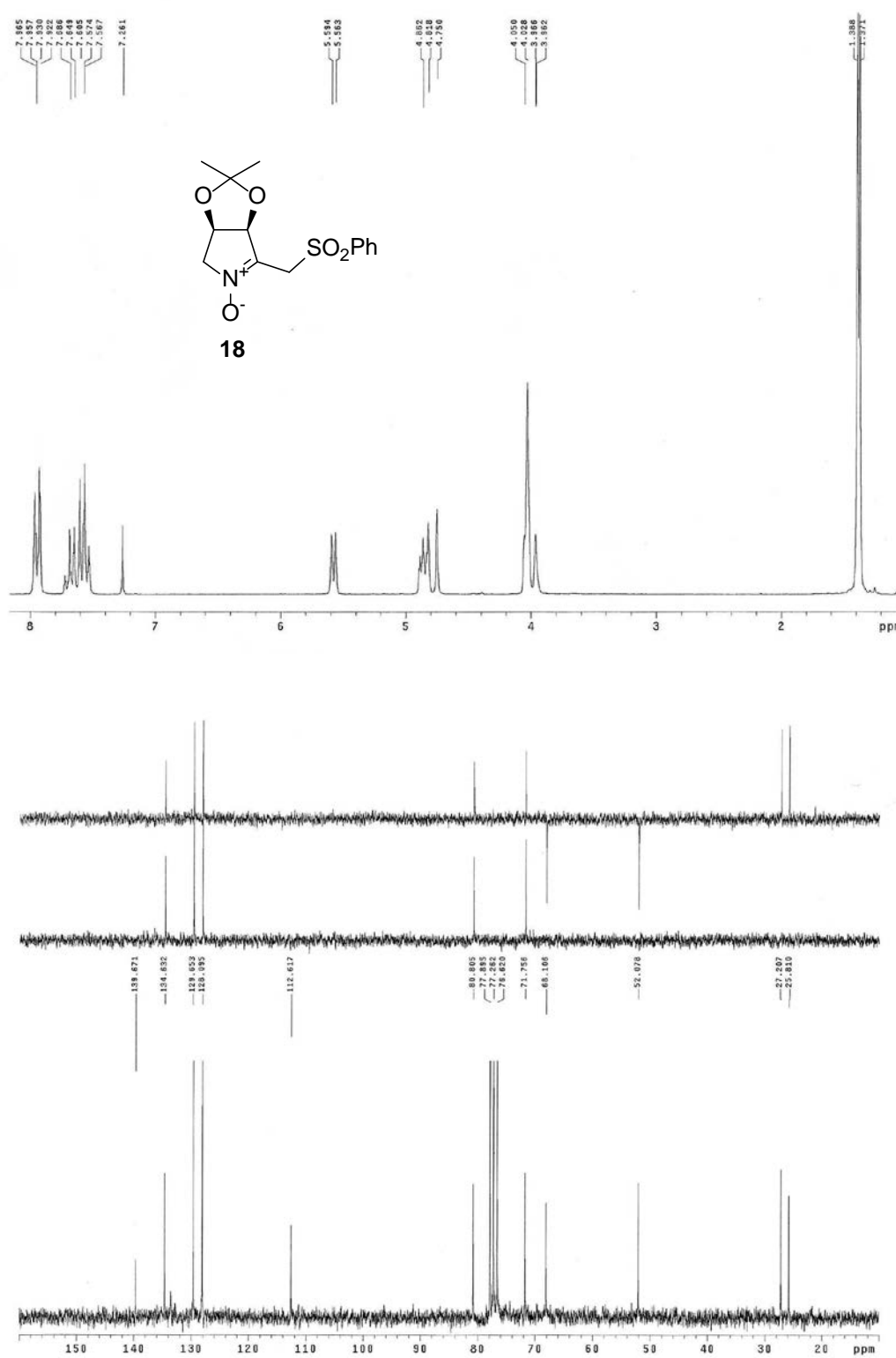
Noe del compuesto **17**:



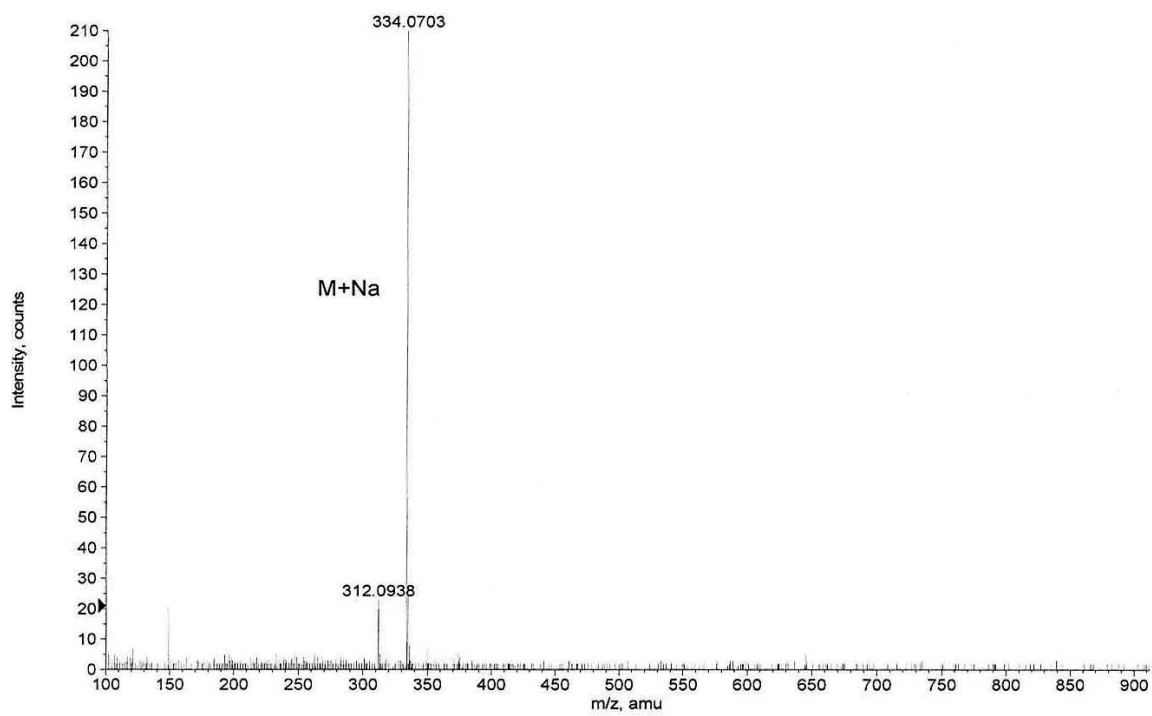
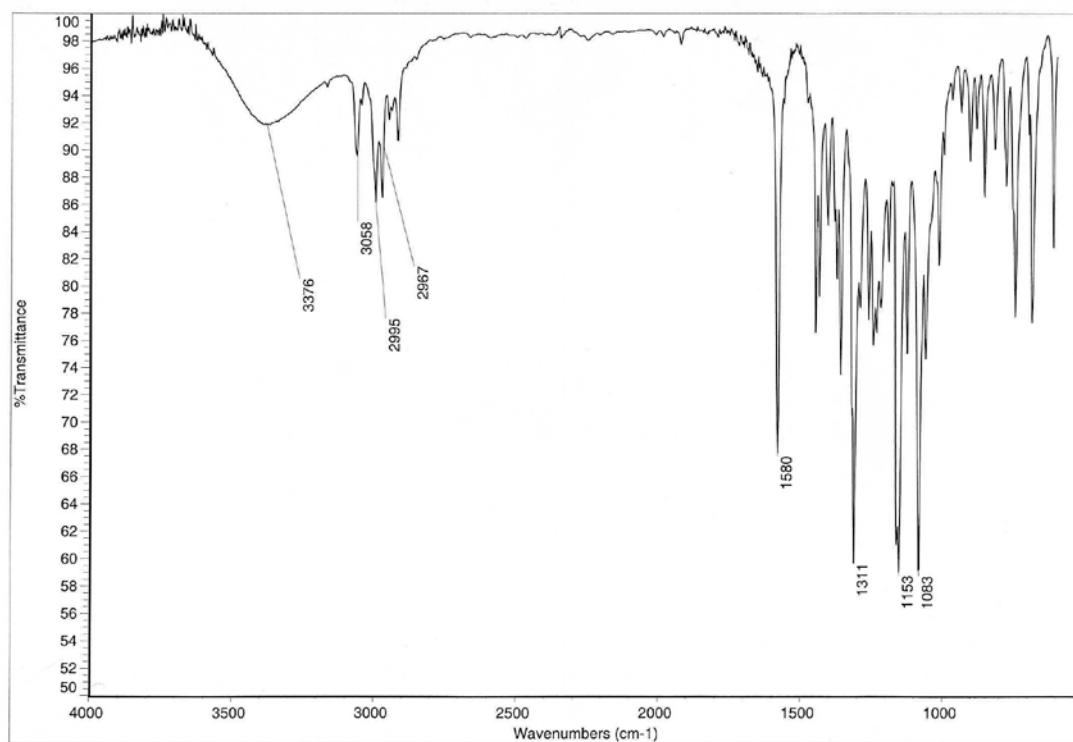
IR y HRMS del compuesto **17**:

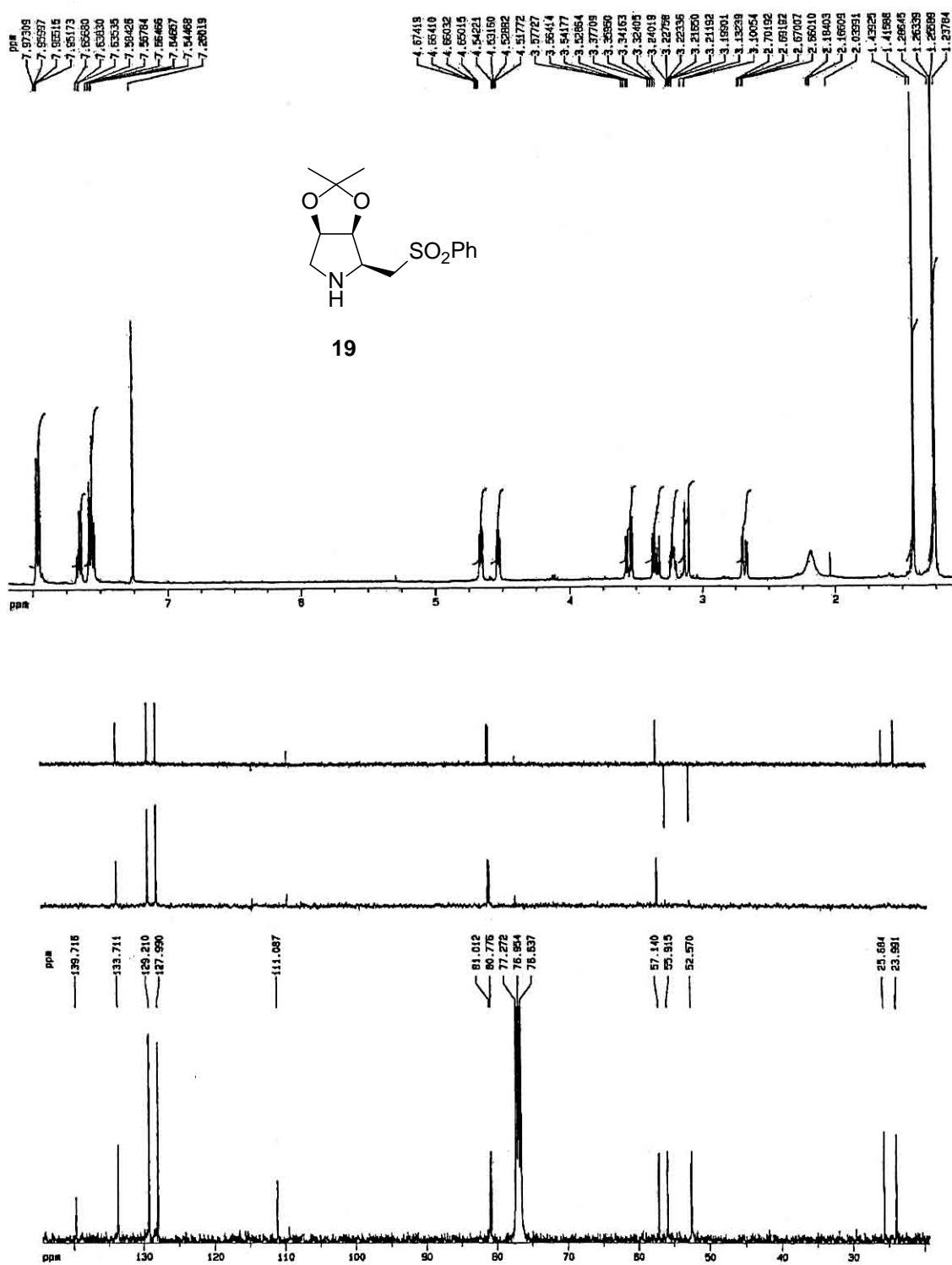


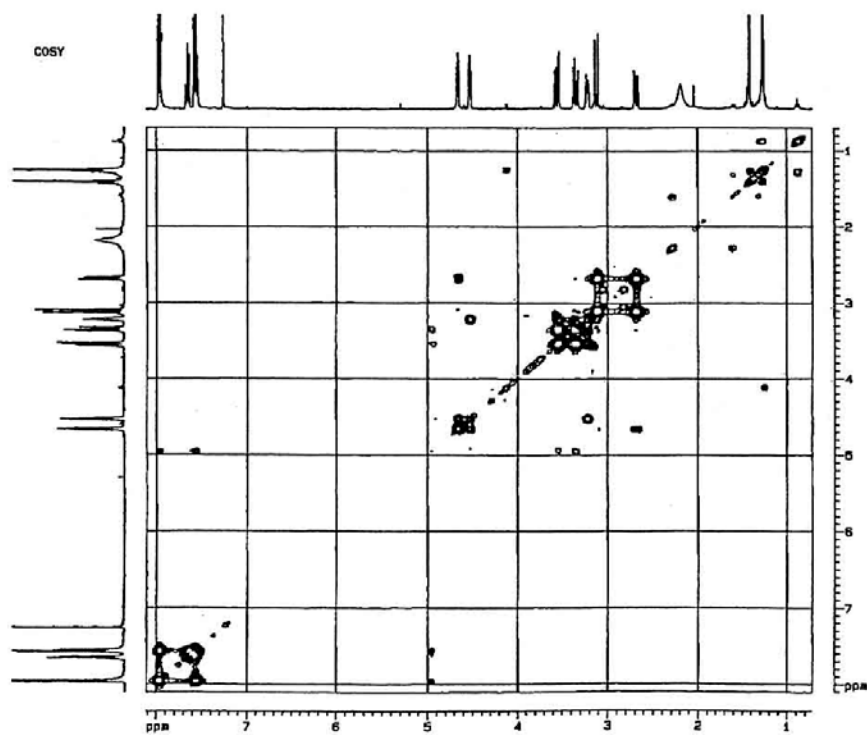
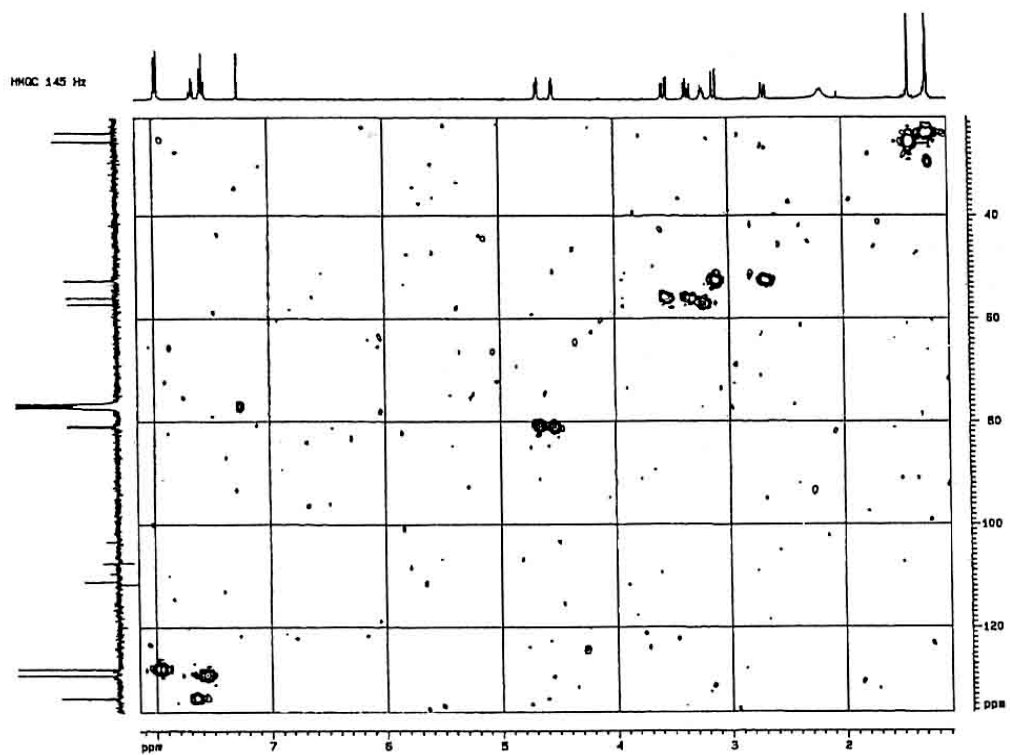
^1H y ^{13}C del compuesto **18**:



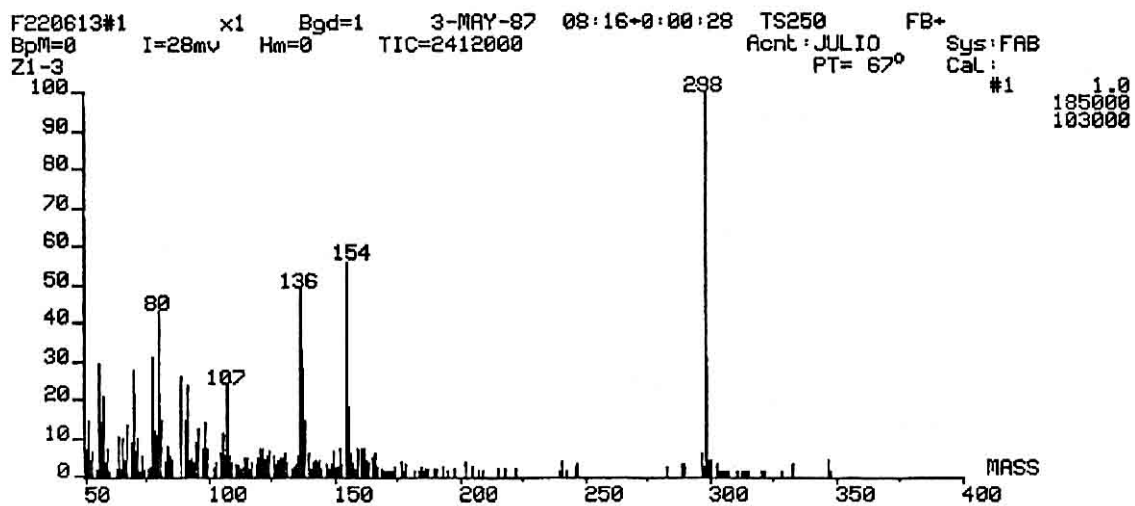
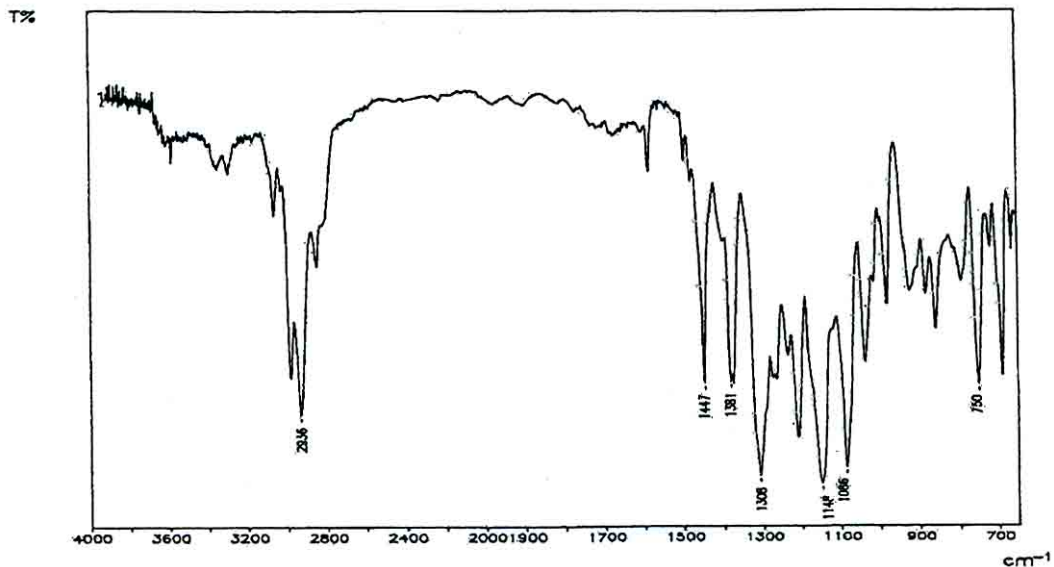
IR y HRMS del compuesto **18**:



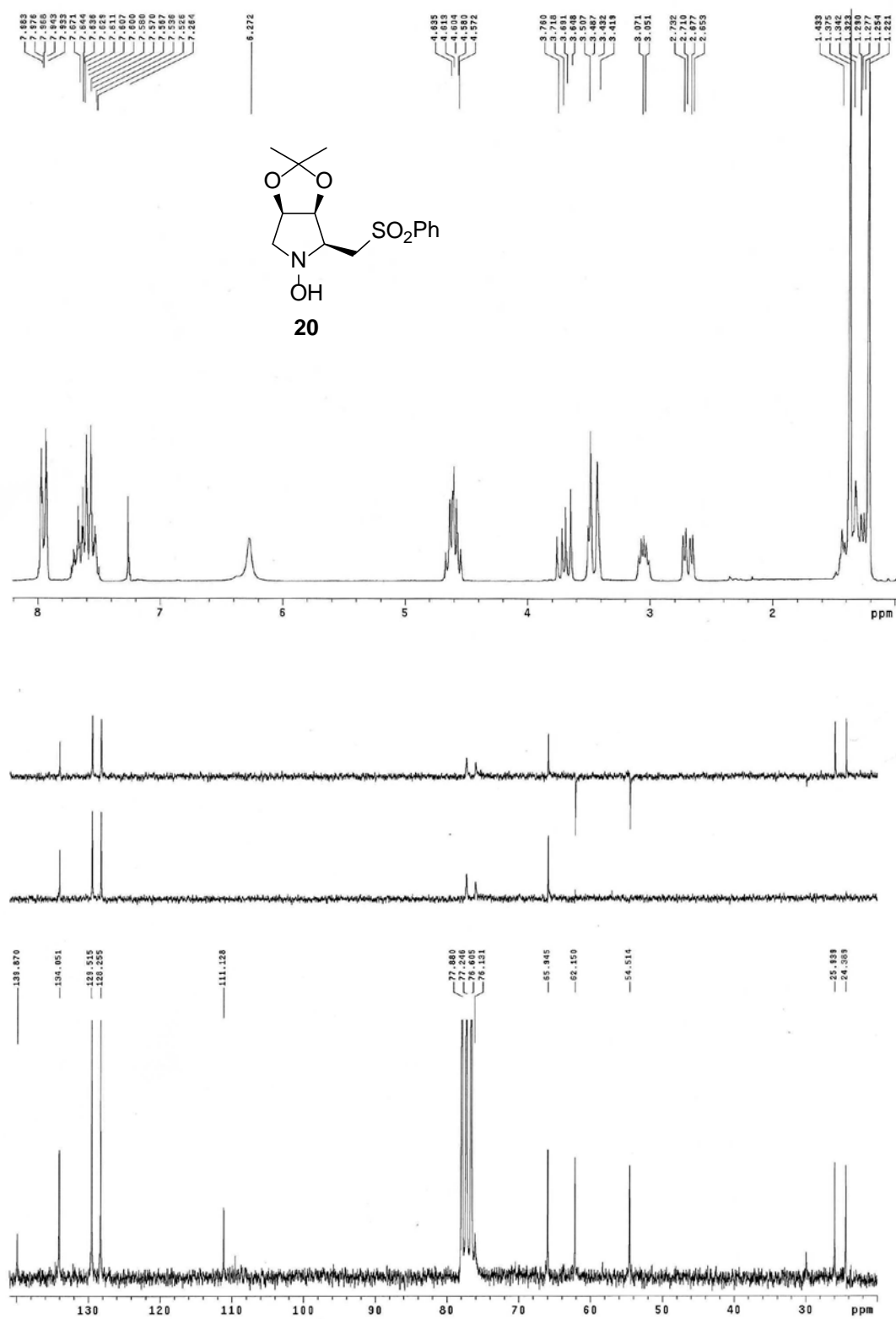
^1H y ^{13}C del compuesto **19**:

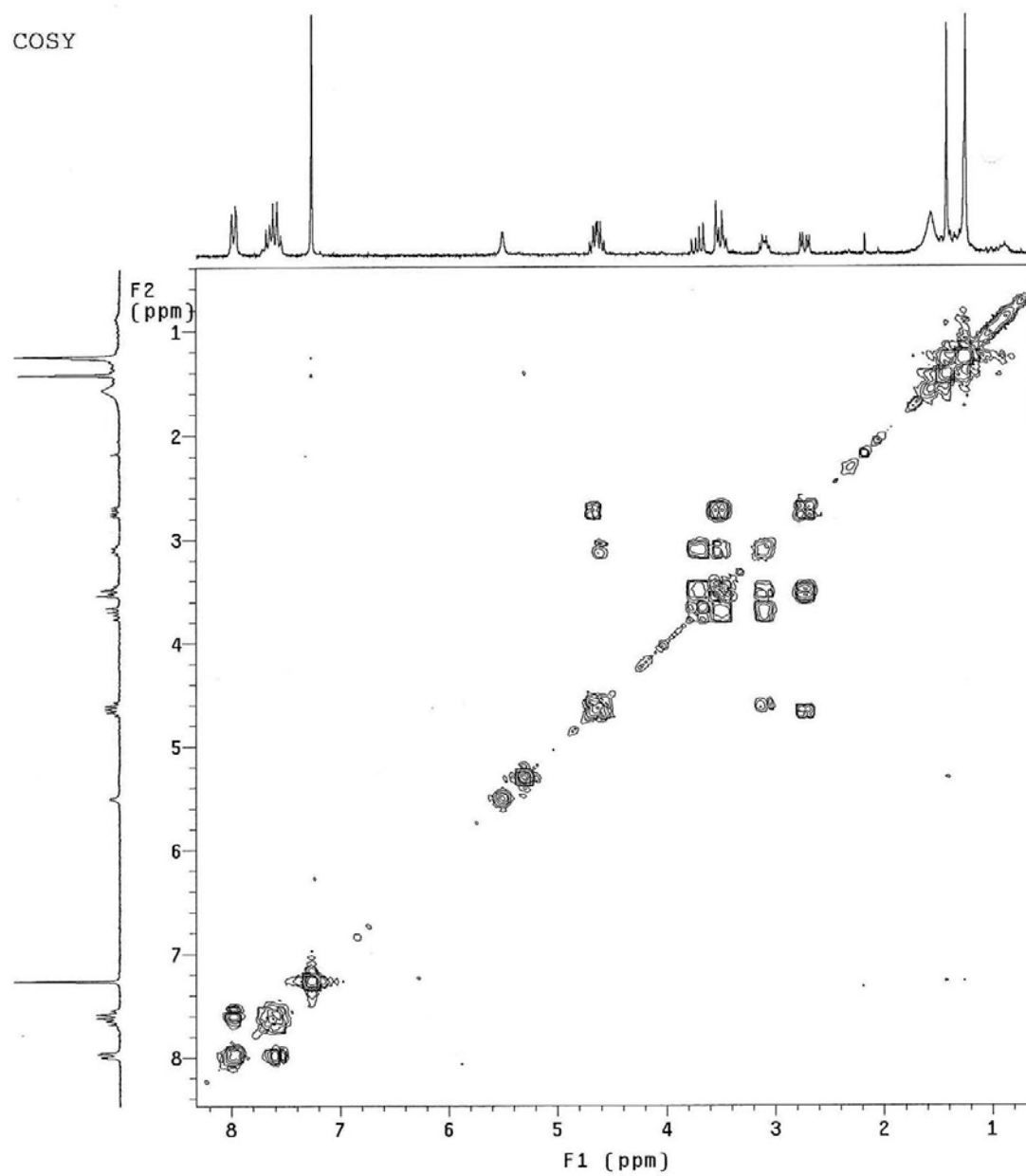
HMQC y Cosy del compuesto **19**:

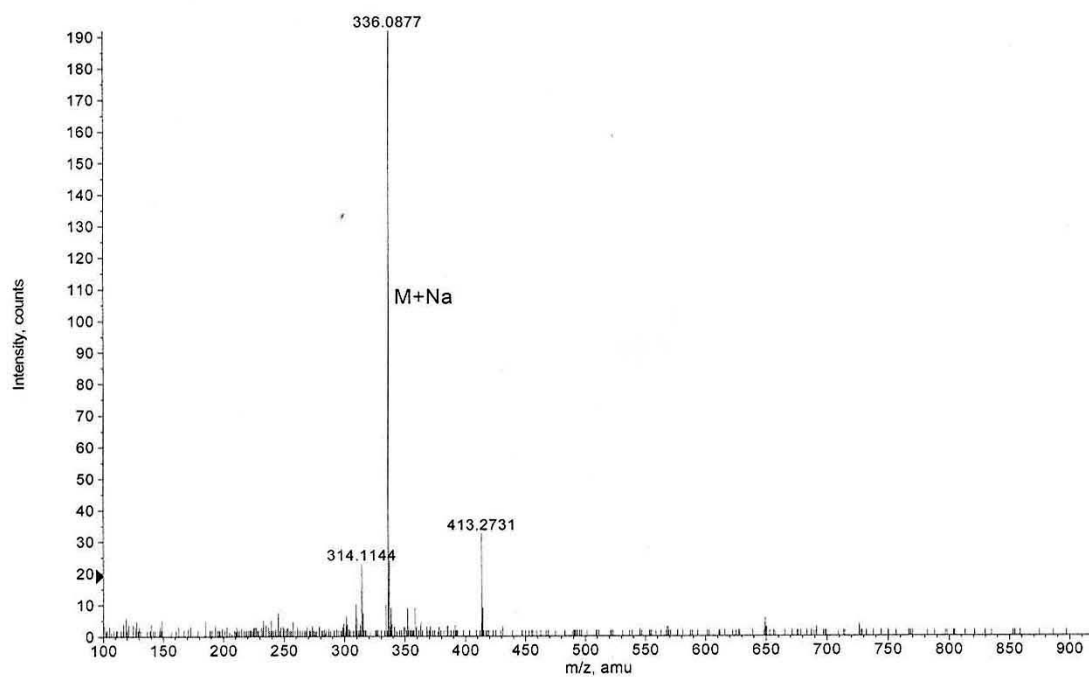
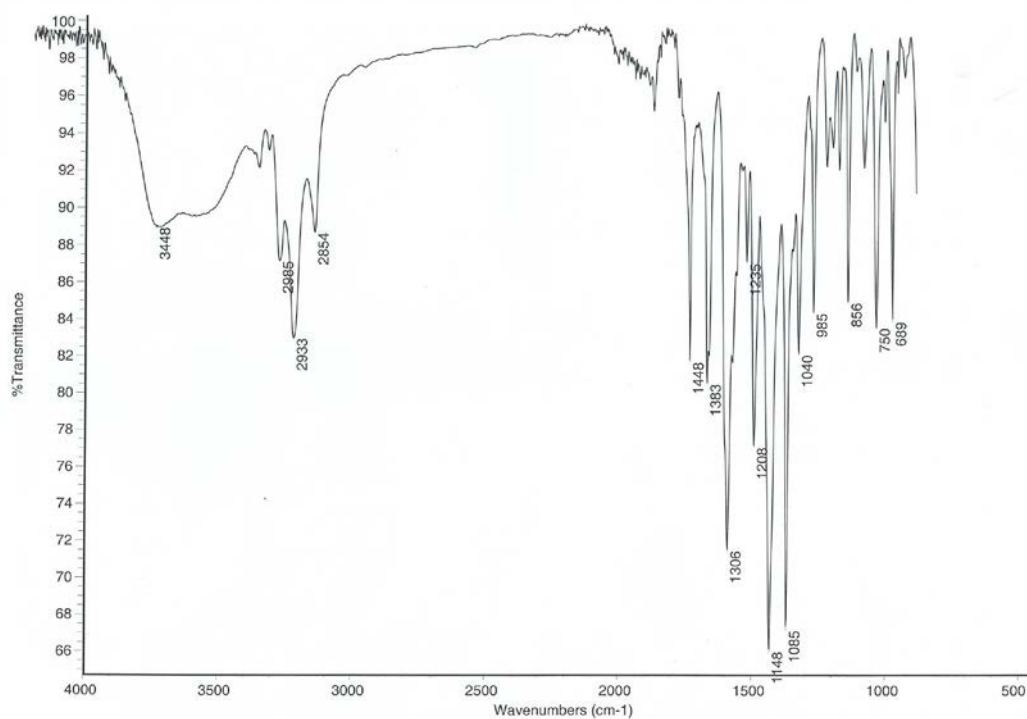
IR y HRMS del compuesto **19**:



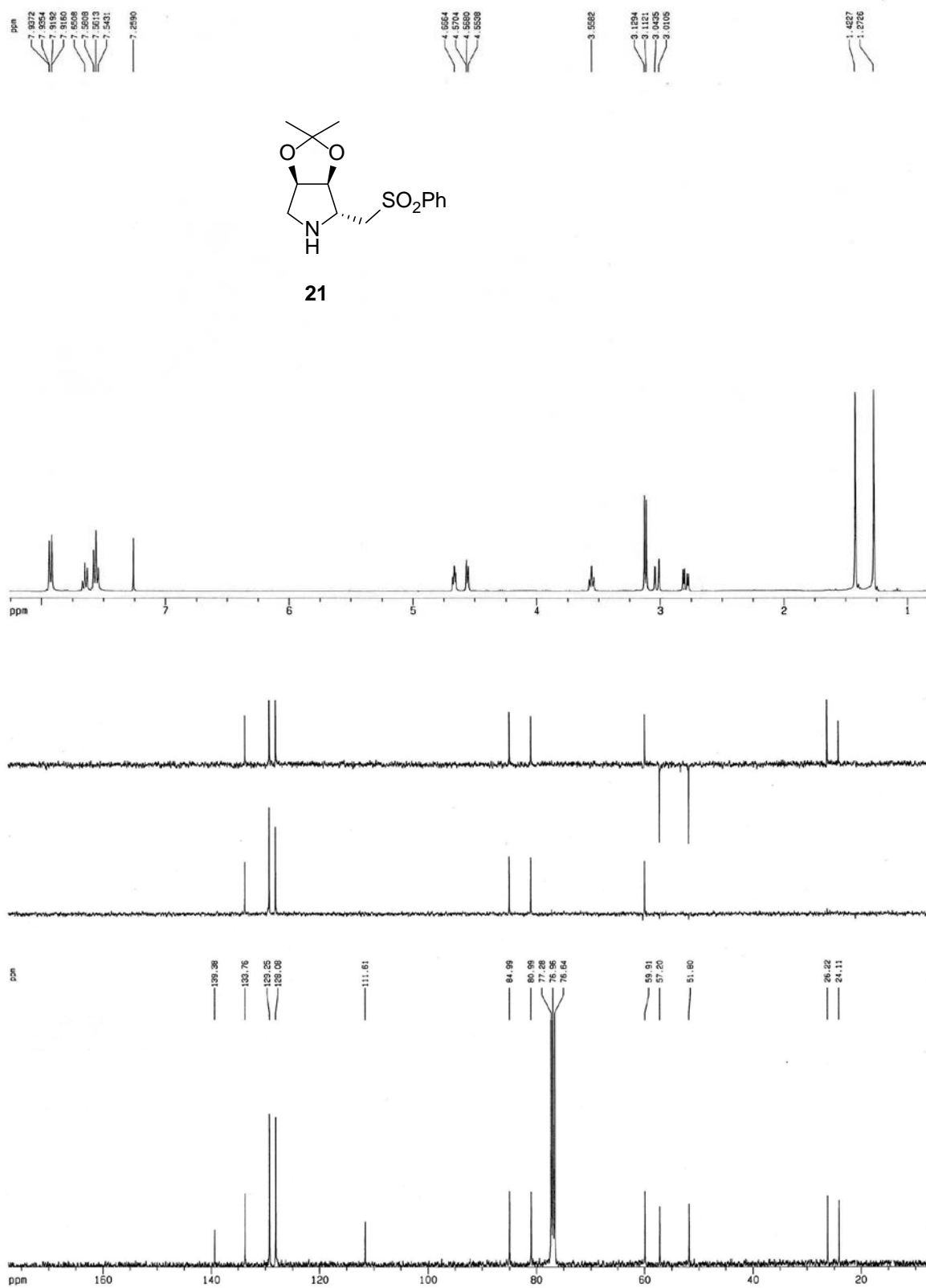
^1H y ^{13}C del compuesto **20**:

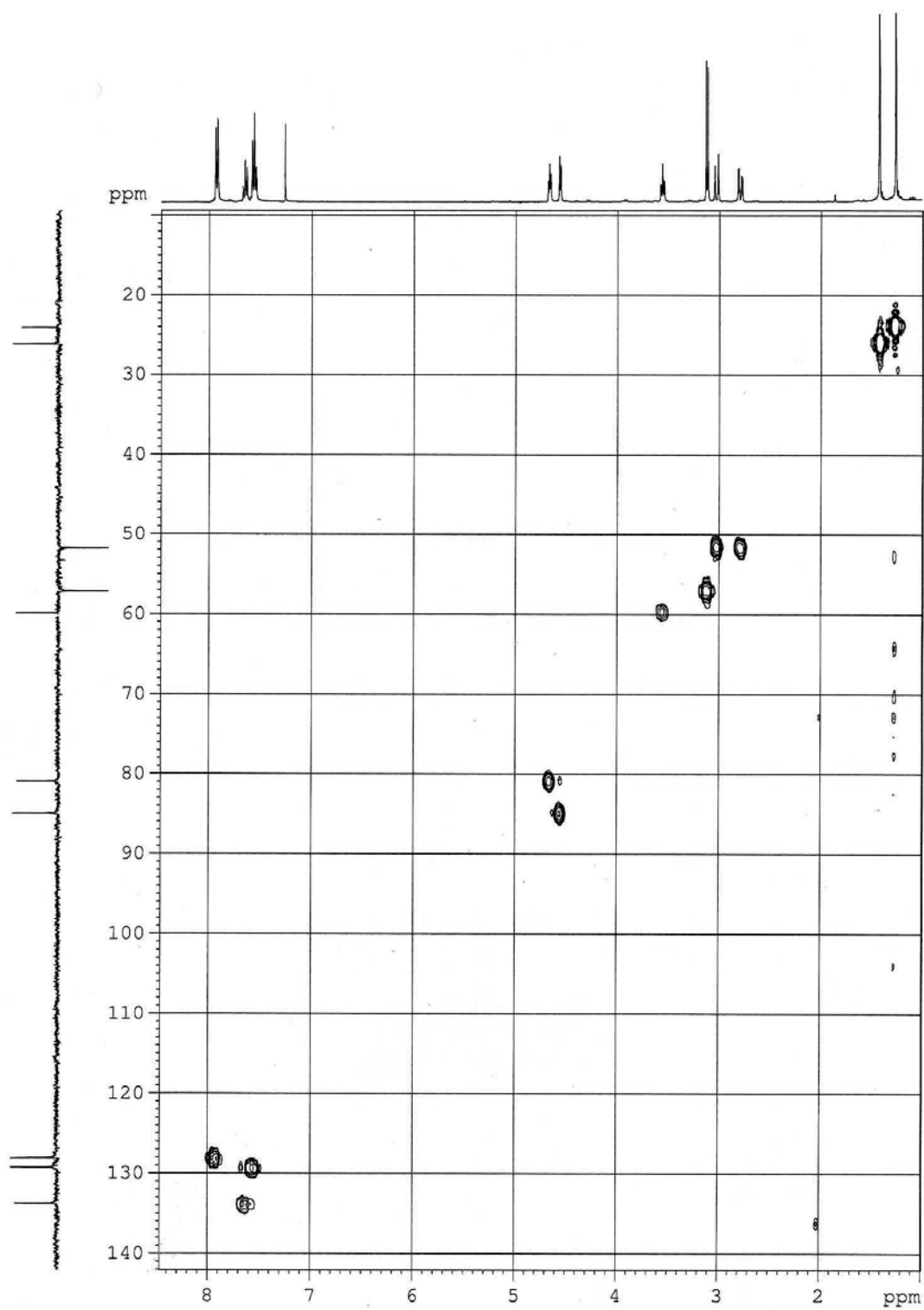


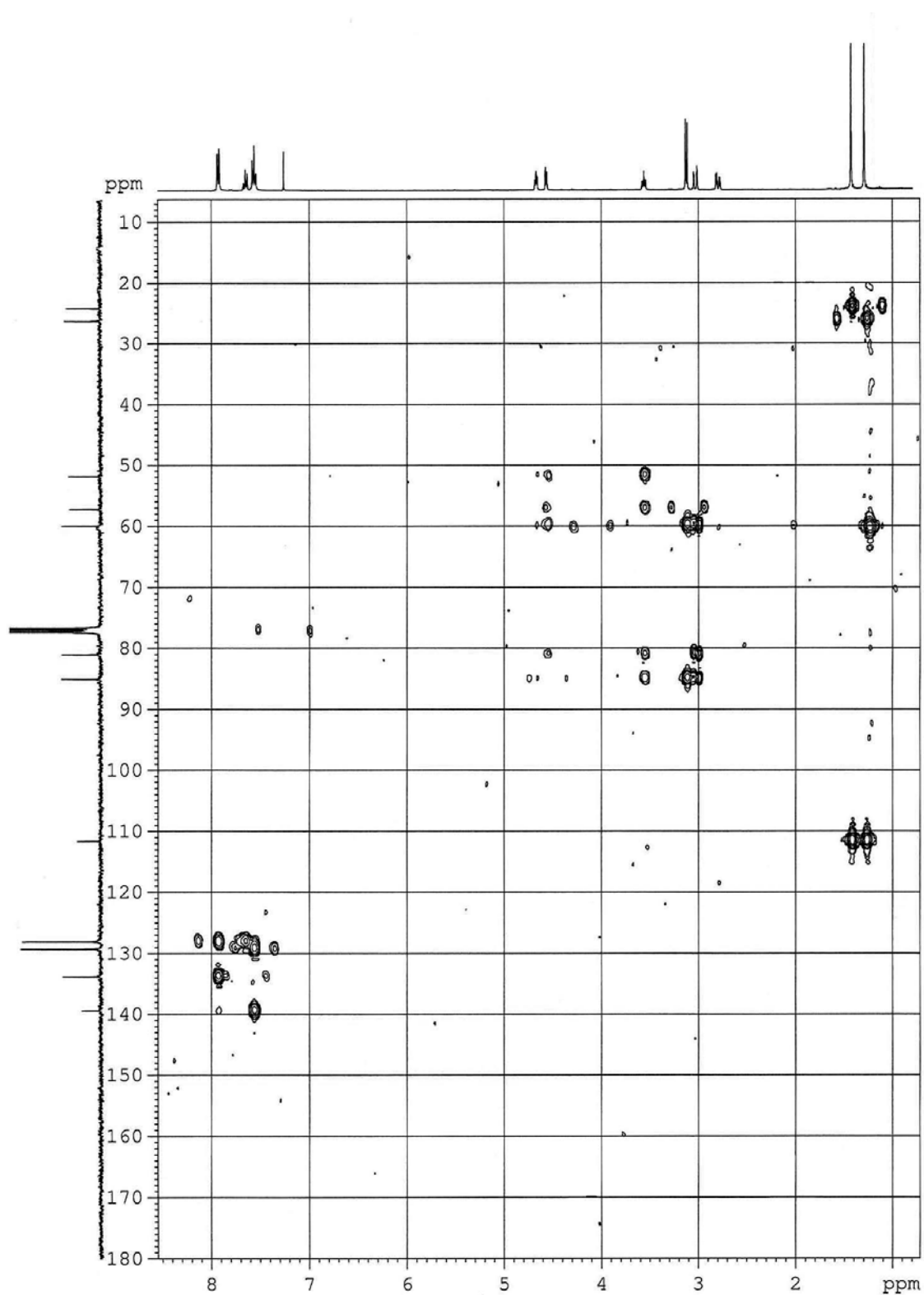
Cosy del compuesto **20**:

IR y HRMS del compuesto **20**:

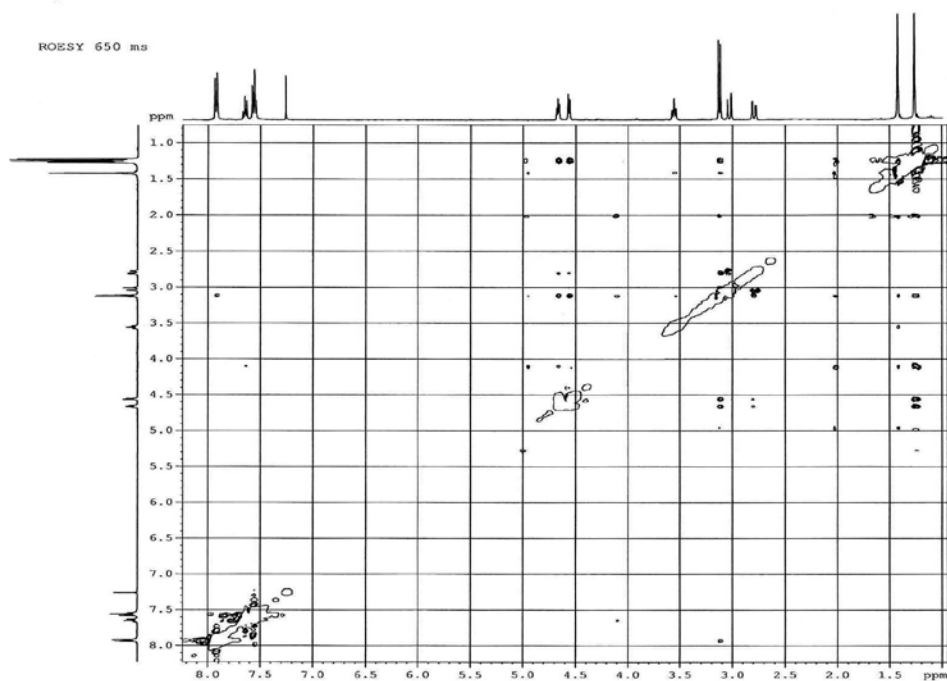
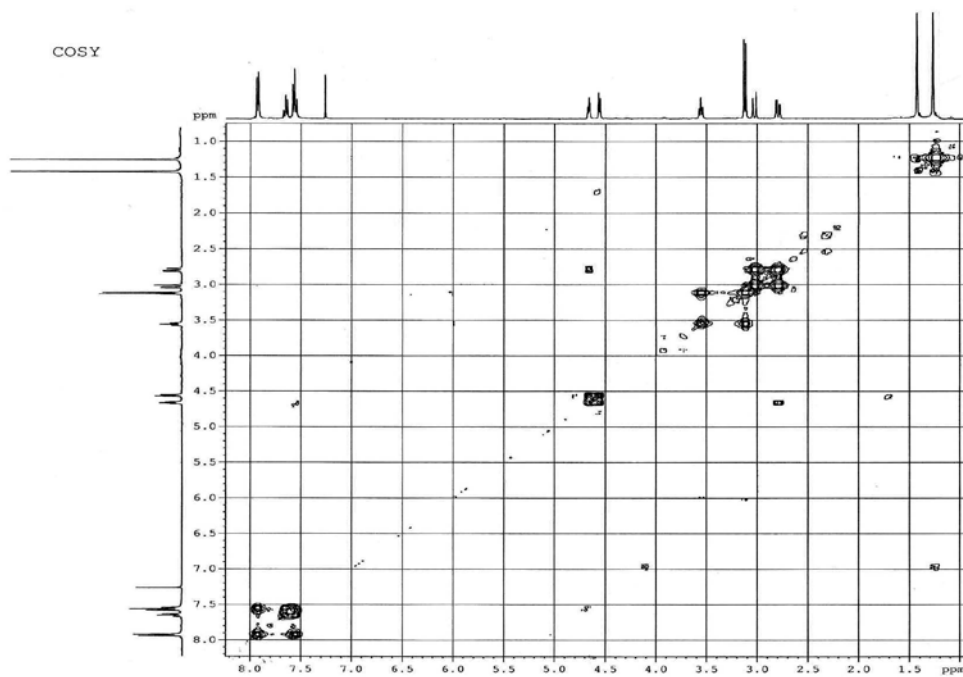
^1H y ^{13}C del compuesto **21**:



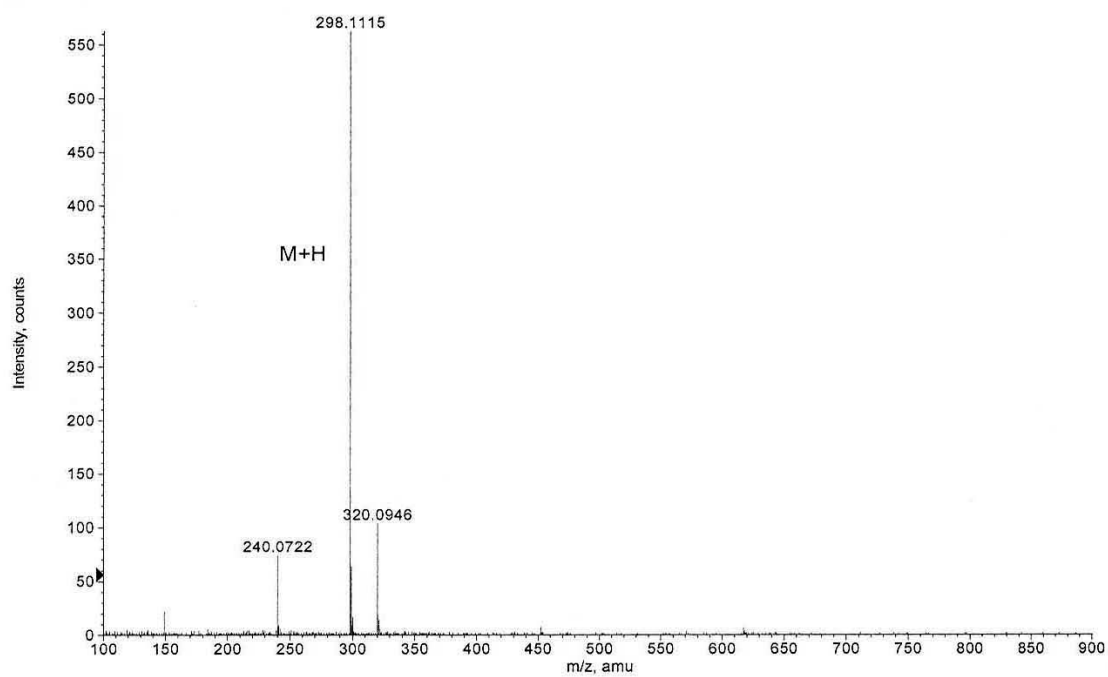
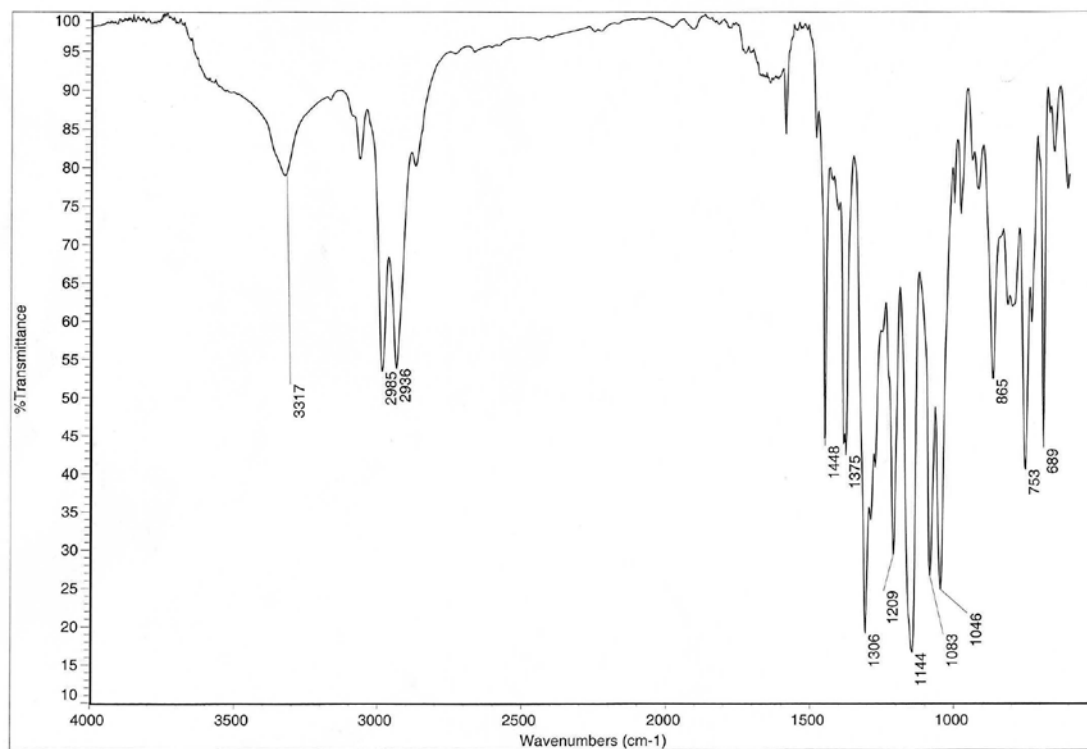
HMQC del compuesto **21**:

HMBC del compuesto **21**:

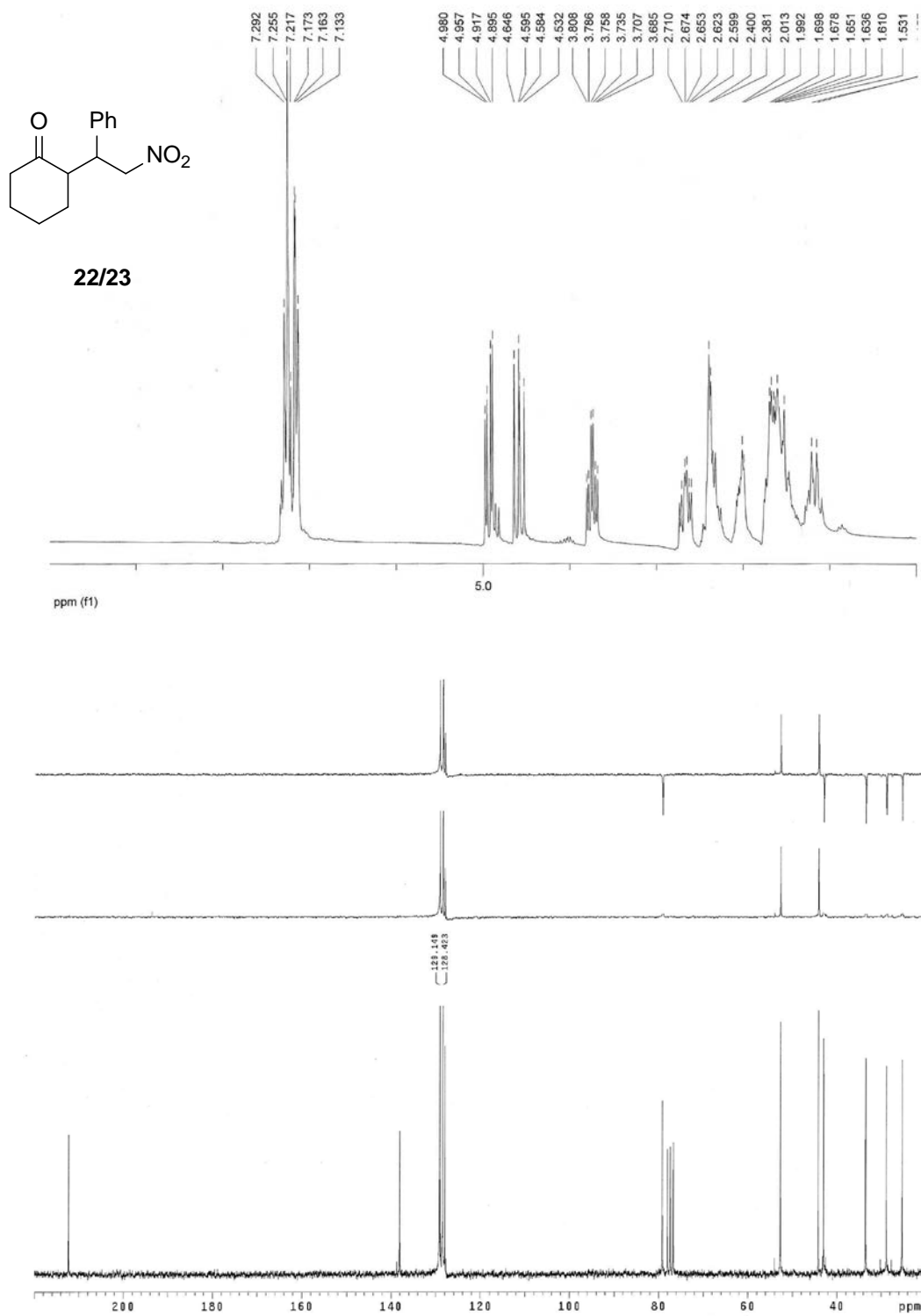
Cosy y Roesy del compuesto **21**:



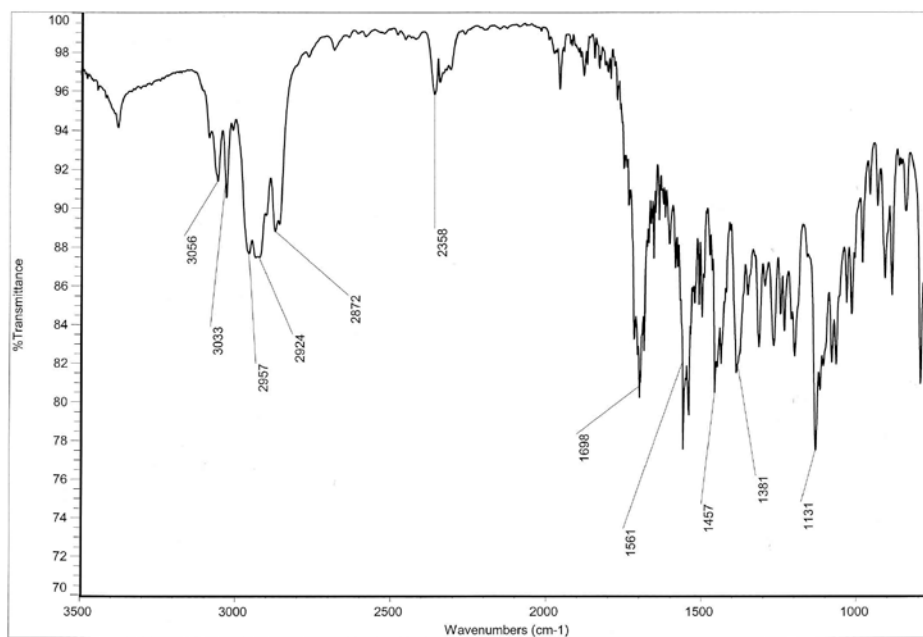
IR y HRMS del compuesto **21**:



^1H y ^{13}C del compuesto **22/23**:

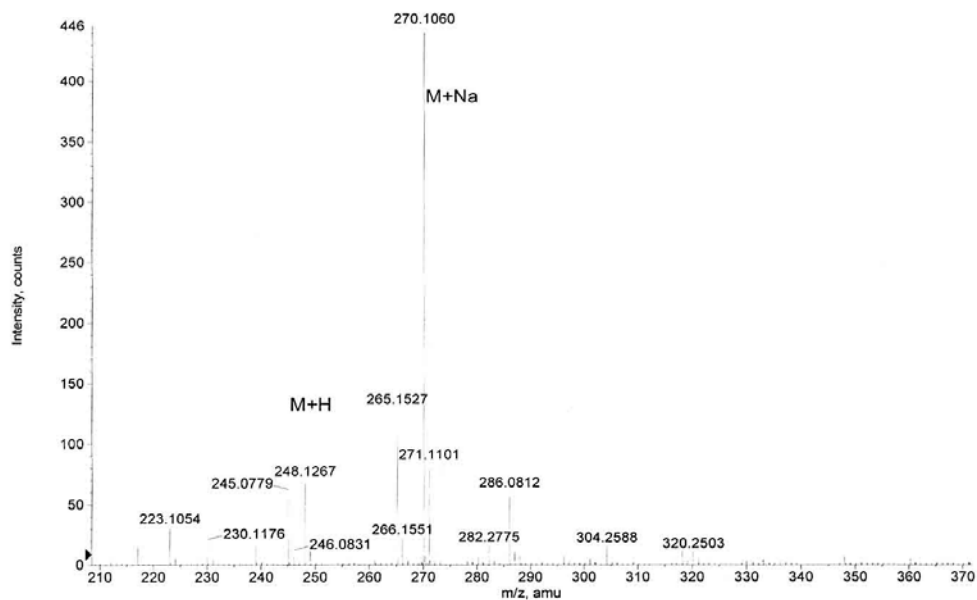


IR y HRMS del compuesto **22/23**:

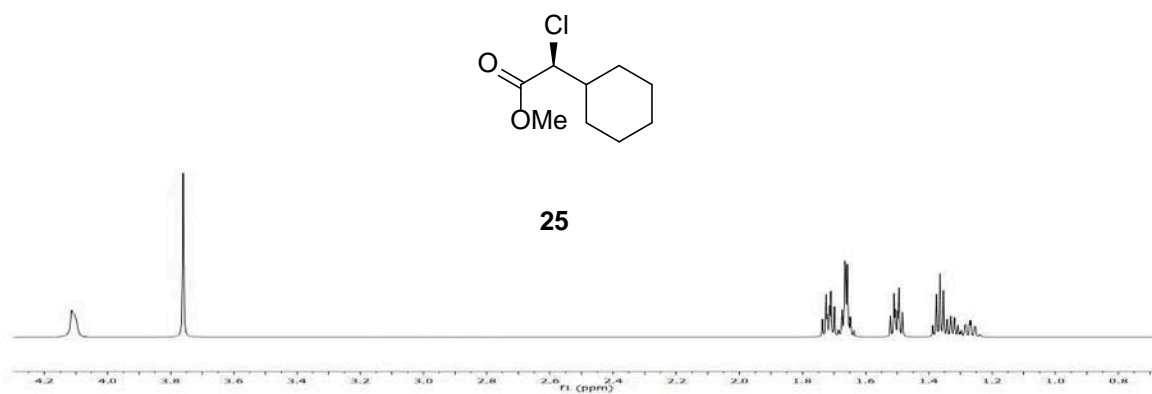


+TOF MS: 5.602 to 5.652 min from Sample 2 of abr120514.wiff
a=3.5640672764066830e-004, t0=-1.53041641224772320e+001 R;

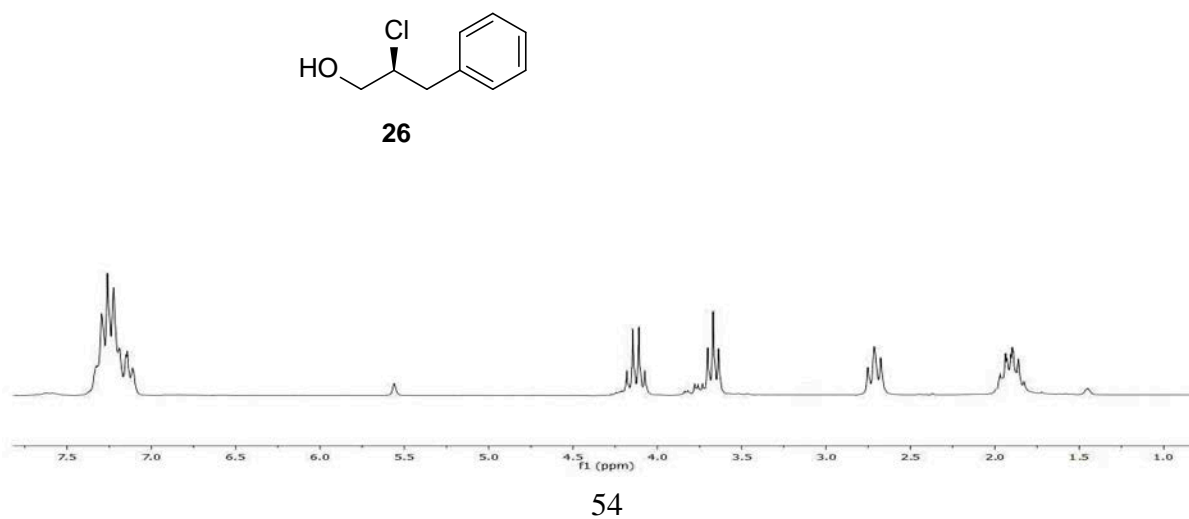
Max. 446.0 counts.



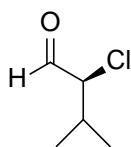
^1H del compuesto **25**:



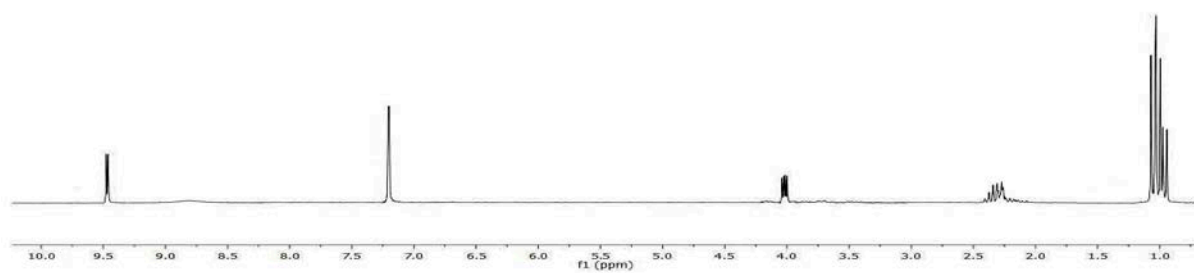
^1H del compuesto **26**:



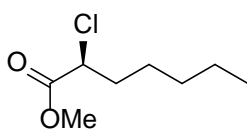
^1H del compuesto **27**:



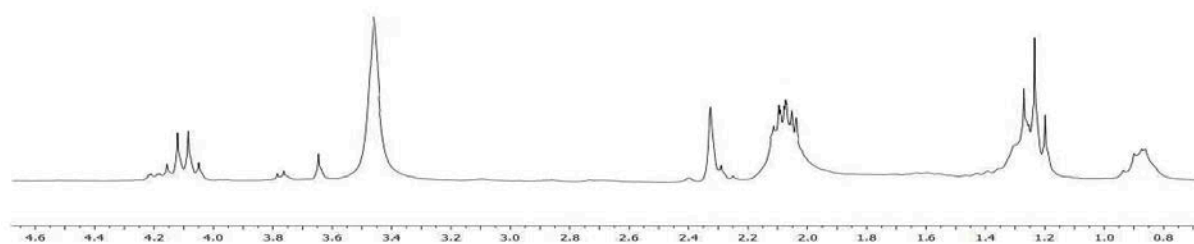
27



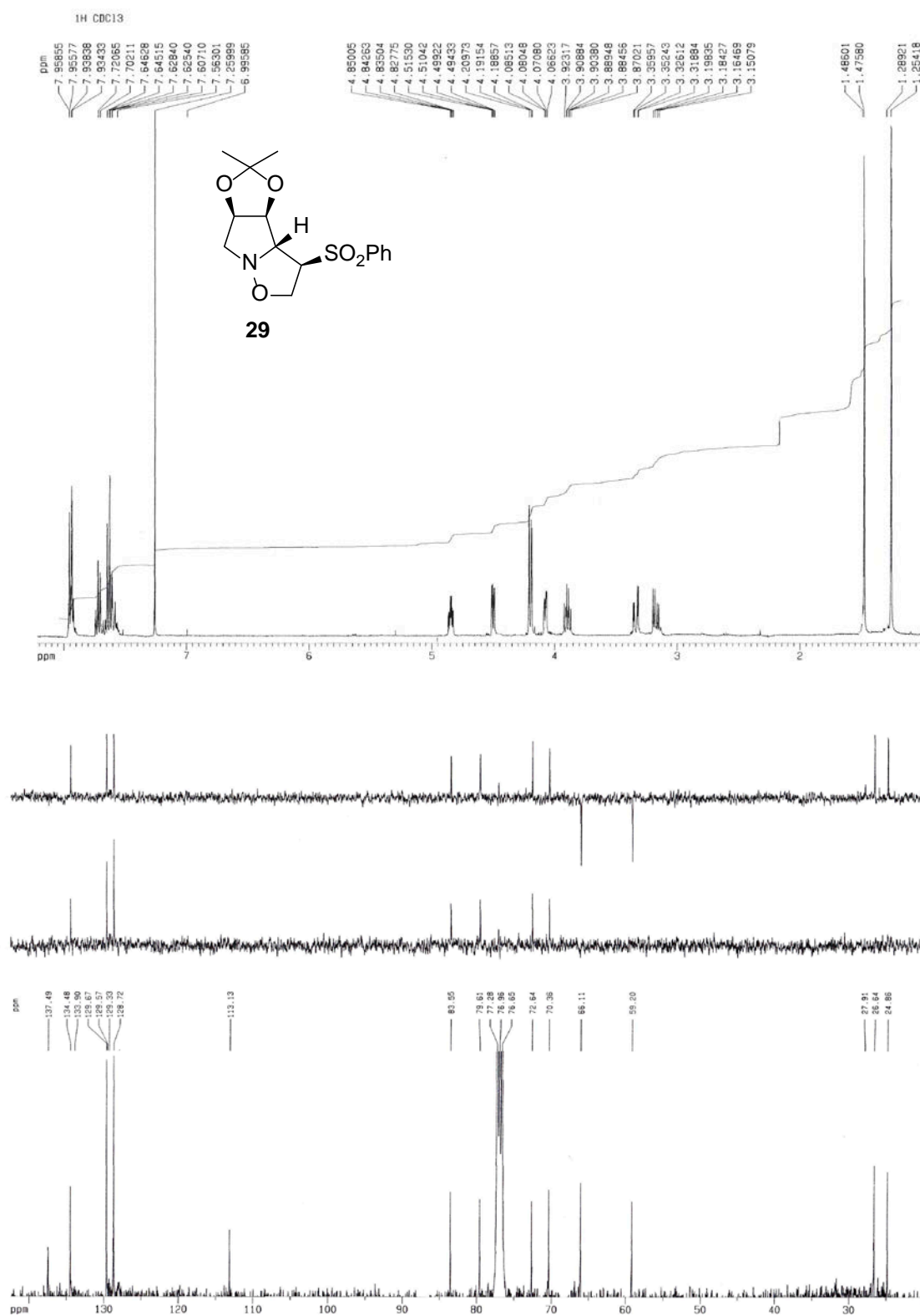
^1H del compuesto **28**:

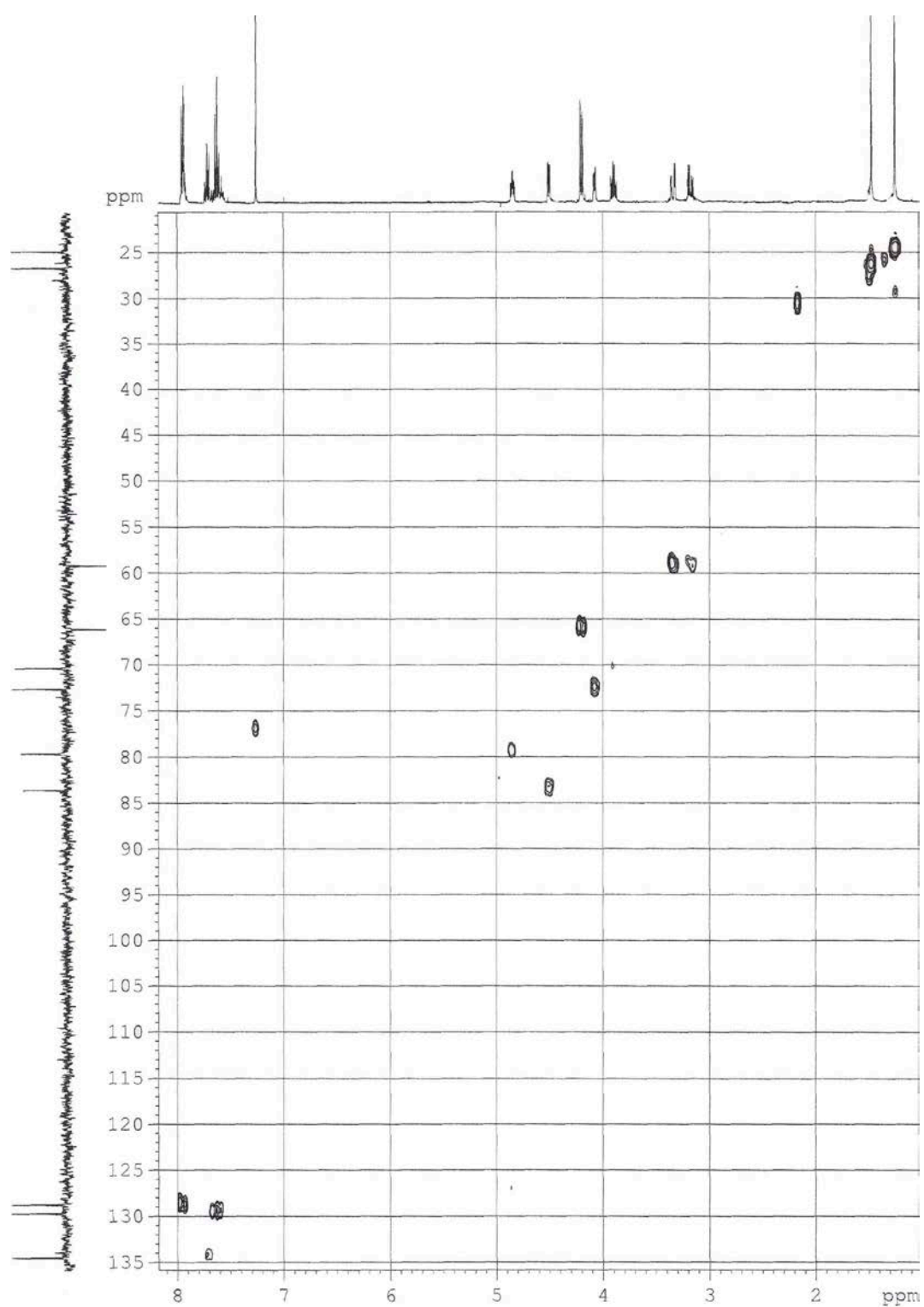


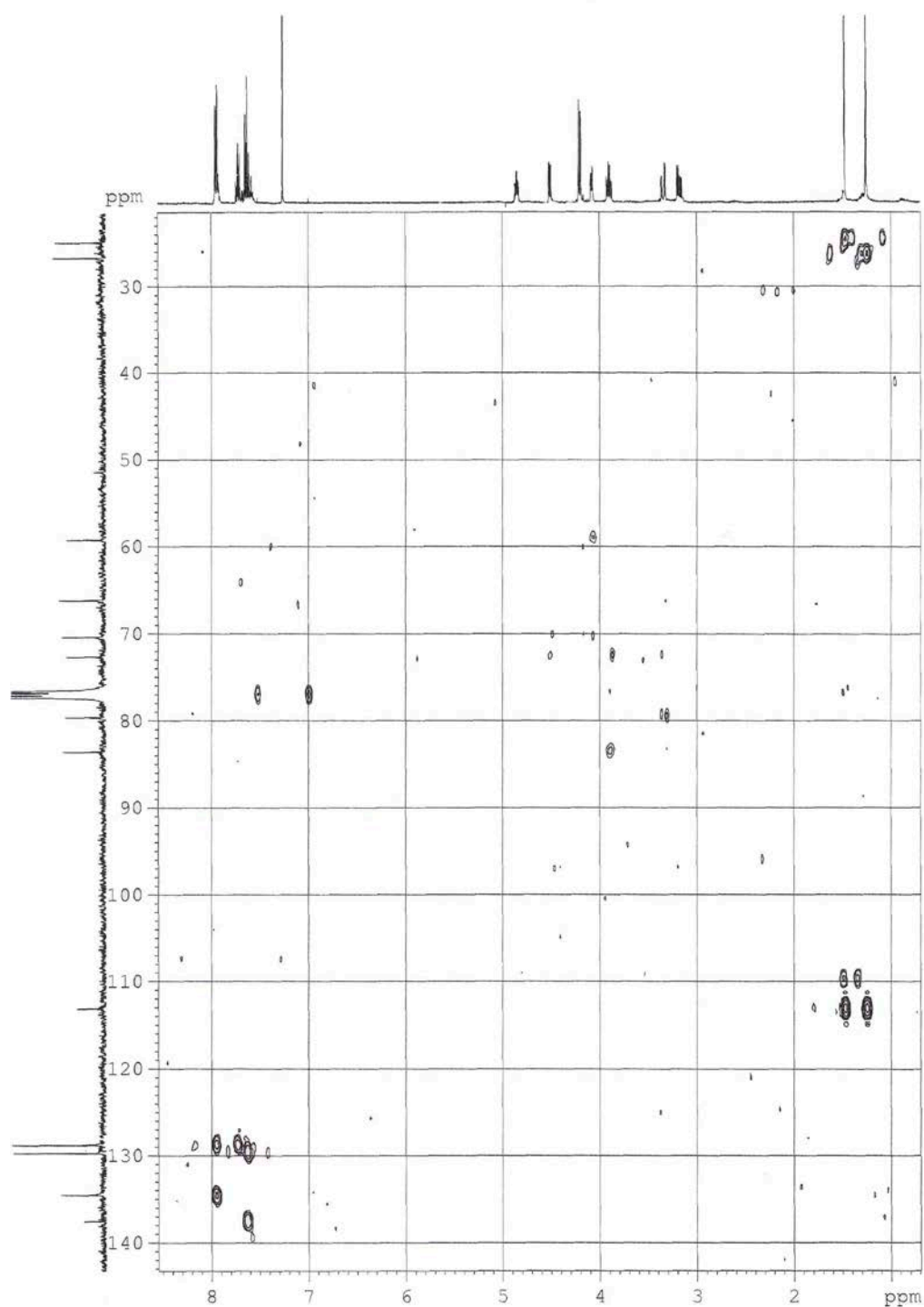
28

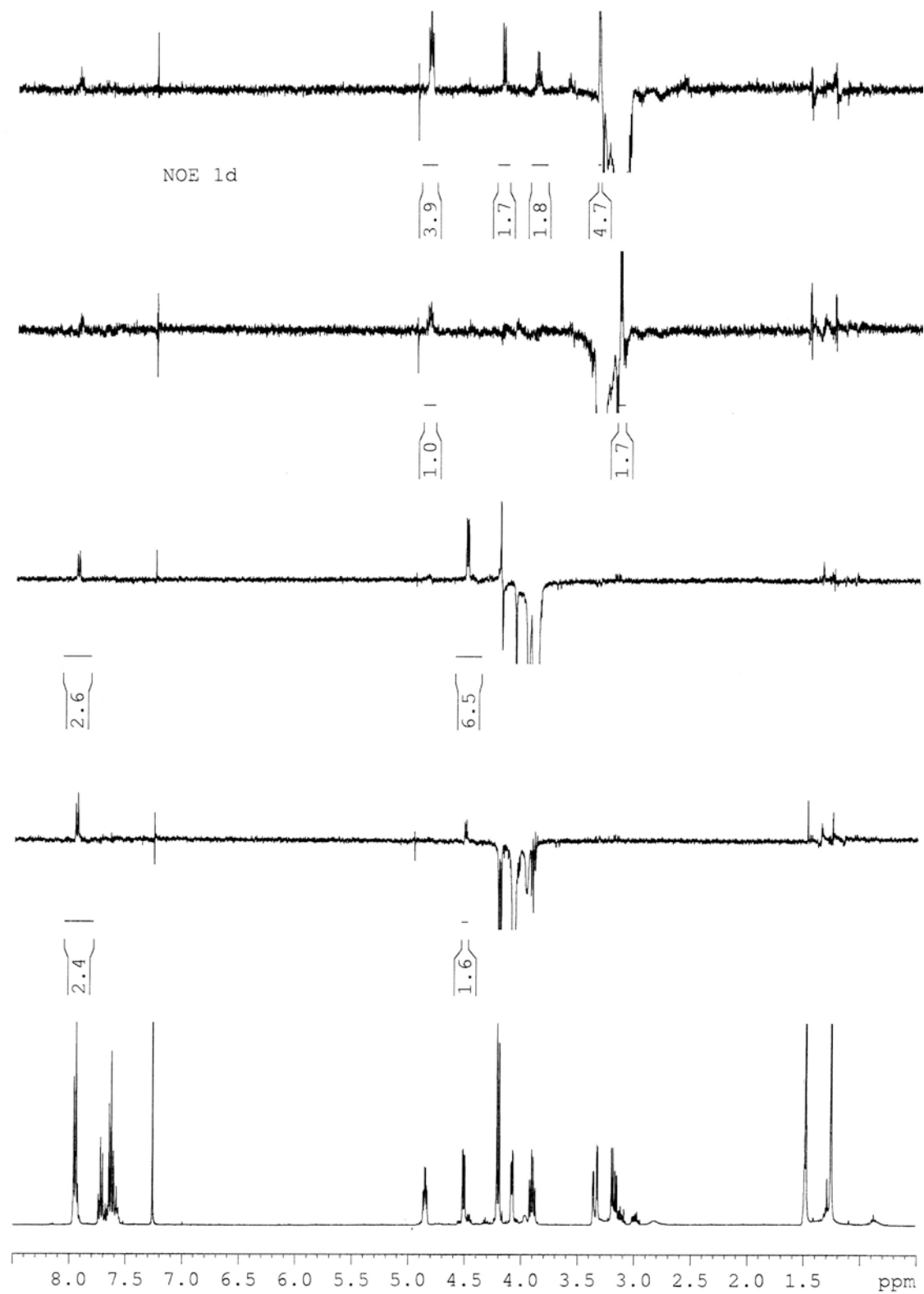


^1H y ^{13}C del compuesto **29**:

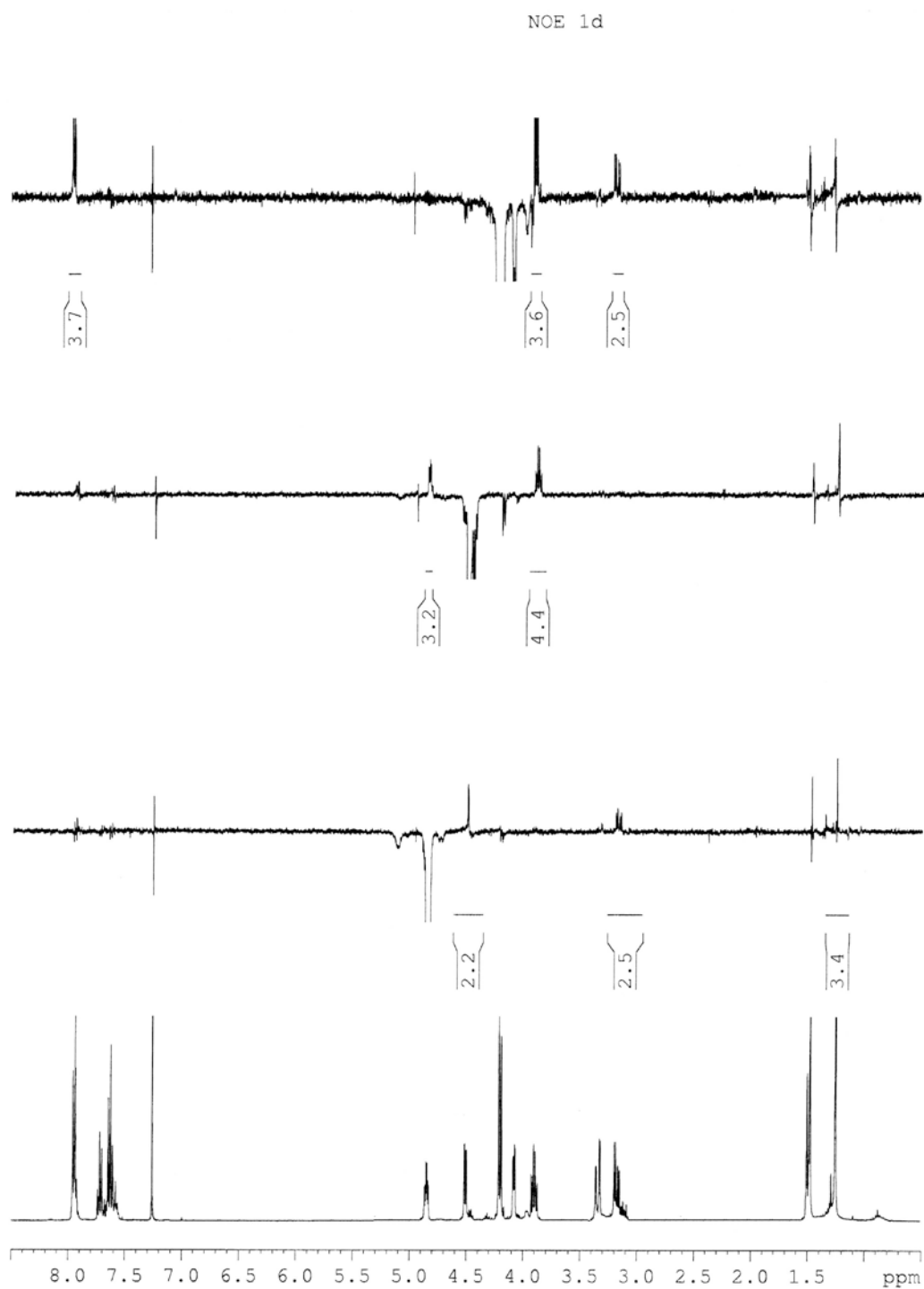


HMQC del compuesto **29**:

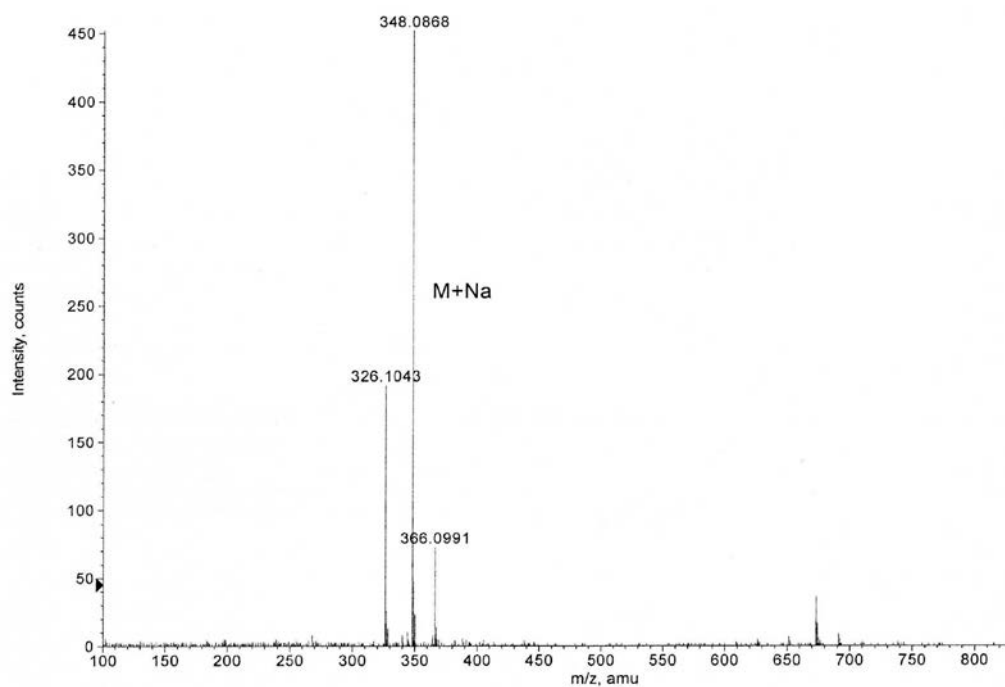
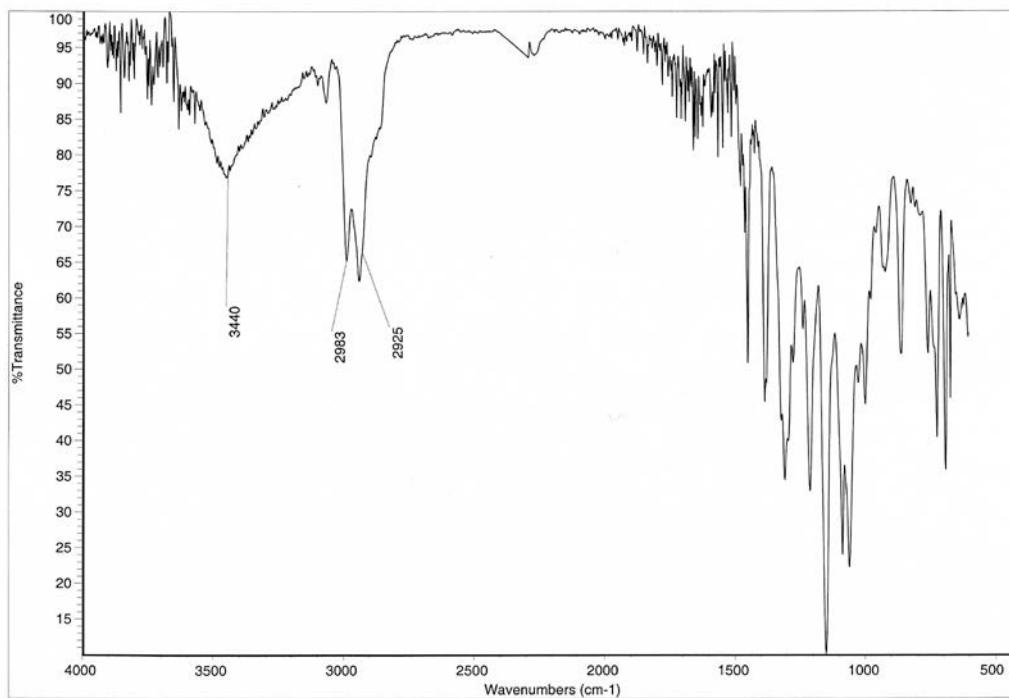
HMBC del compuesto **29**:

Noes del compuesto **29**:

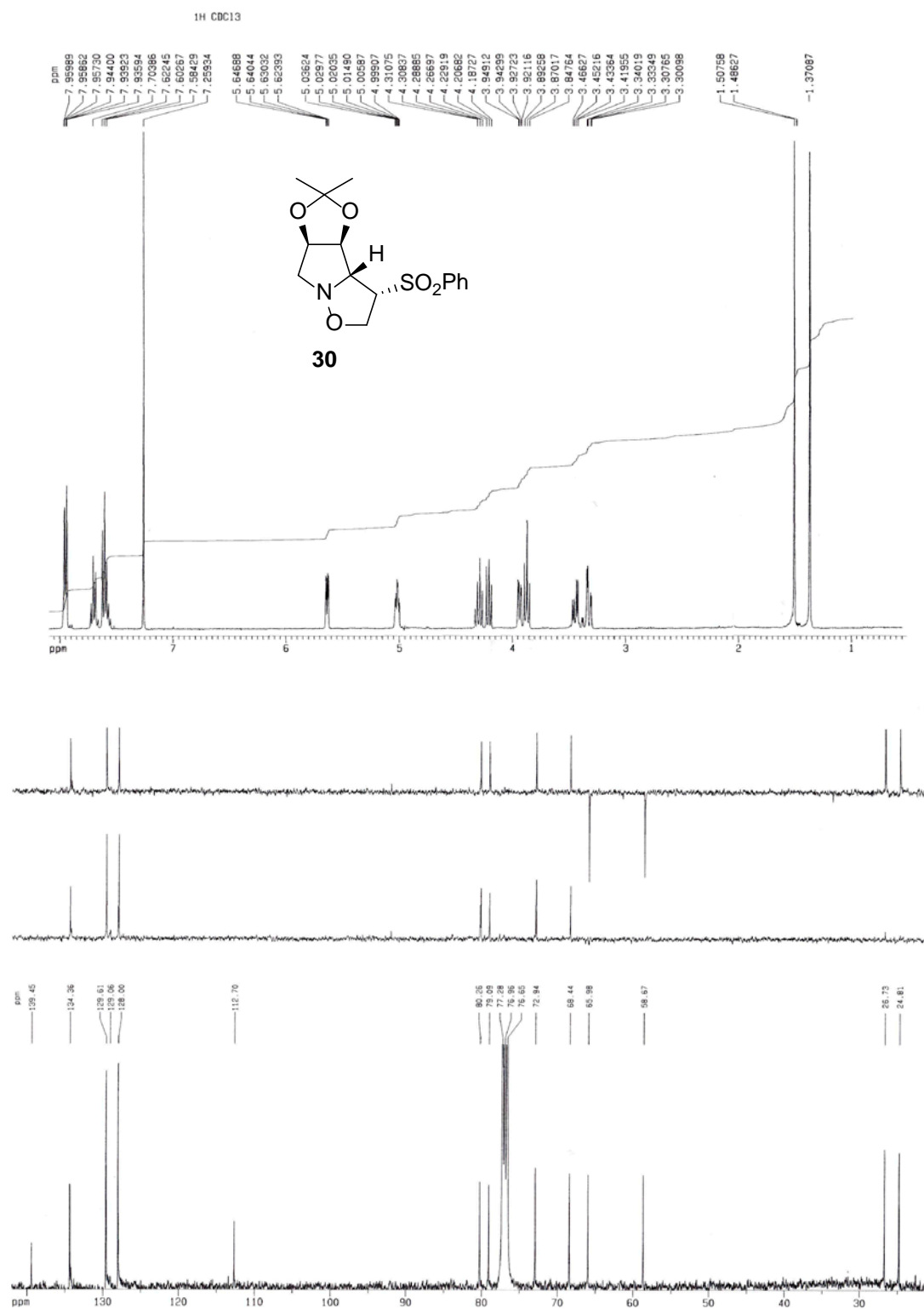
Noes del compuesto **29**:

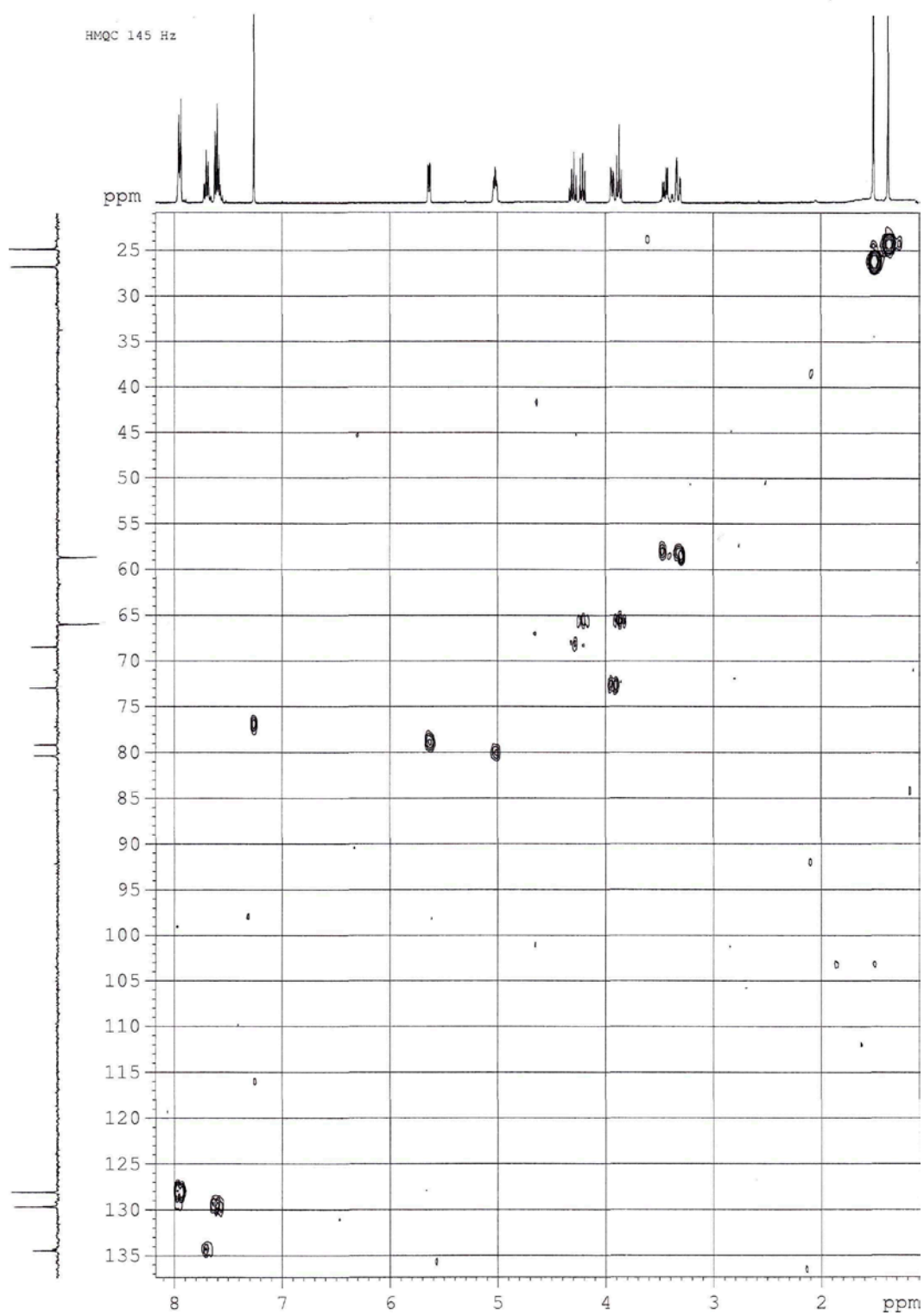


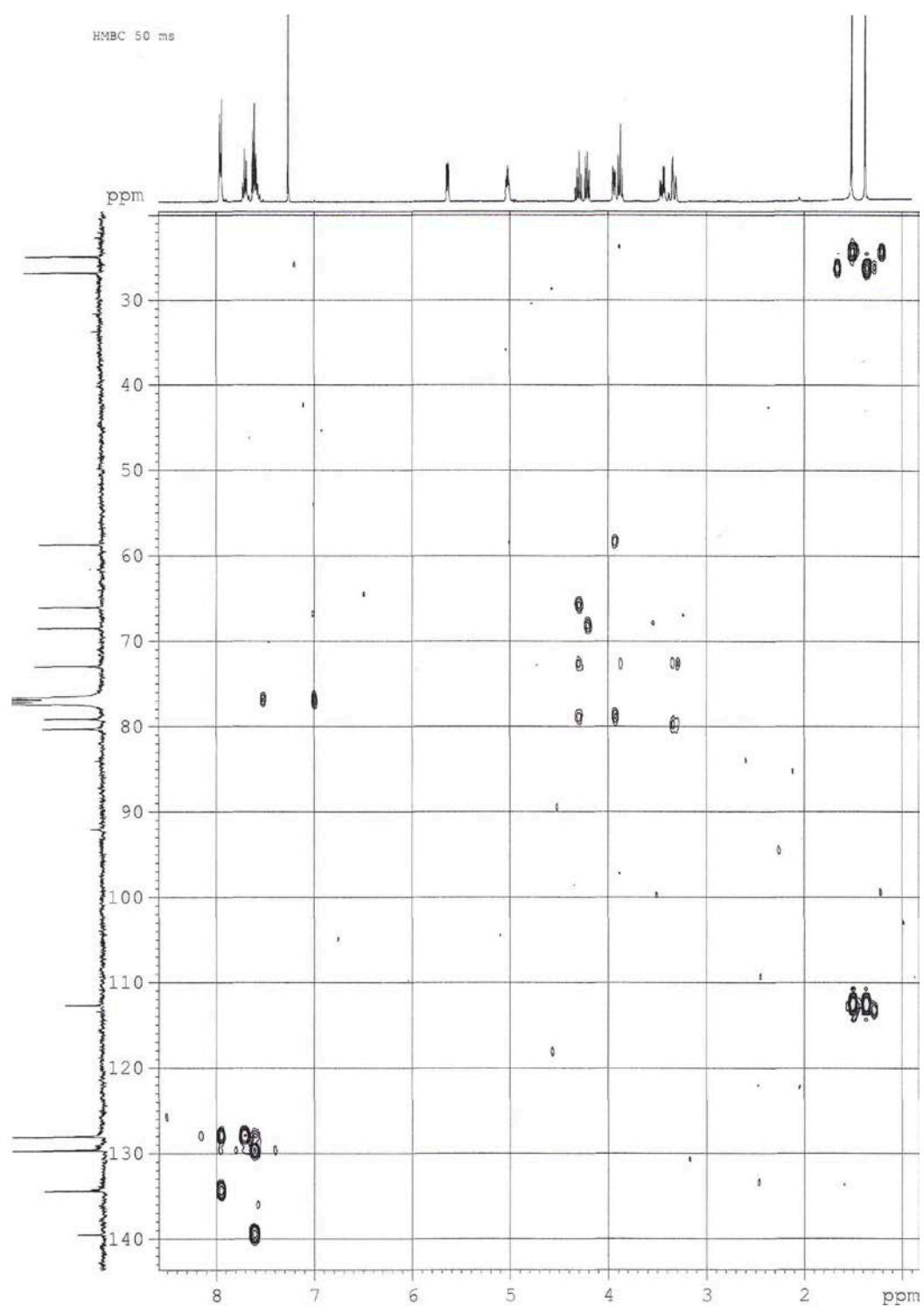
IR y HRMS del compuesto **29**:



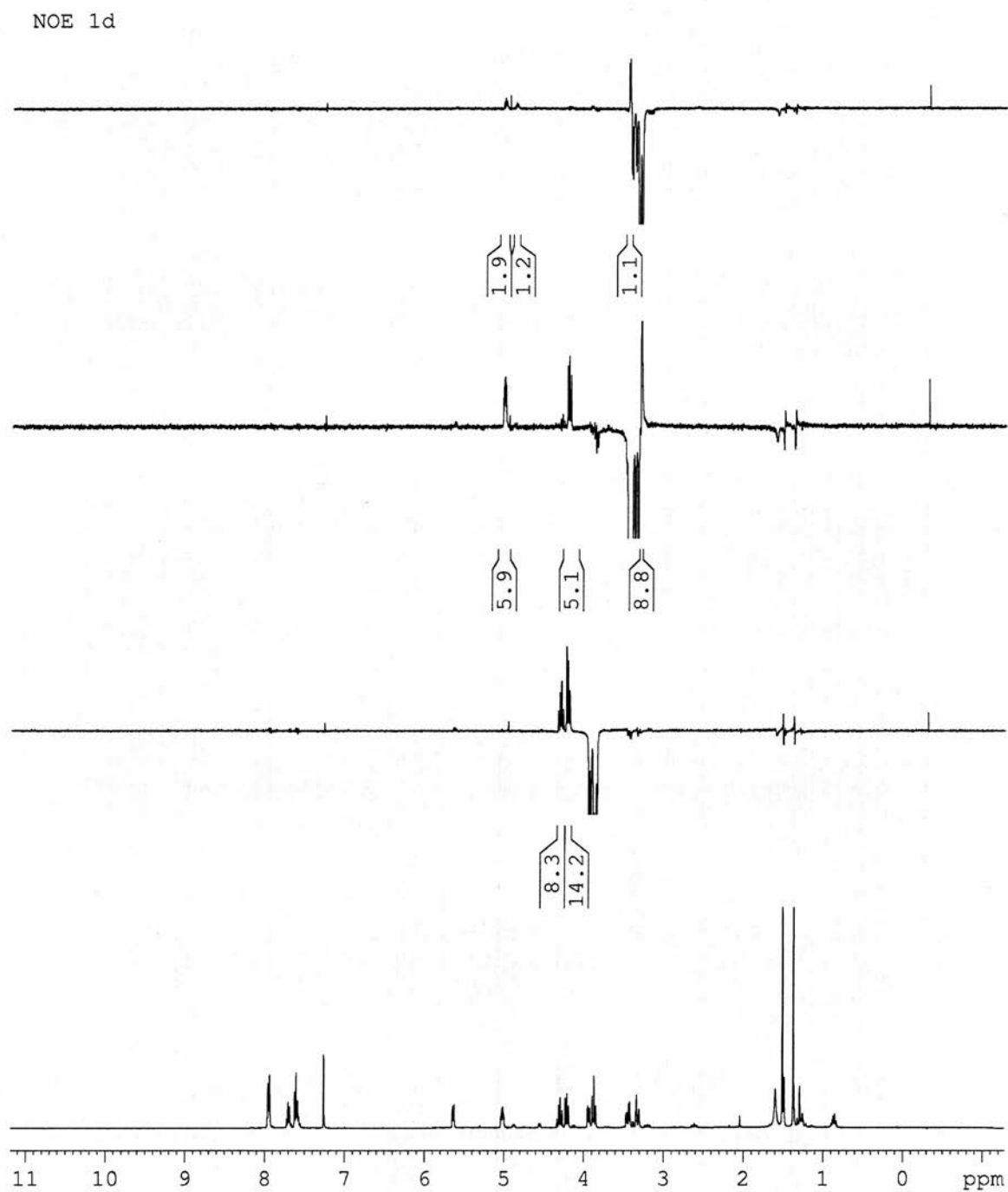
^1H y ^{13}C del compuesto **30**:



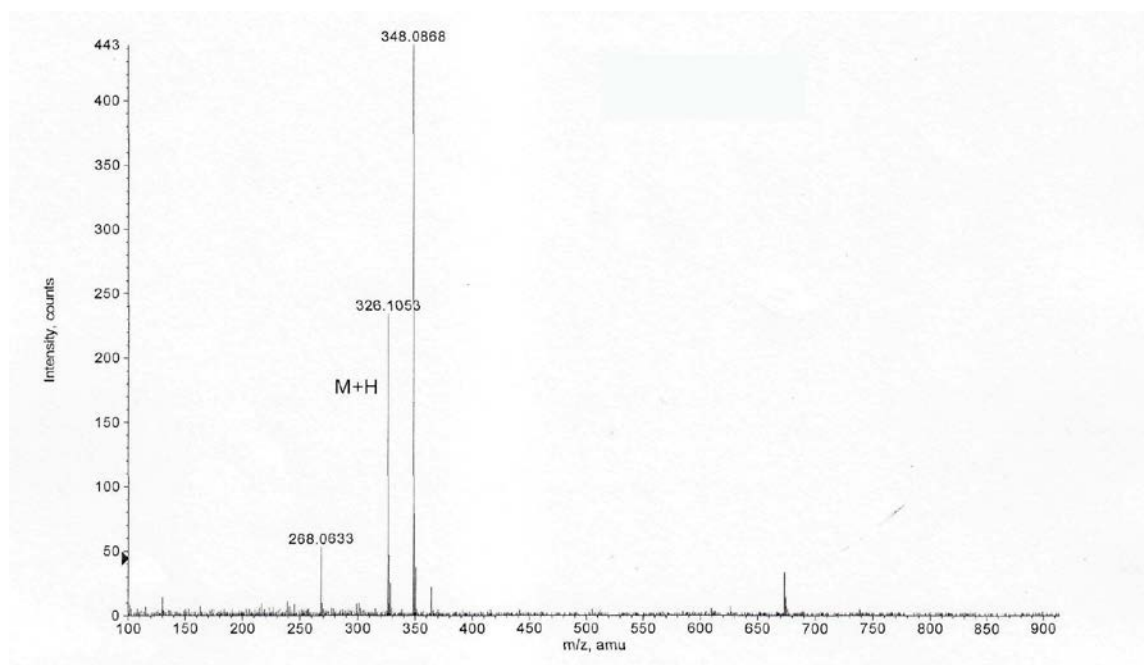
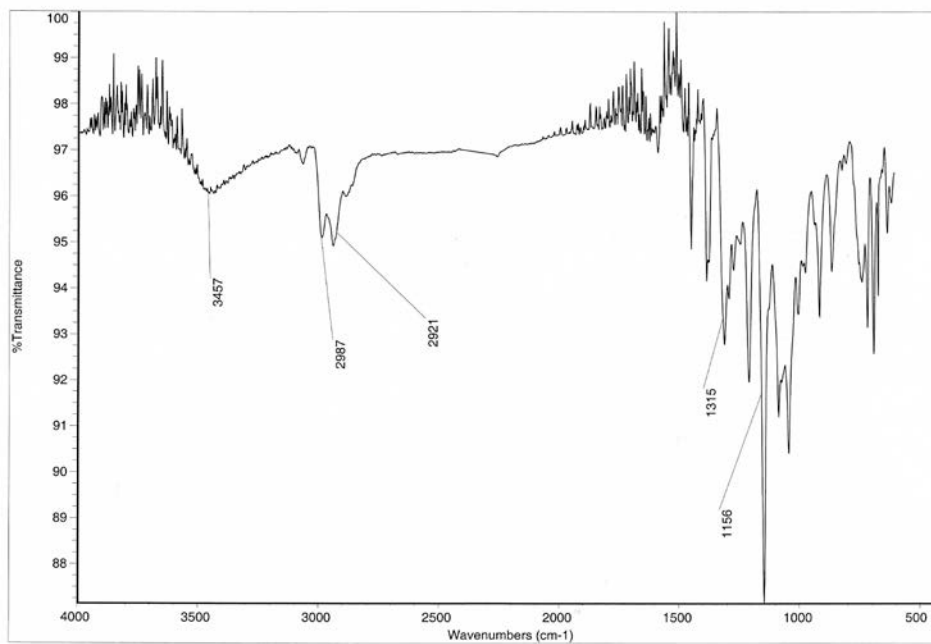
HMQC del compuesto **30**:

HMBC del compuesto **30**:

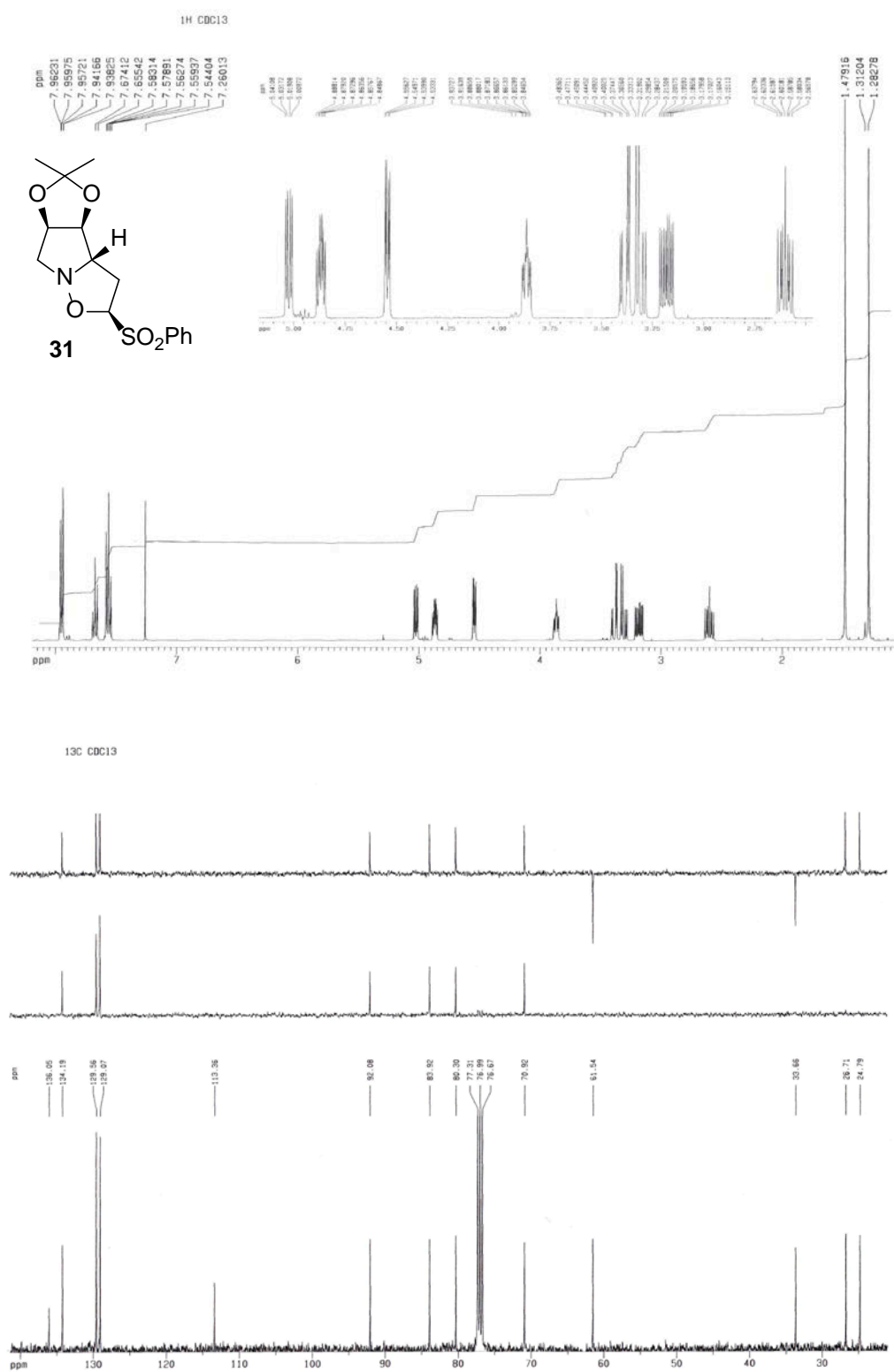
Noes del compuesto **30**:

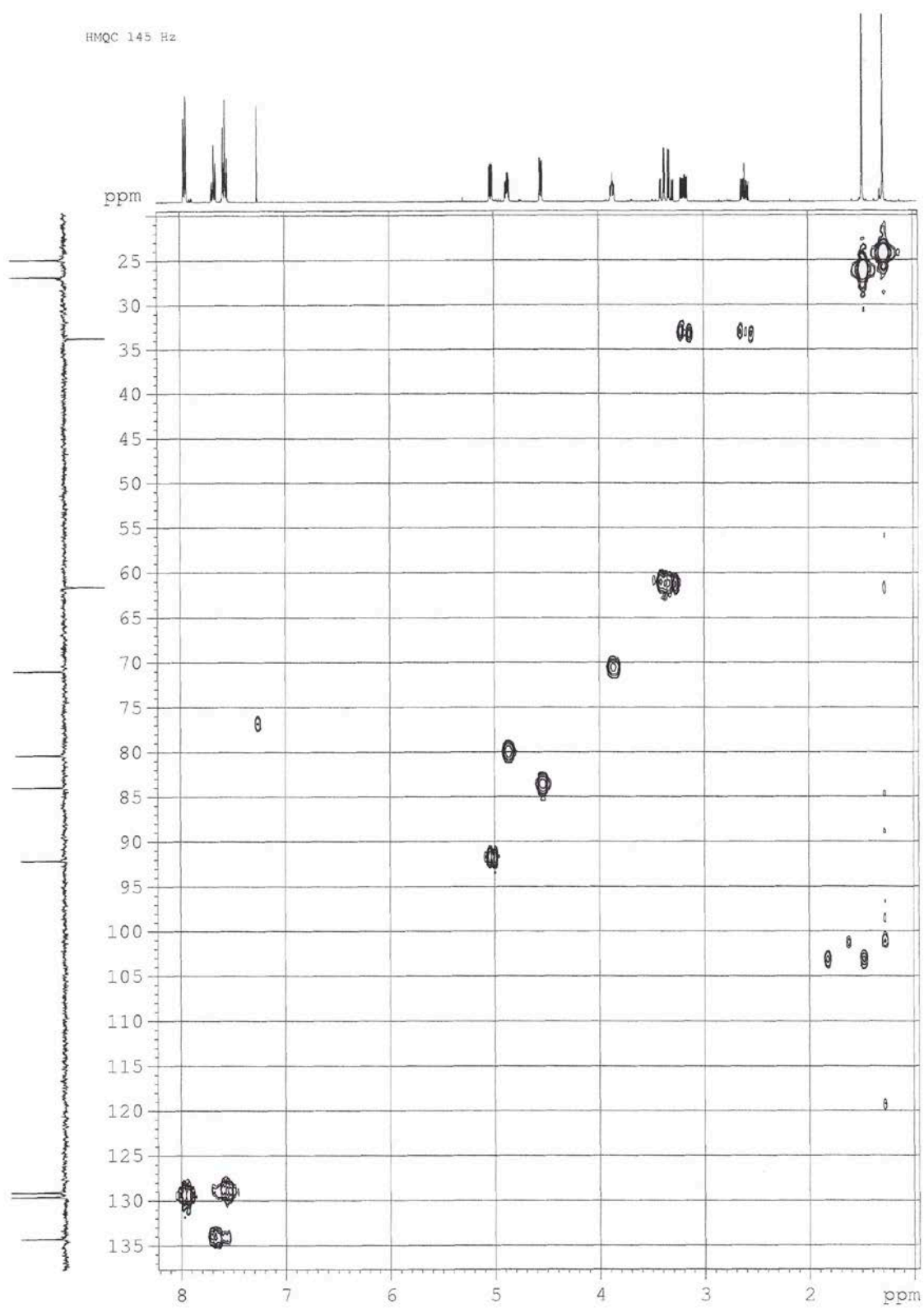
Noes del compuesto **30**:

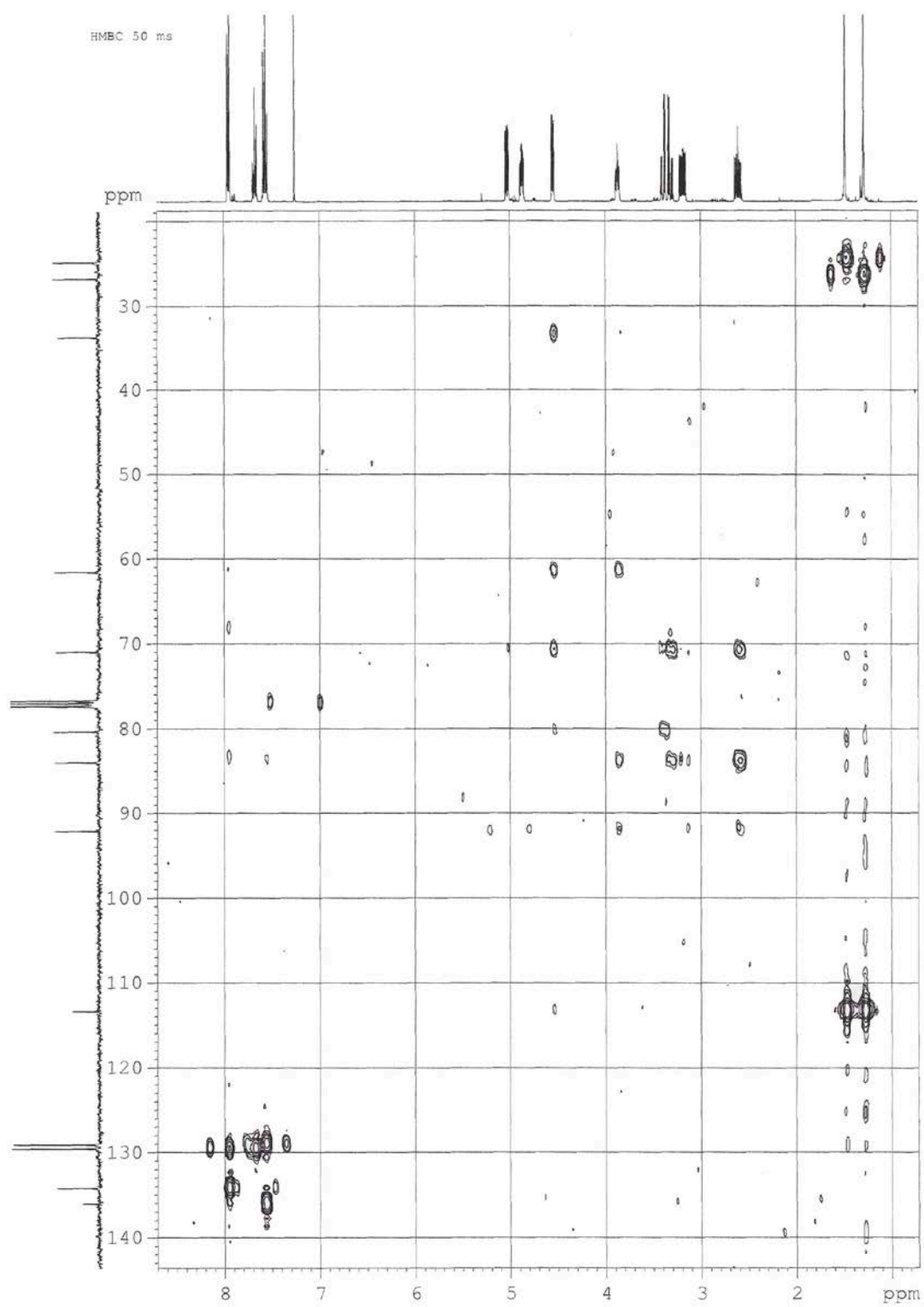
IR y HRMS del compuesto **30**:

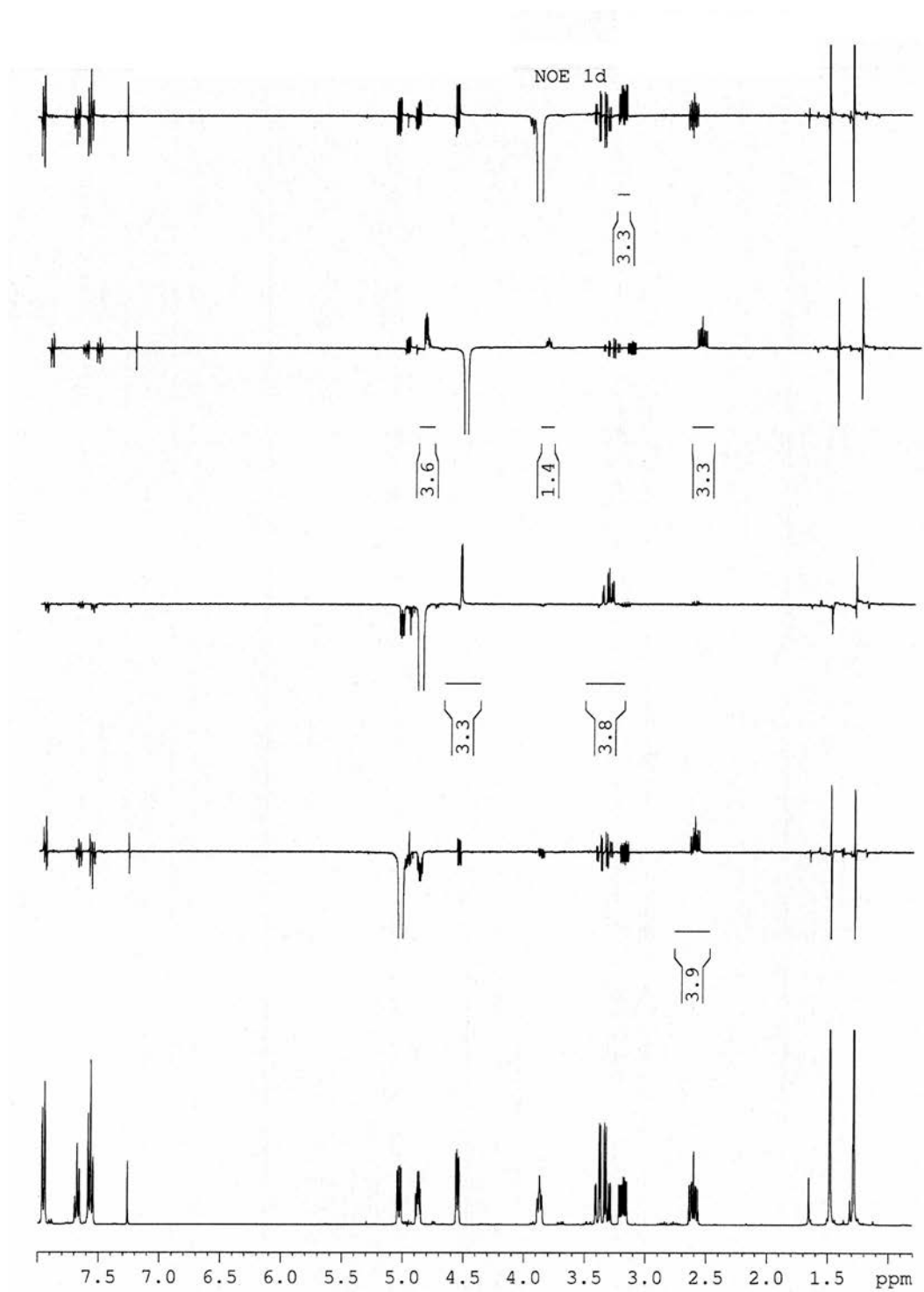


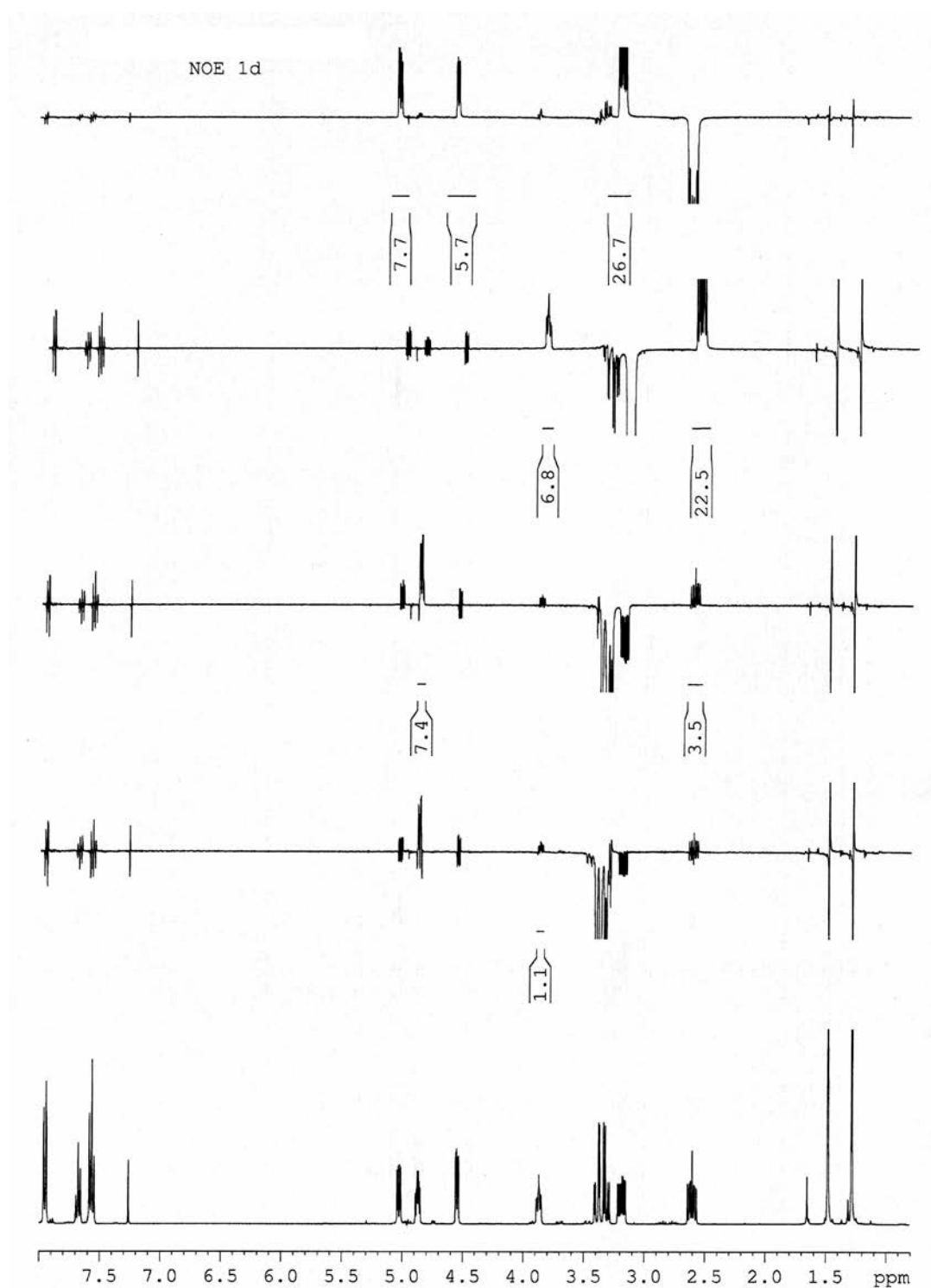
^1H y ^{13}C del compuesto **31**:



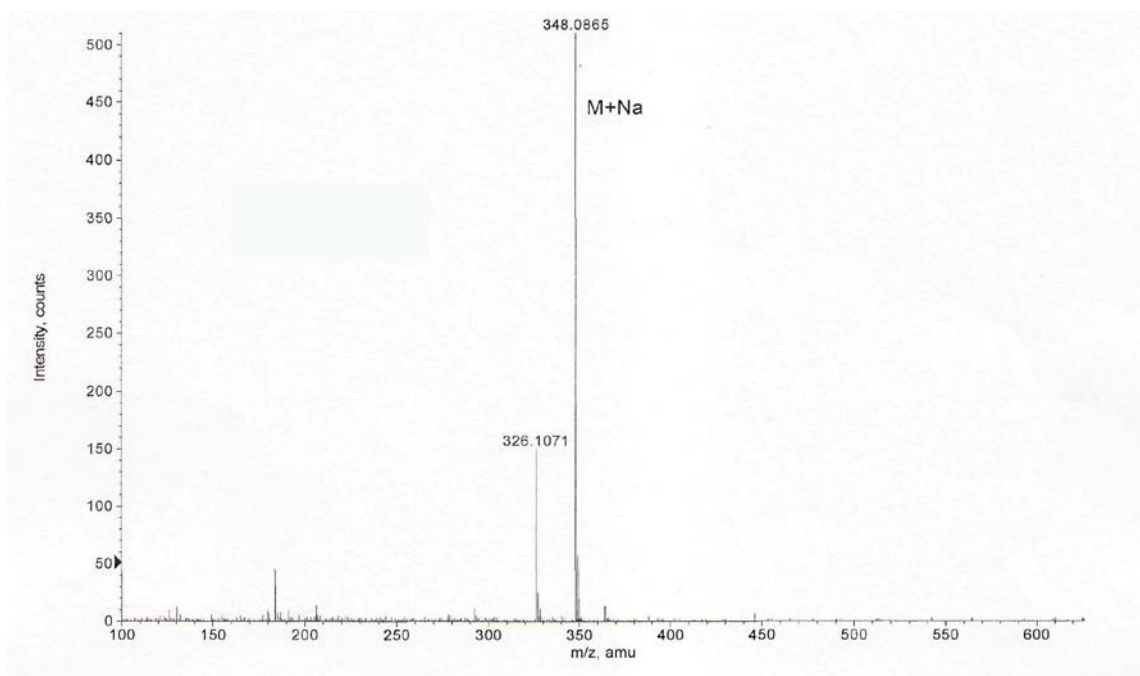
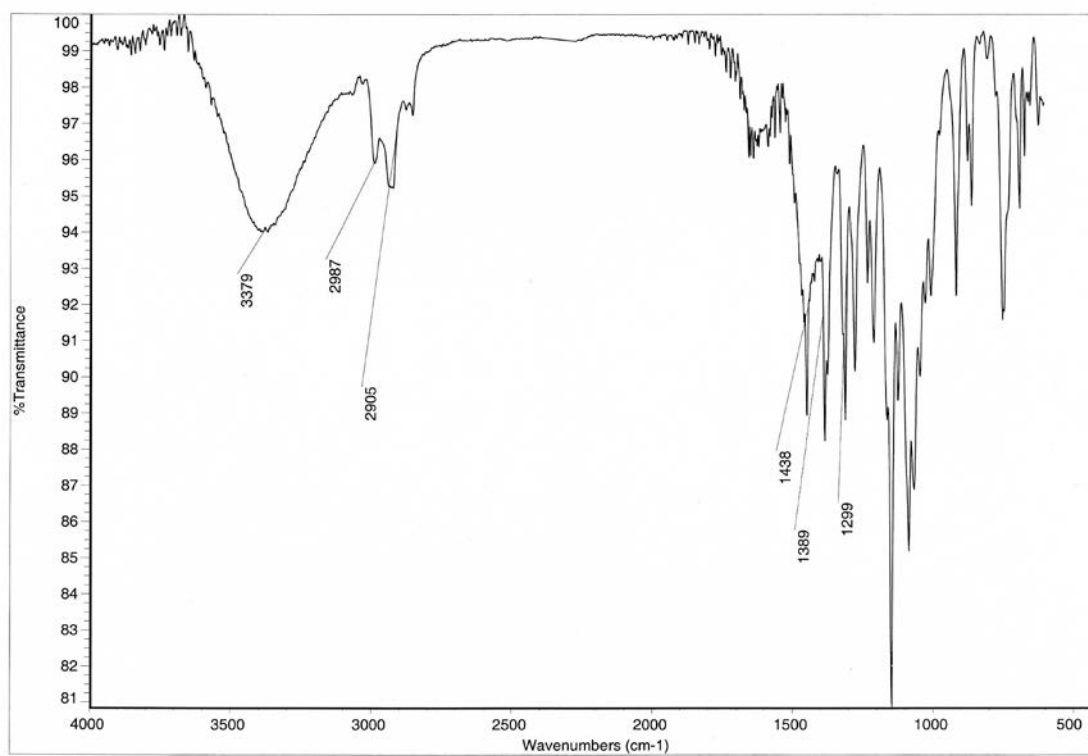
HMQC del compuesto **31**:

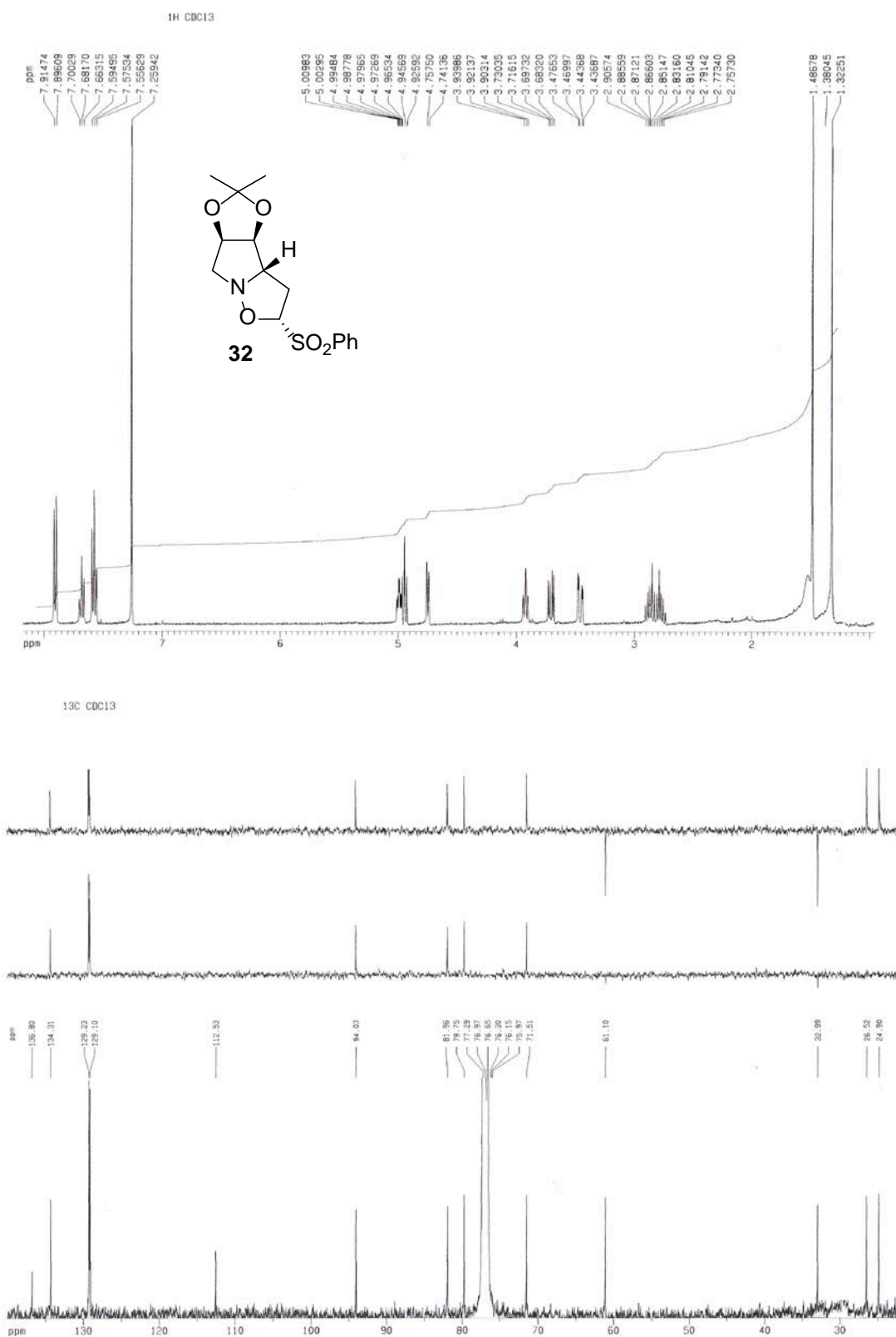
HMBC del compuesto **31**:

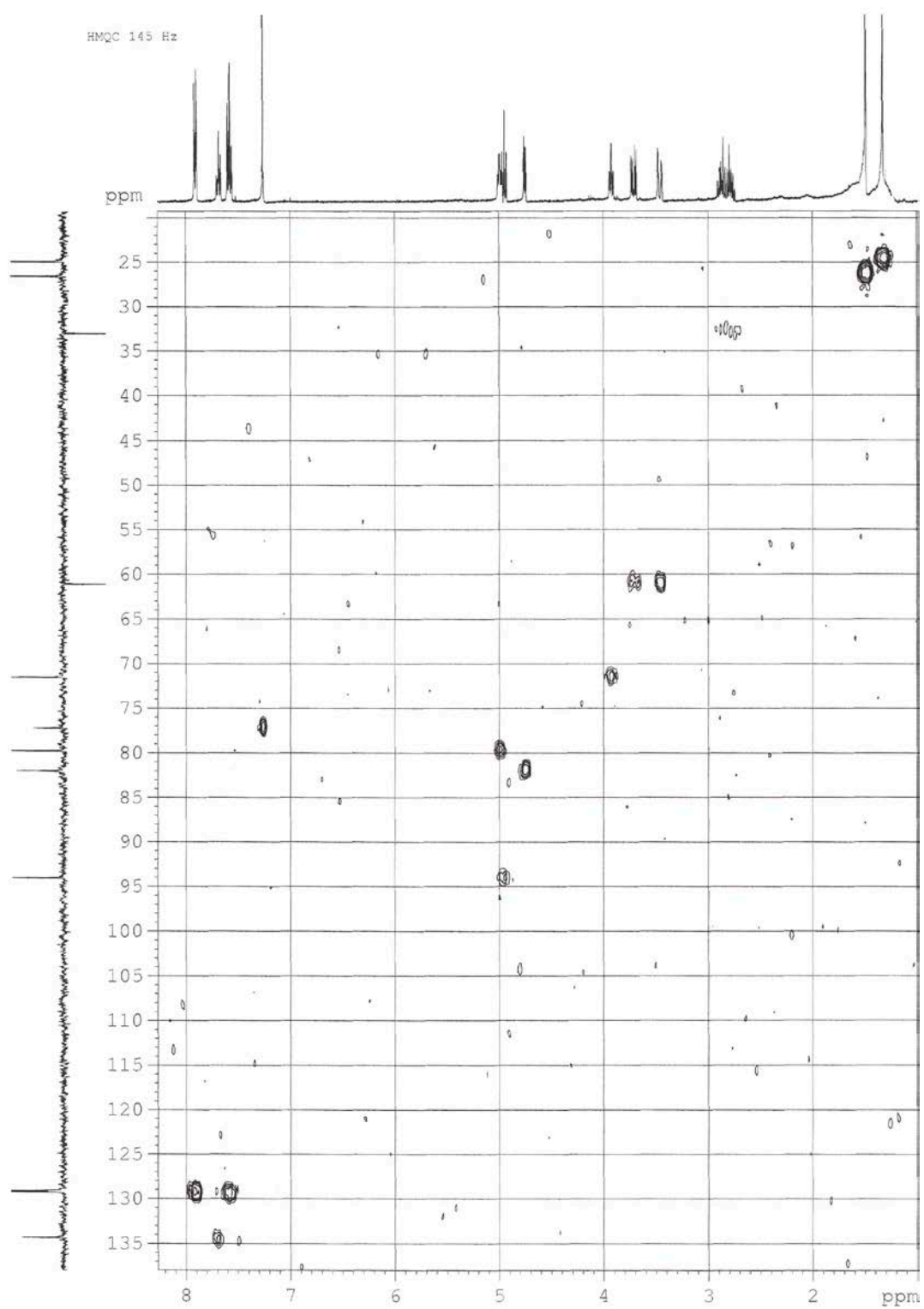
Noes del compuesto **31**:

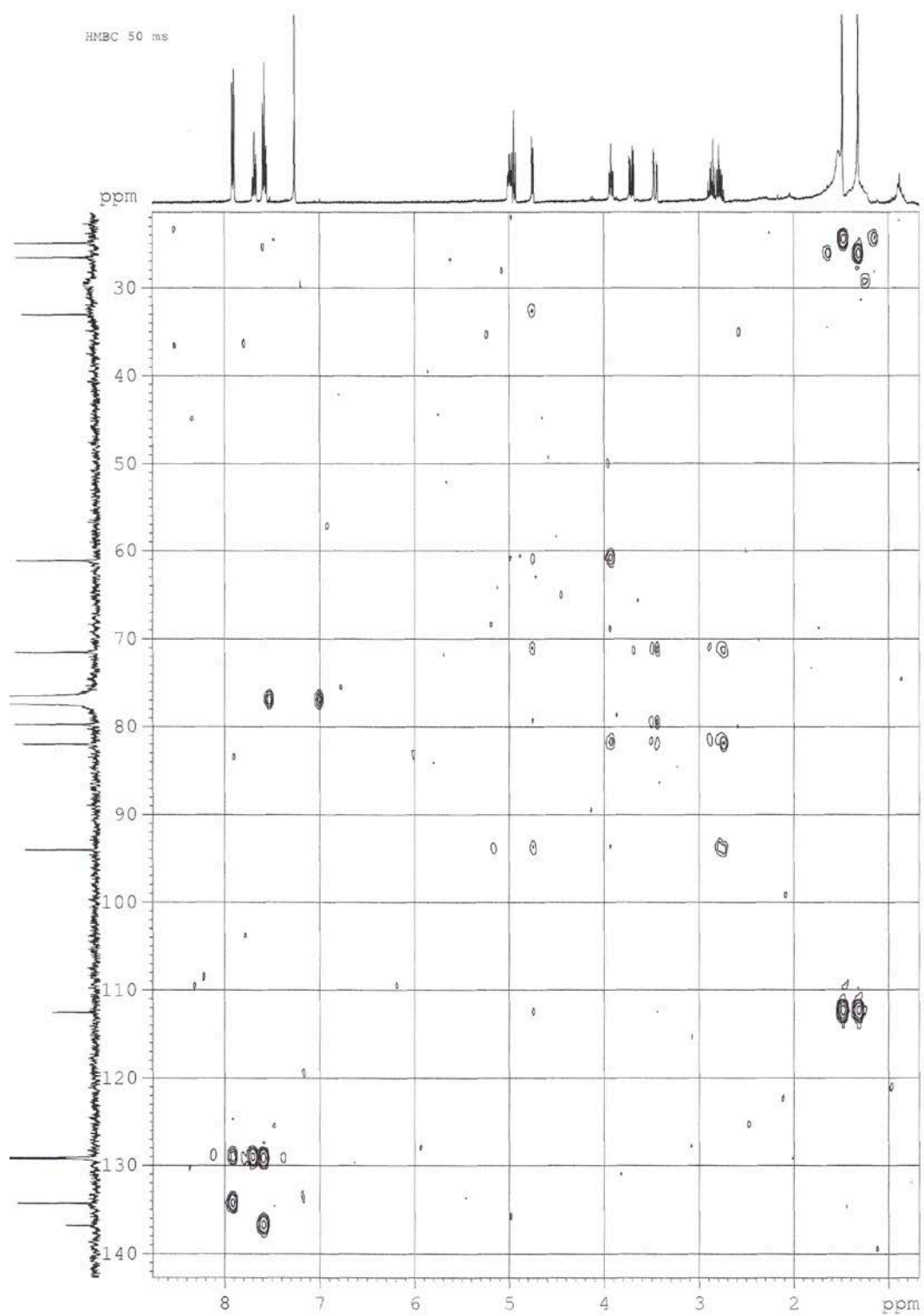
Noes del compuesto **31**:

IR y HRMS del compuesto **31**:

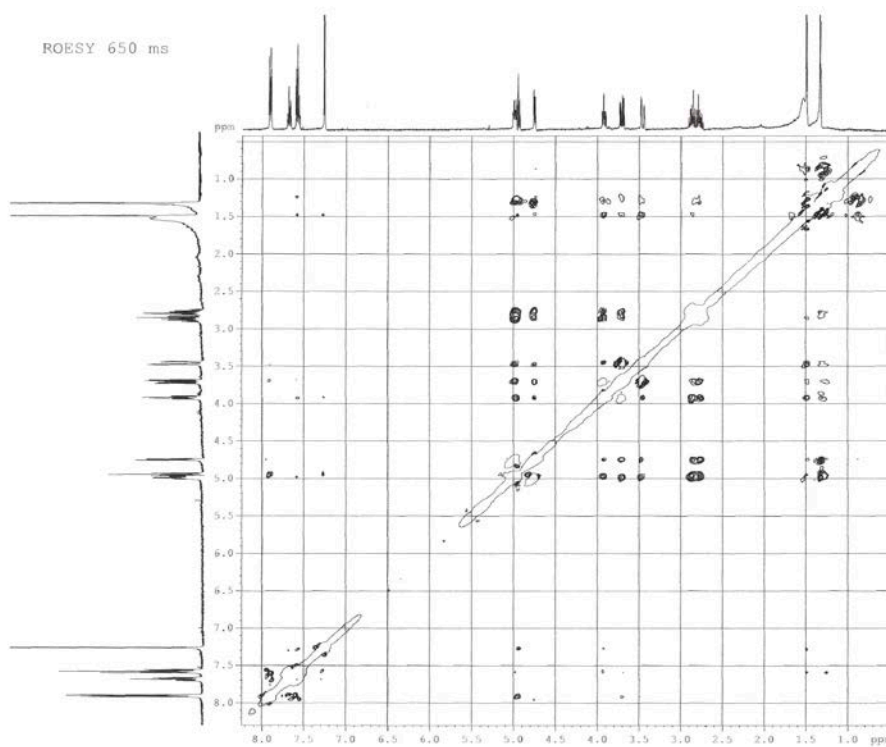
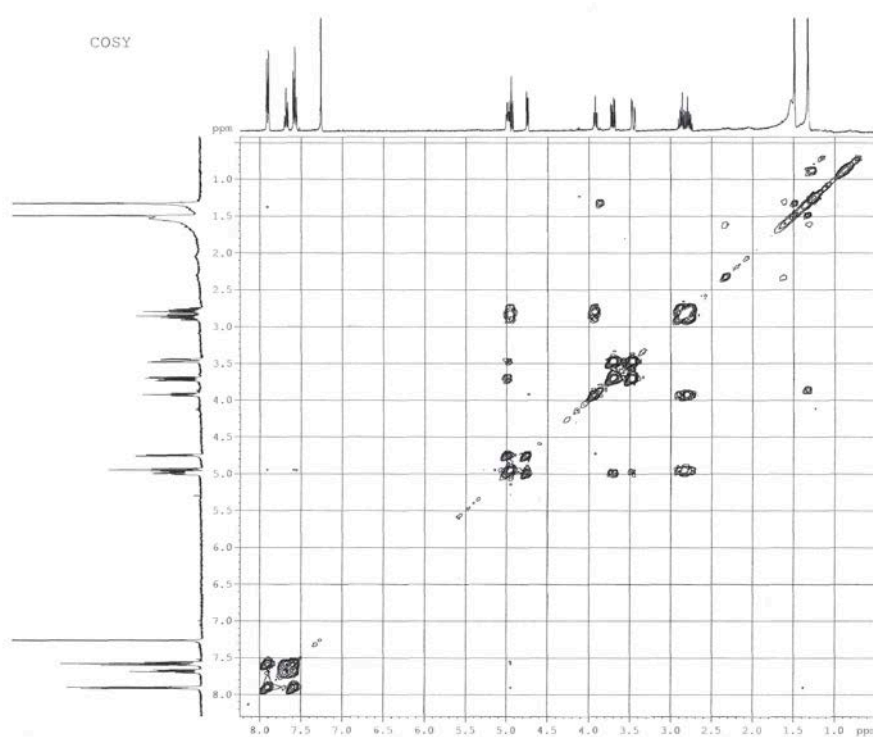


^1H y ^{13}C del compuesto **32**:

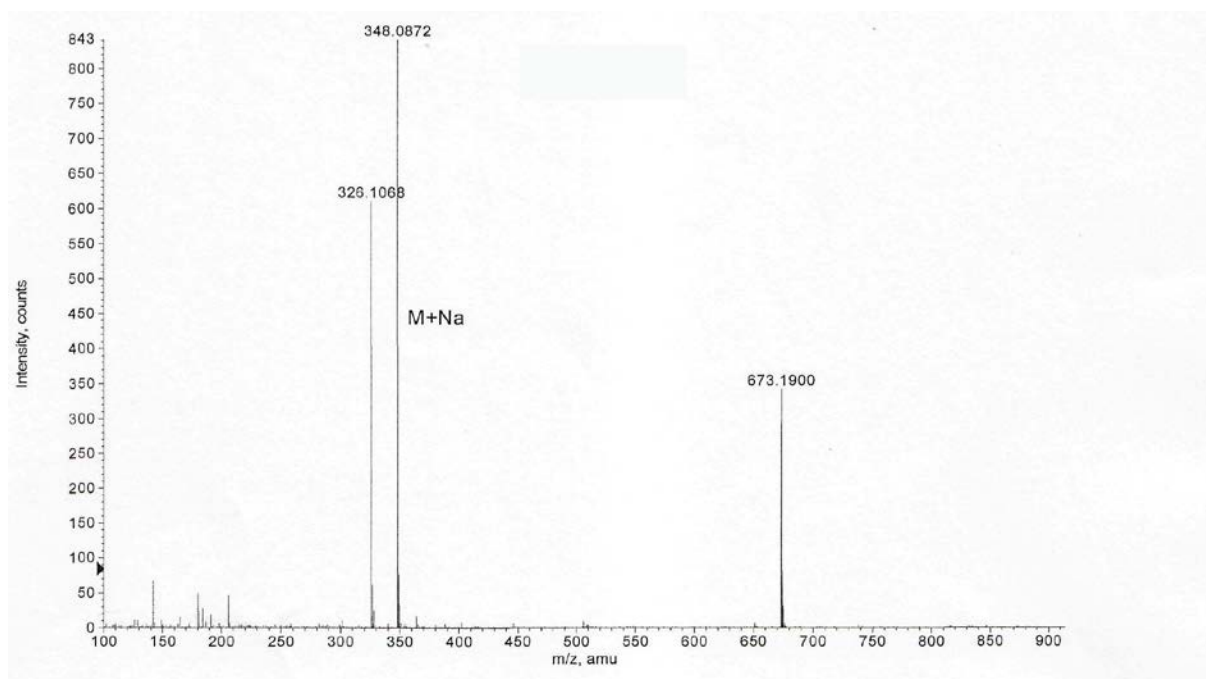
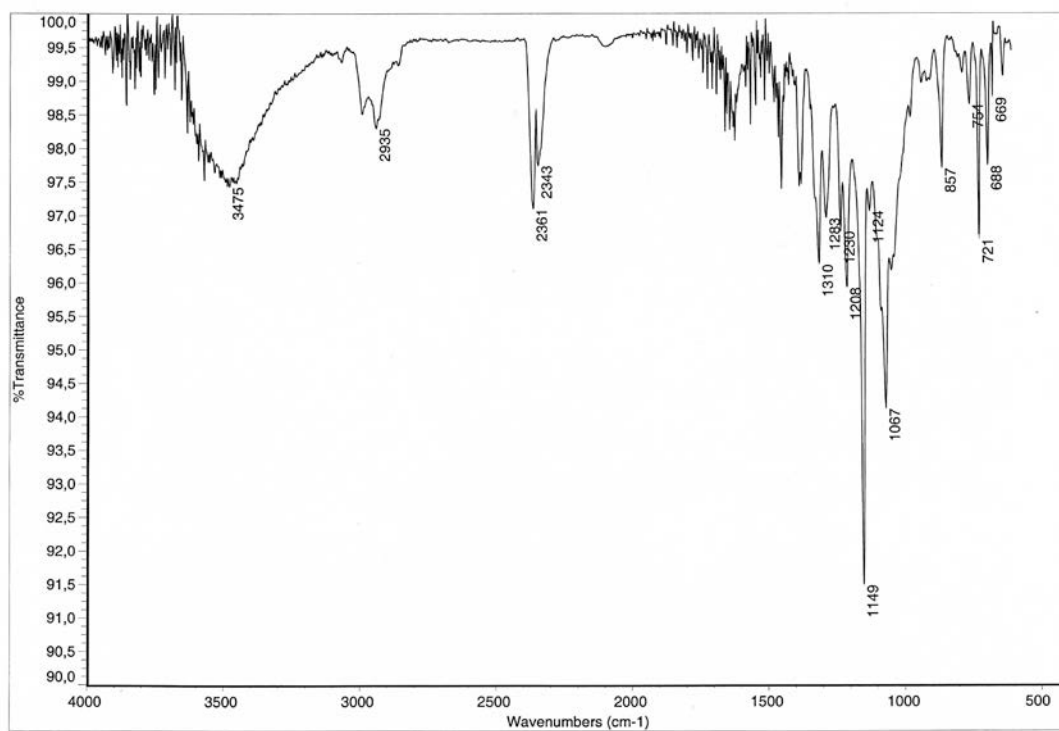
HMQC del compuesto **32**:

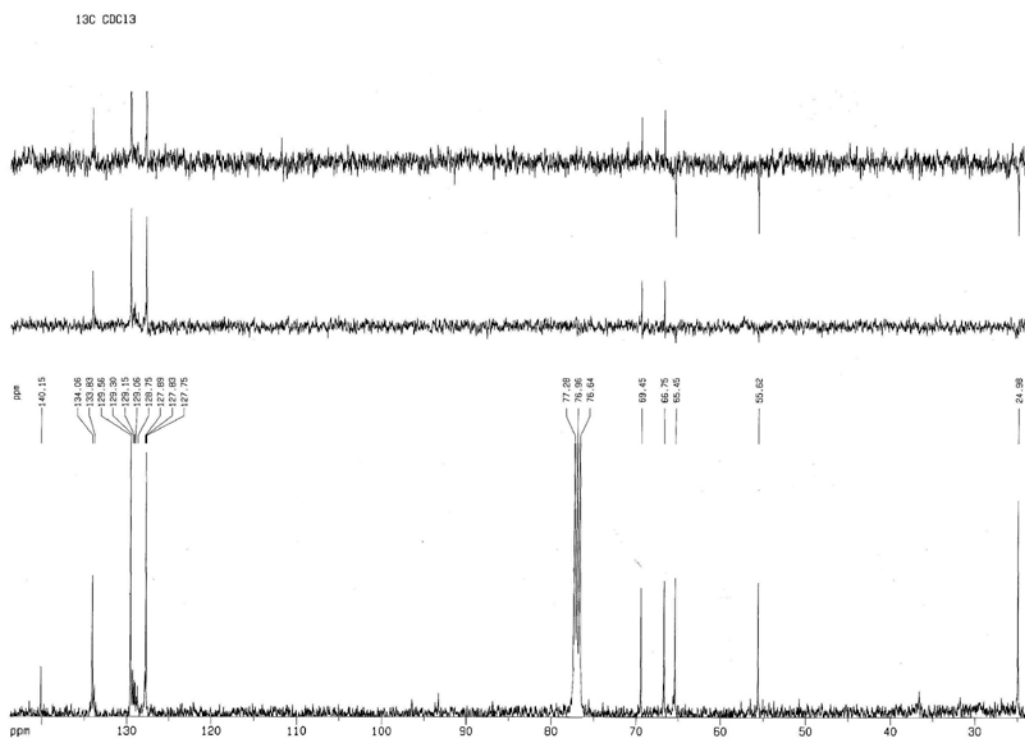
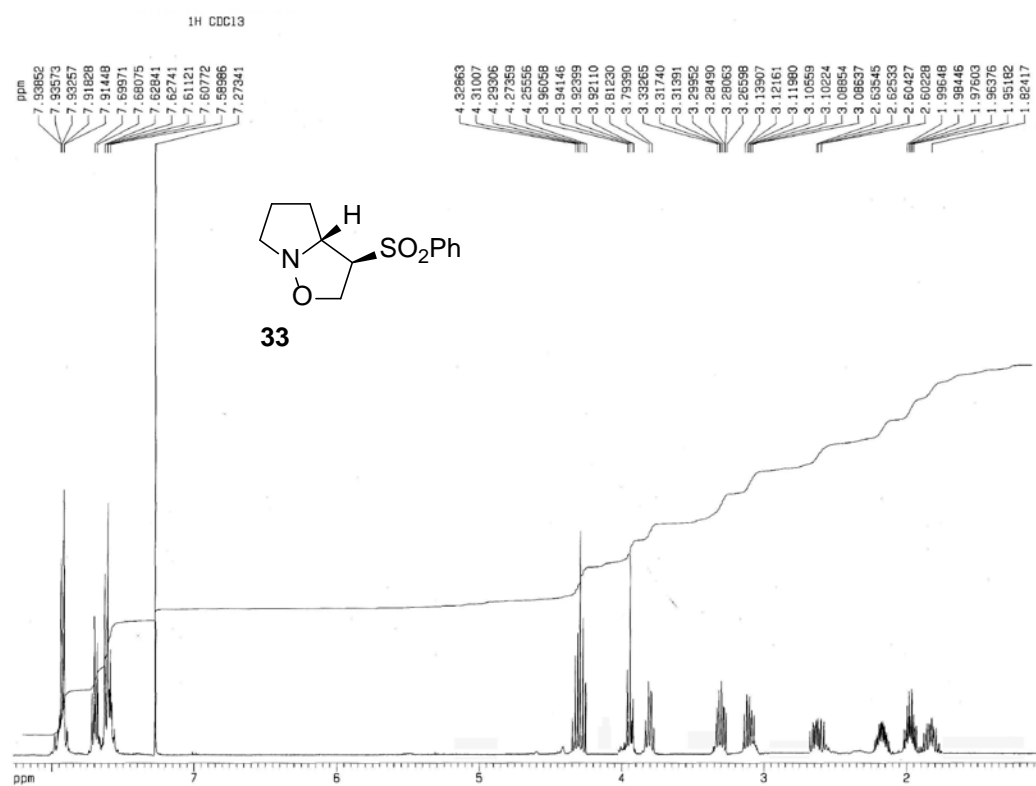
HMBC del compuesto **32**:

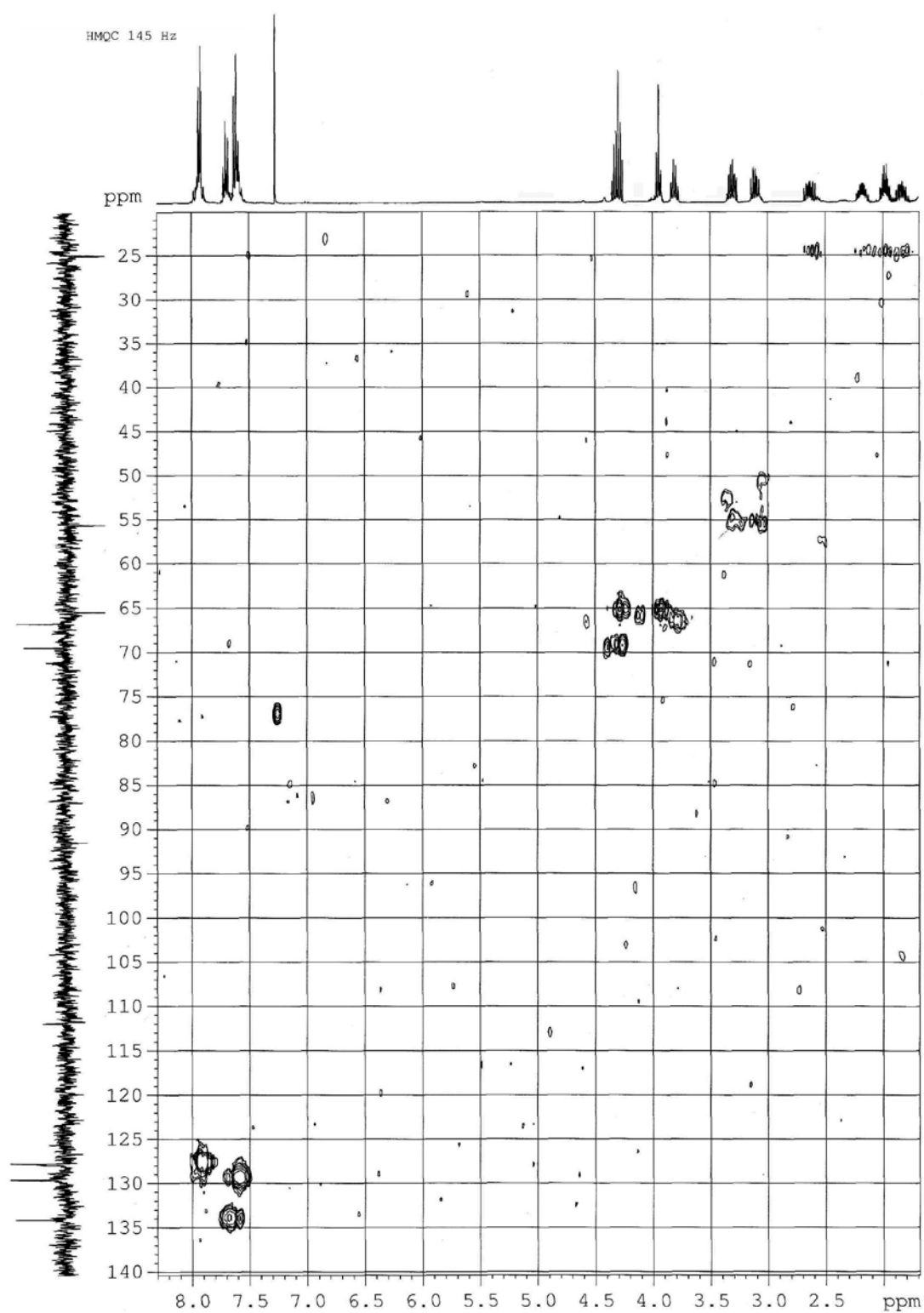
Cosy y Roesy del compuesto **32**:



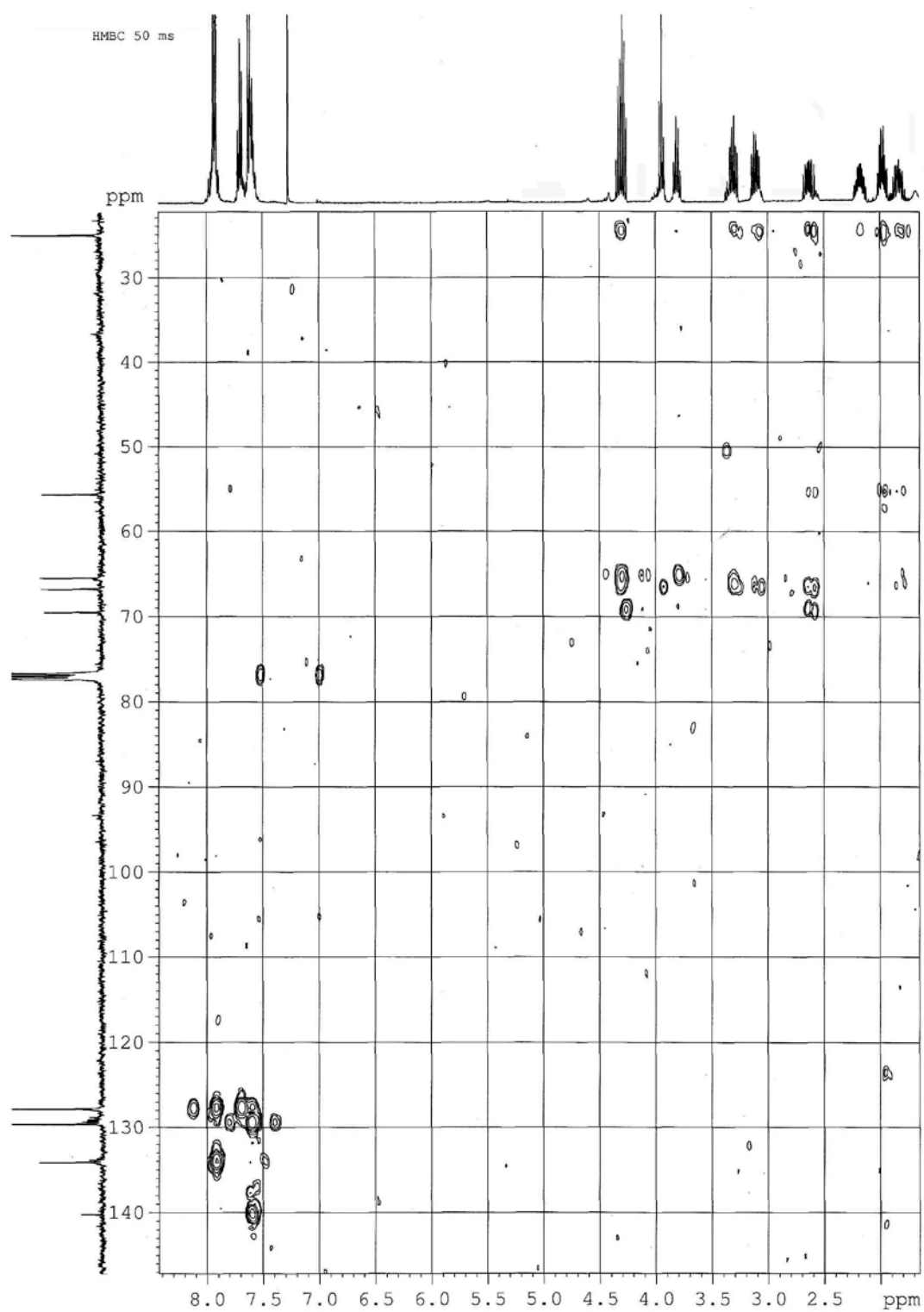
IR y HRMS del compuesto **32**:



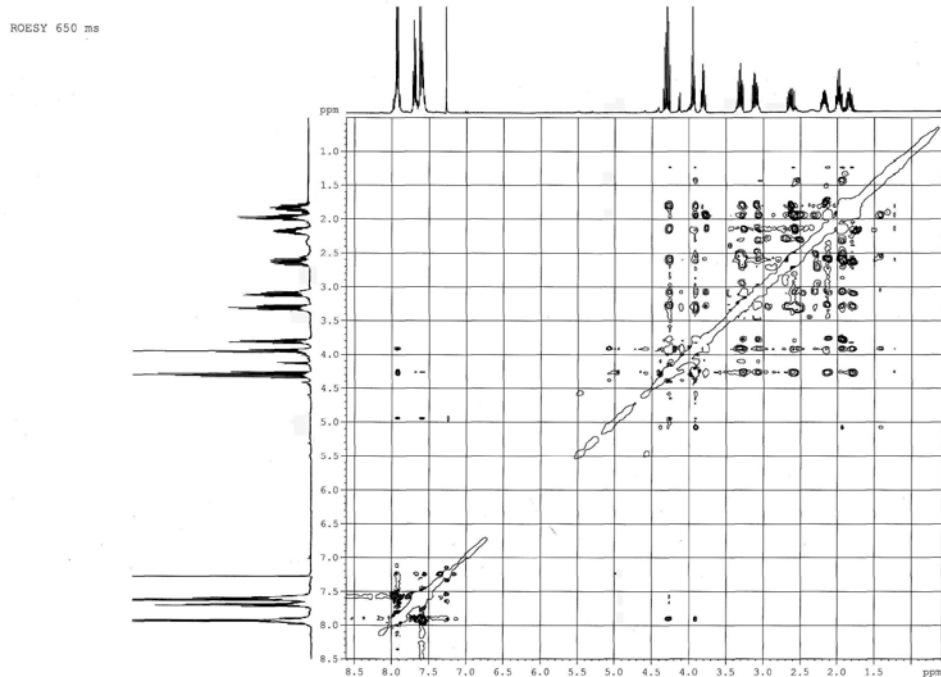
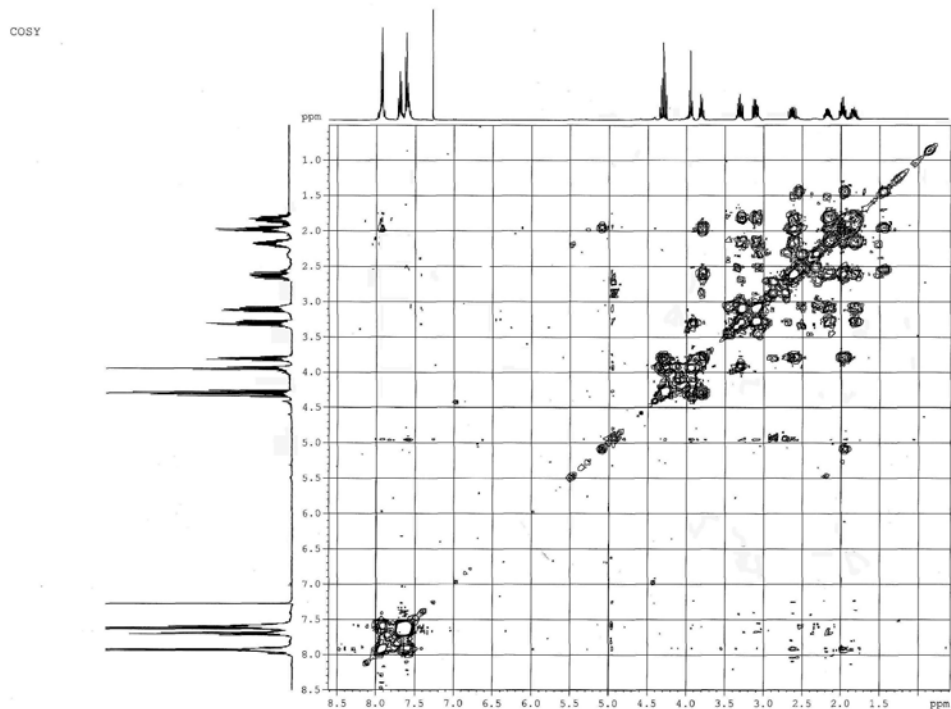
^1H y ^{13}C del compuesto **33**:

HMQC del compuesto **33**:

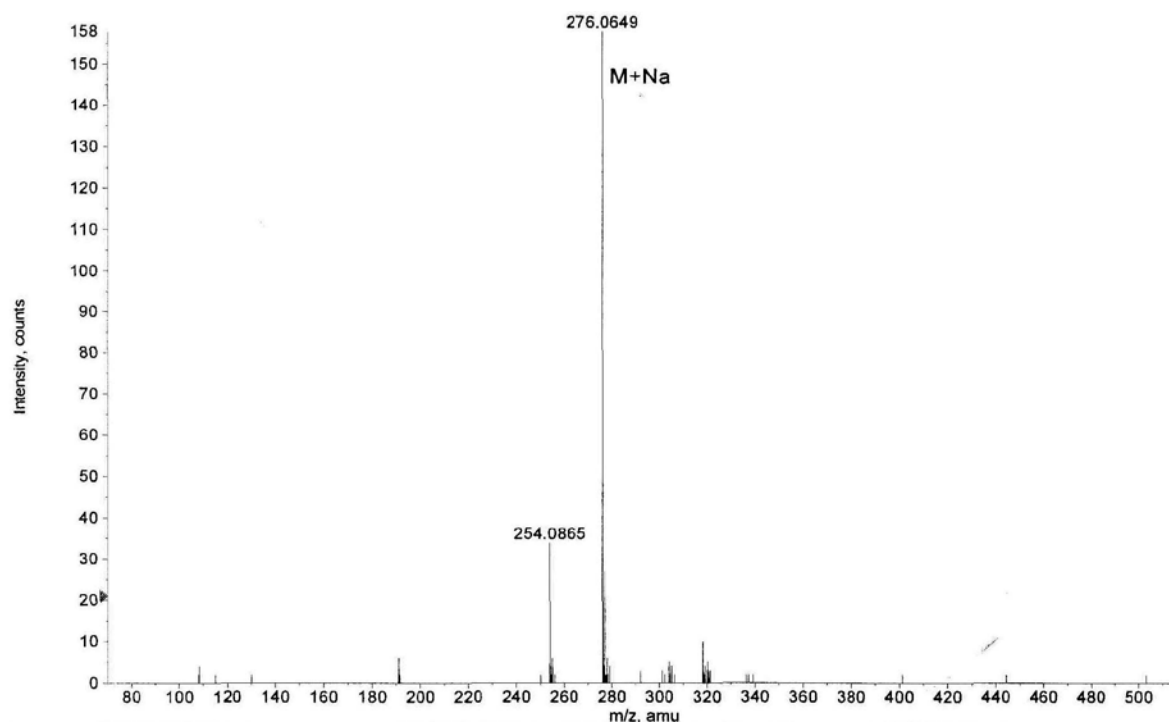
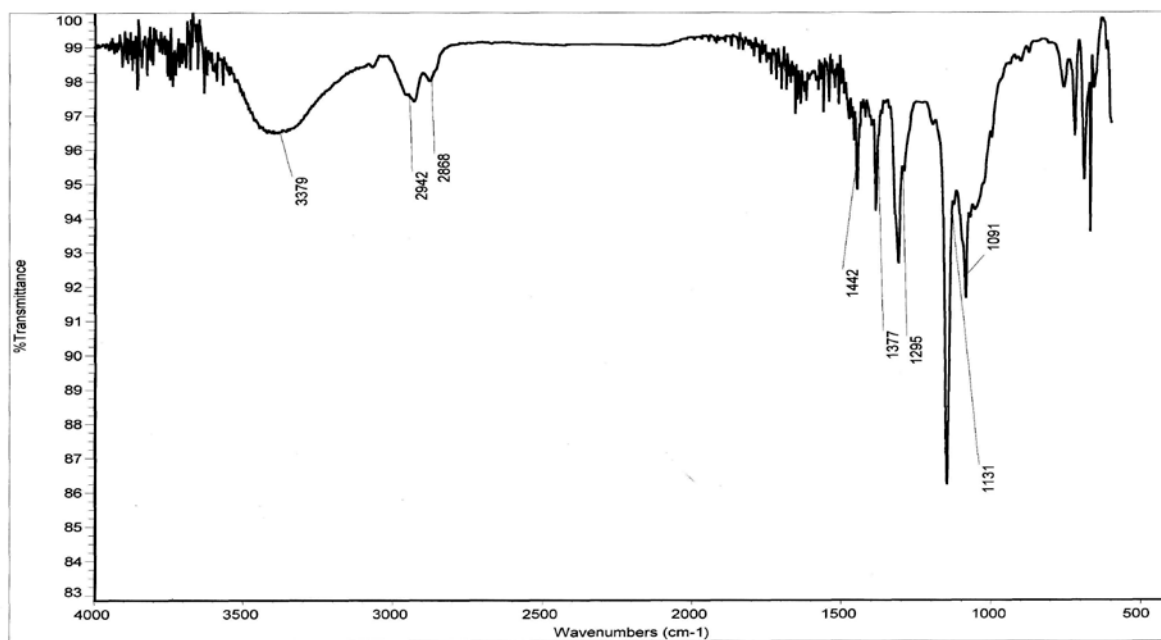
HMBC del compuesto 33:



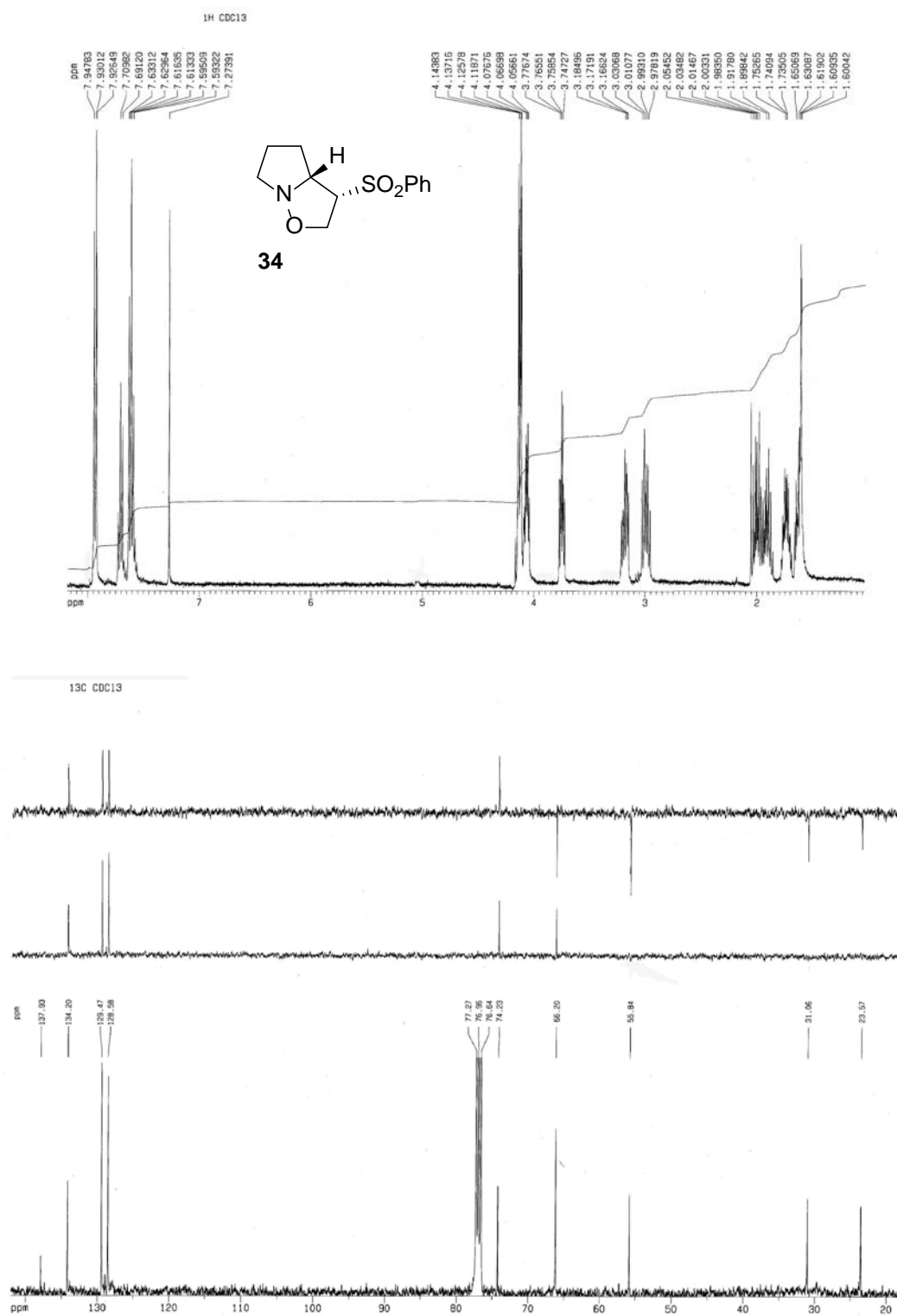
Cosy y Roesy del compuesto **33**:



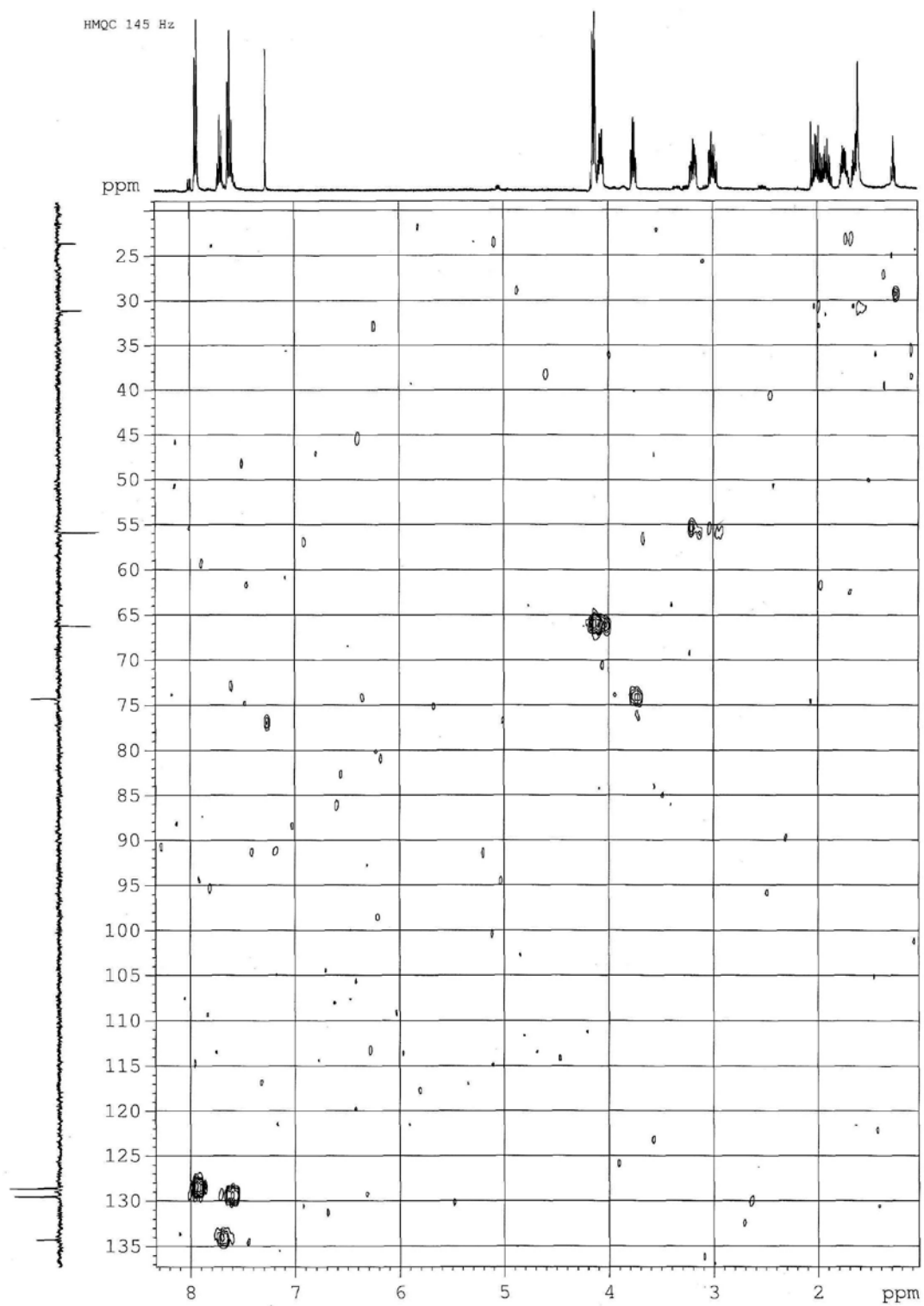
IR y HRMS del compuesto **33**:



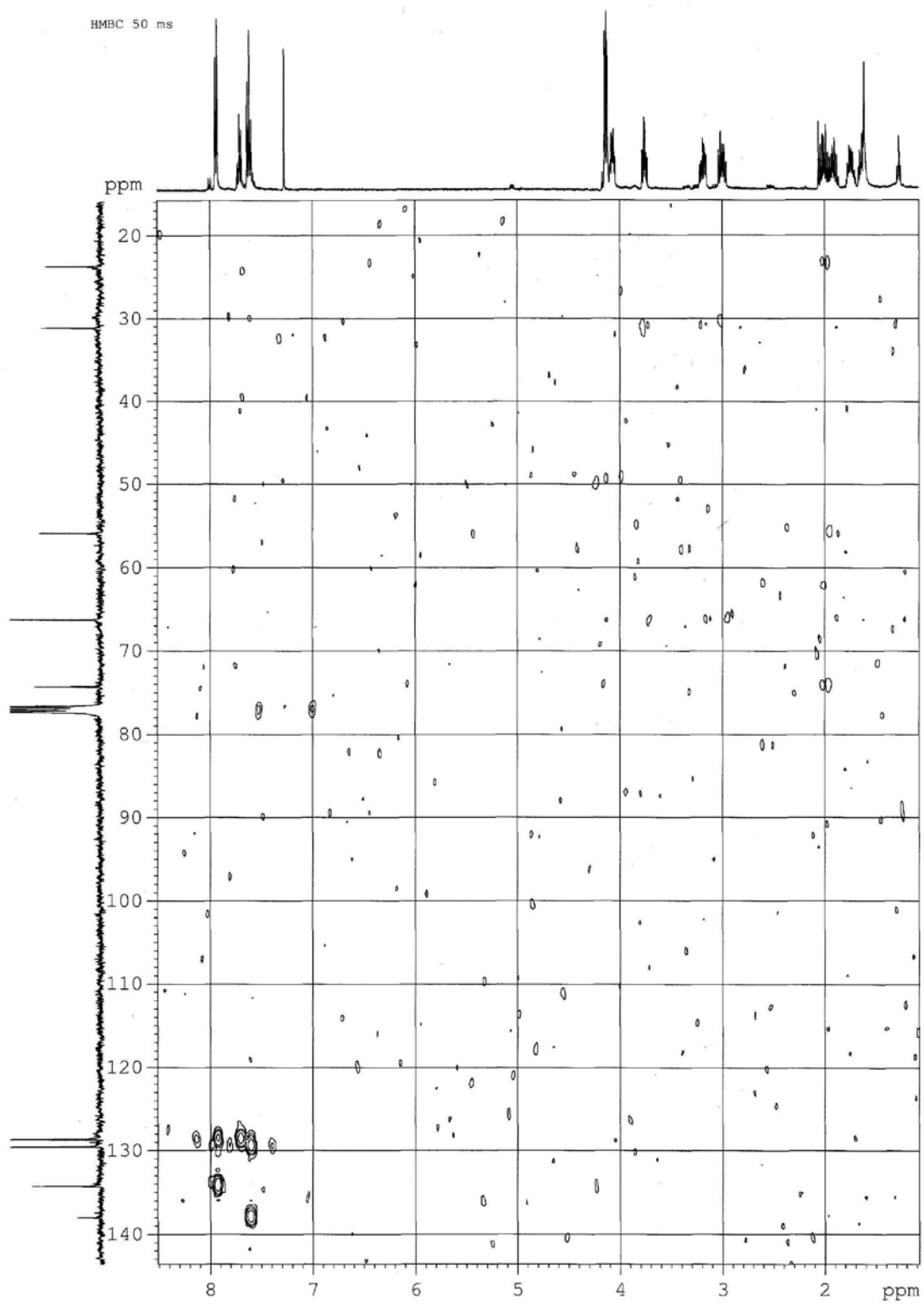
^1H y ^{13}C del compuesto **34**:



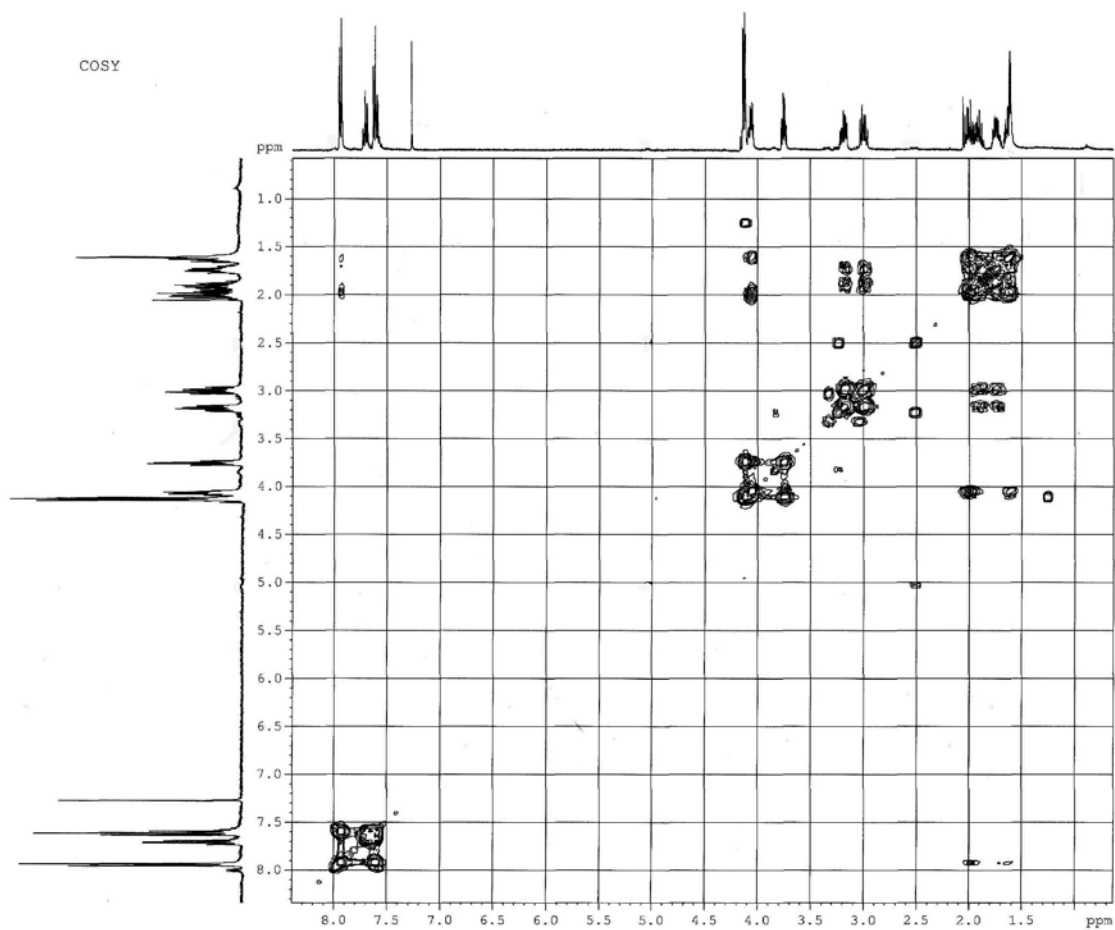
HMQC del compuesto 34:



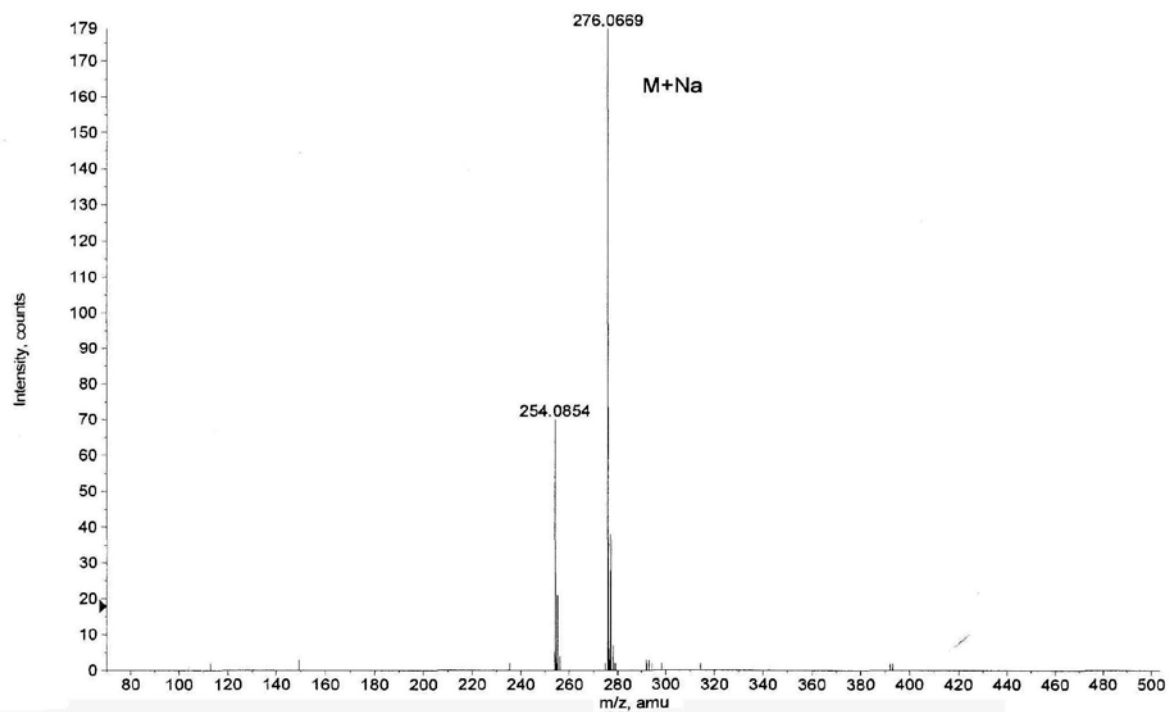
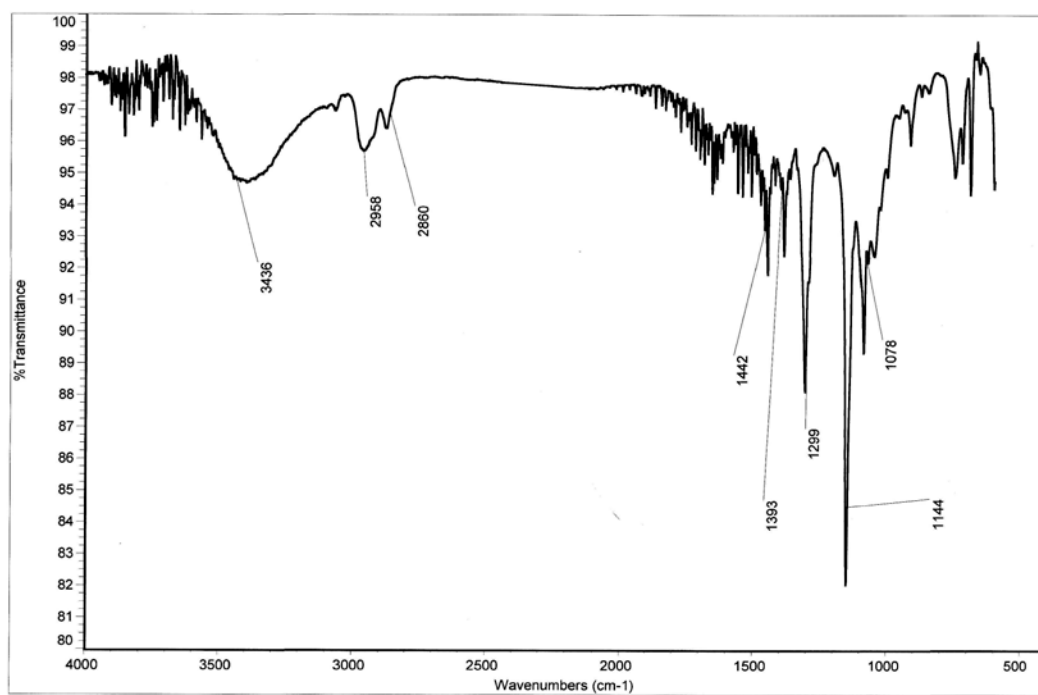
HMBC del compuesto 34:

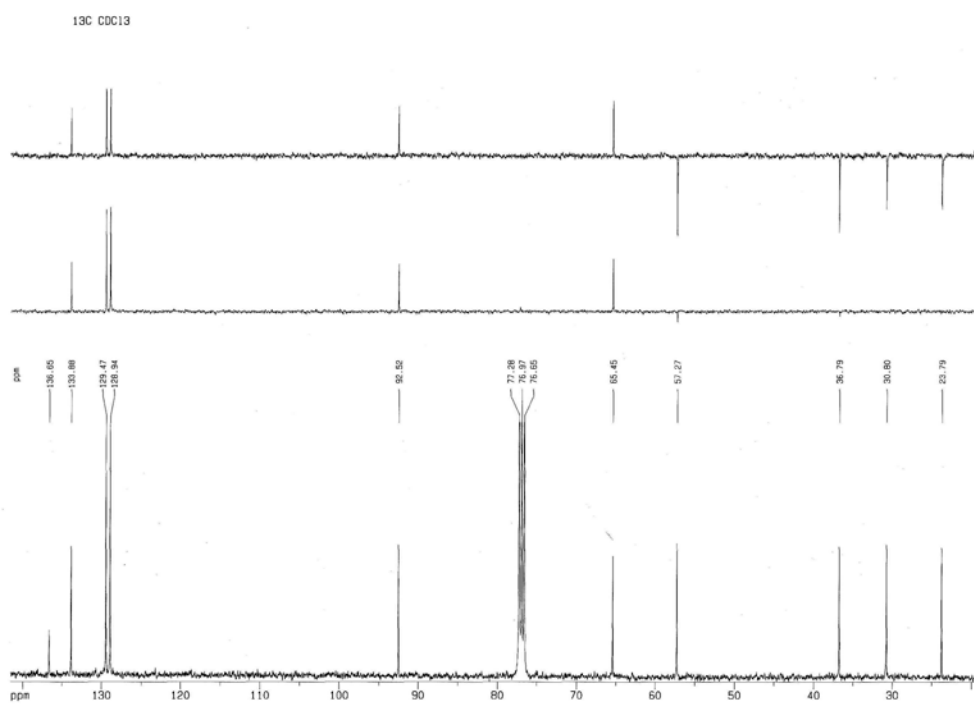
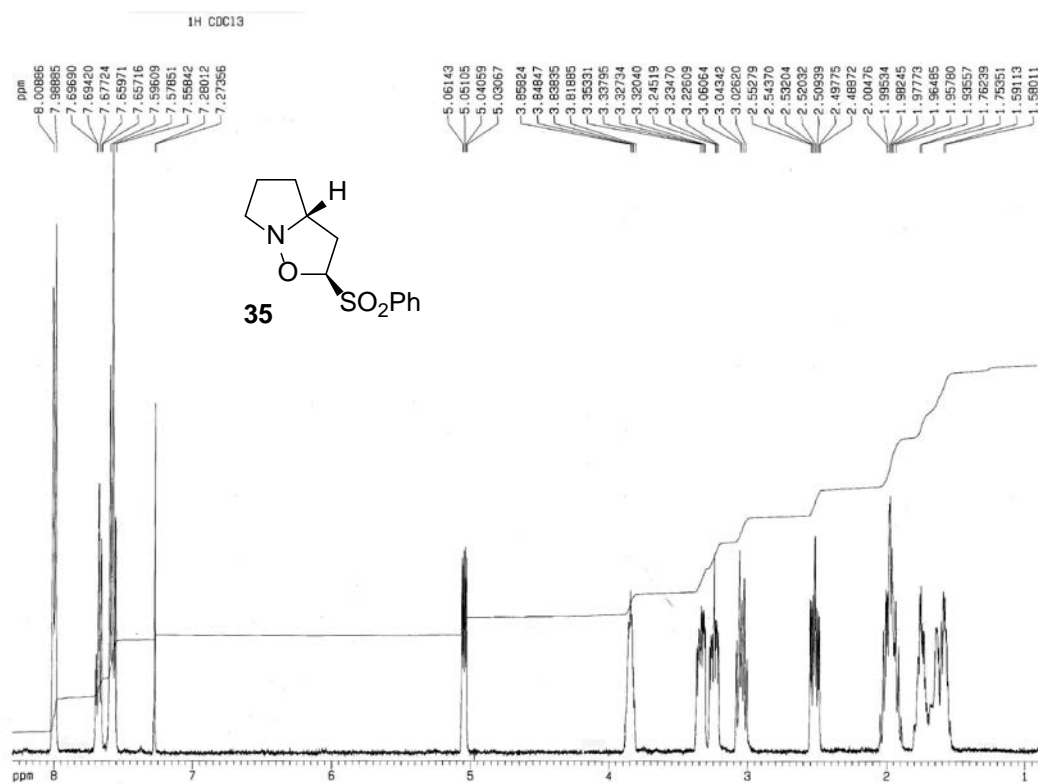


Cosy del compuesto **34**:

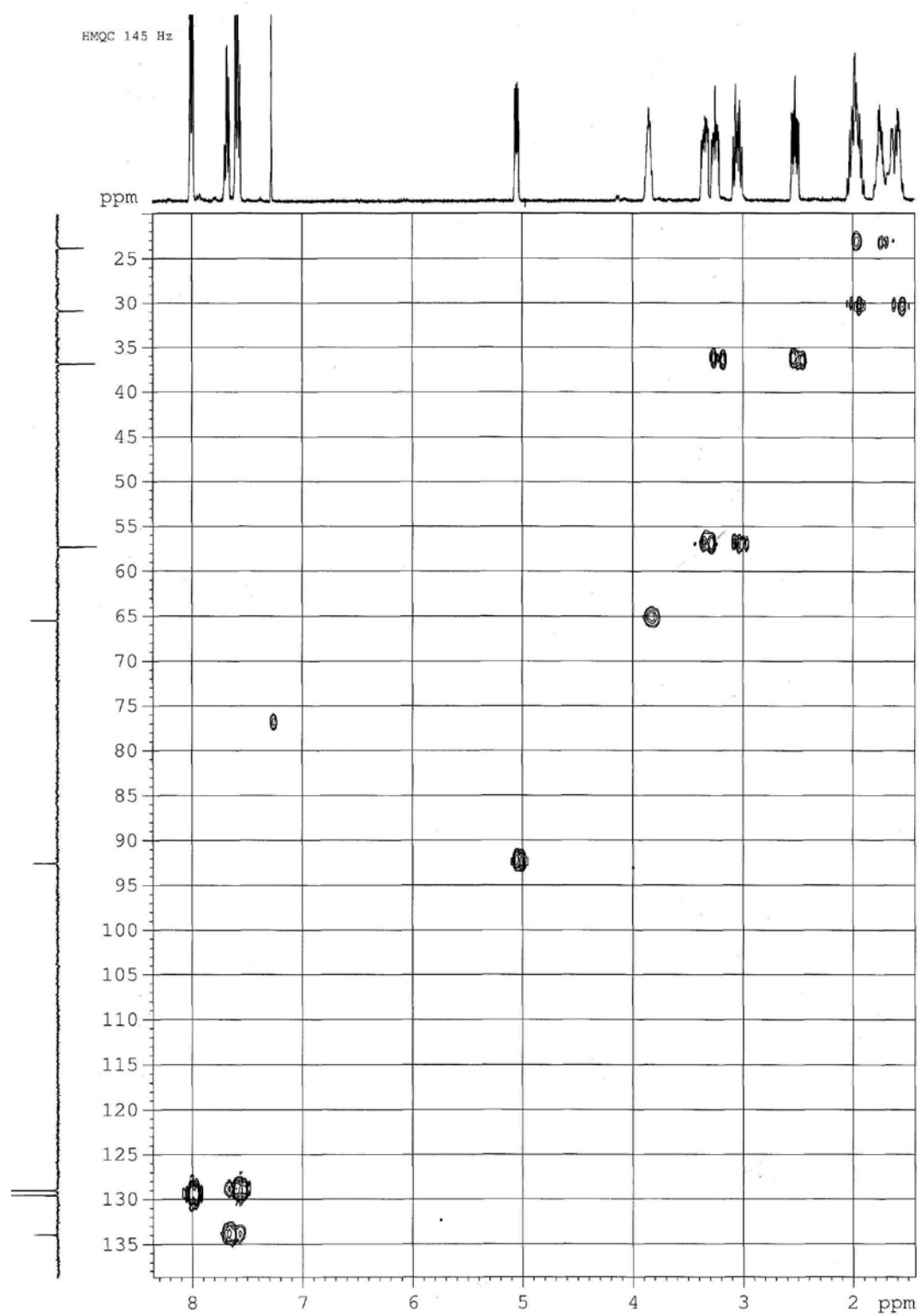


IR y HRMS del compuesto **34**:

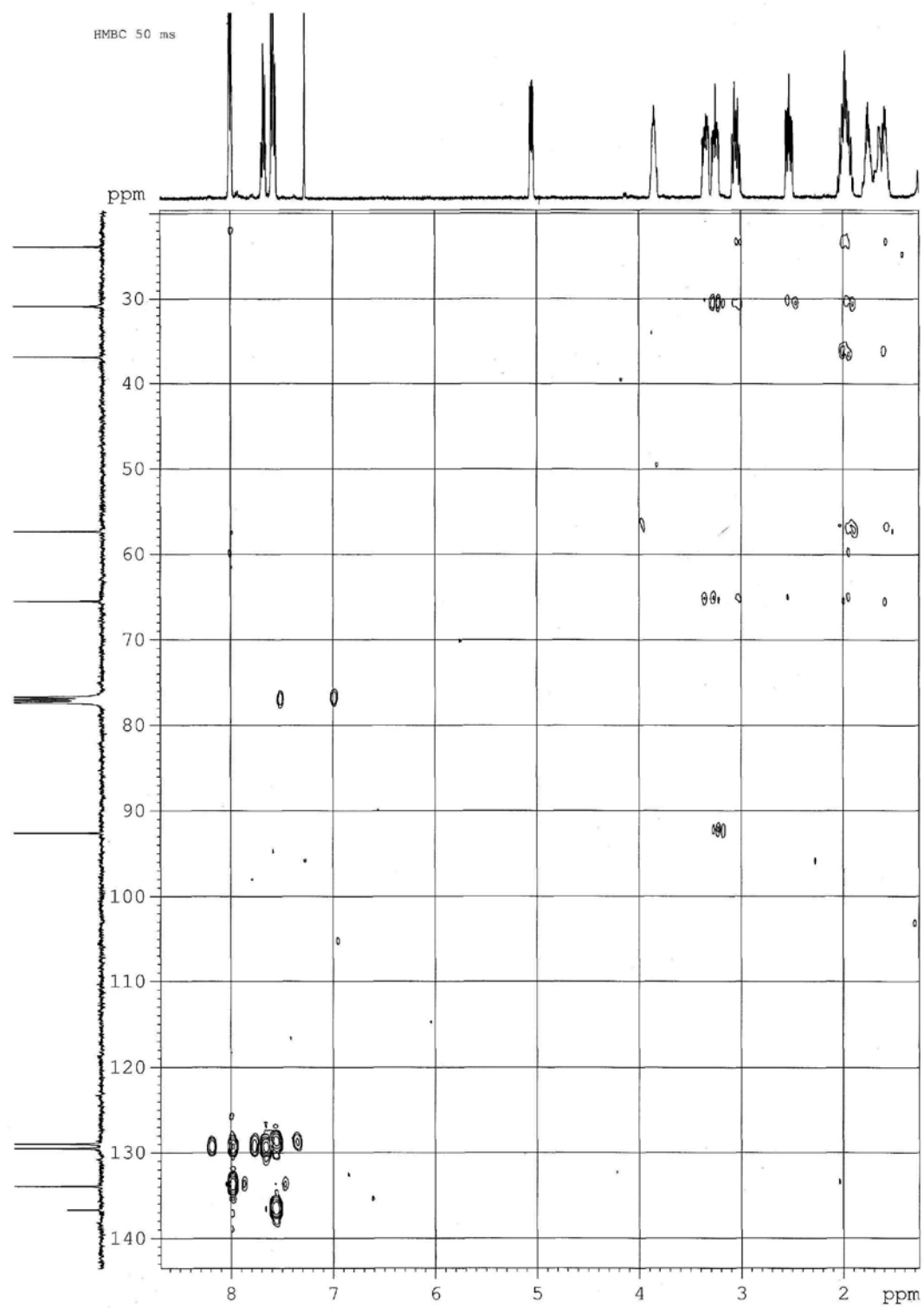


^1H y ^{13}C del compuesto **35**:

HMQC del compuesto 35:

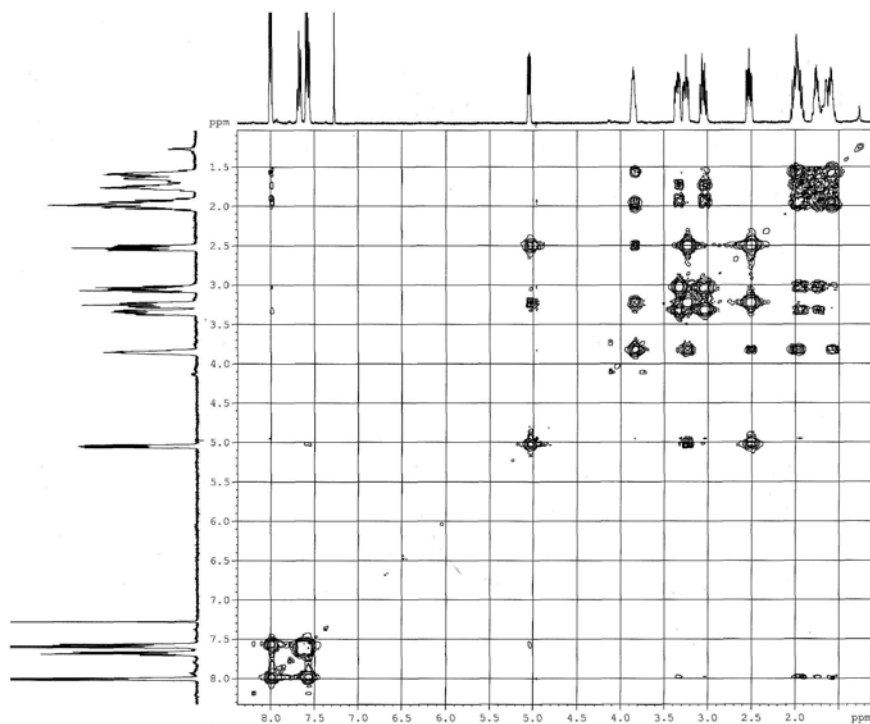


HMBC del compuesto 35:

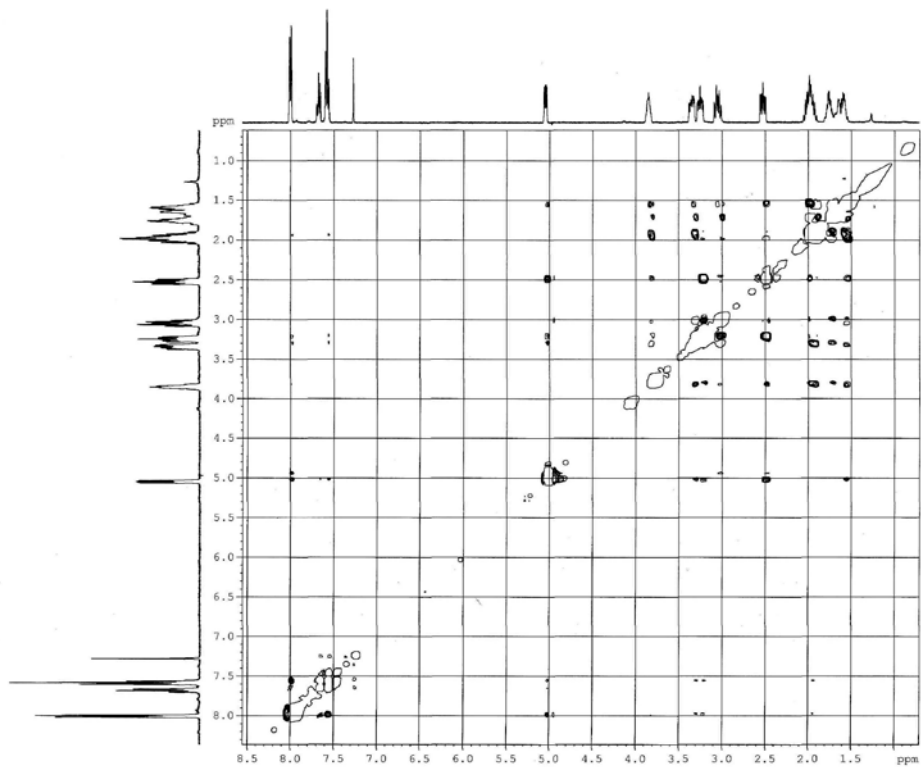


Cosy y Roesy del compuesto **35**:

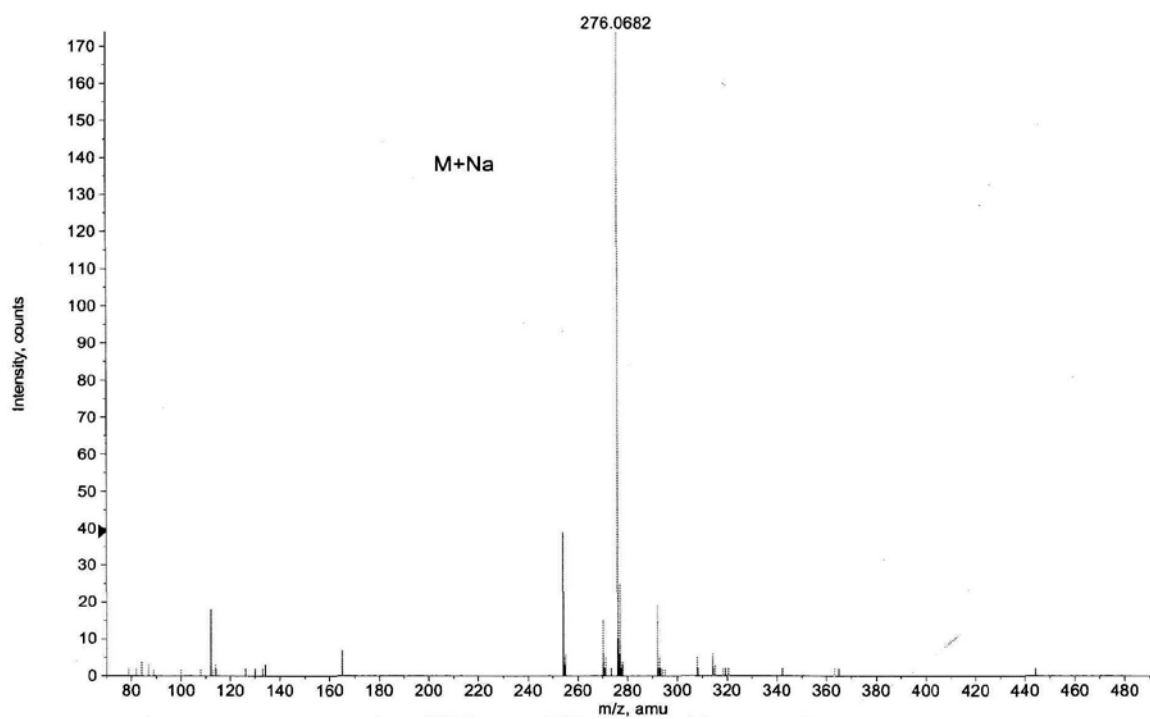
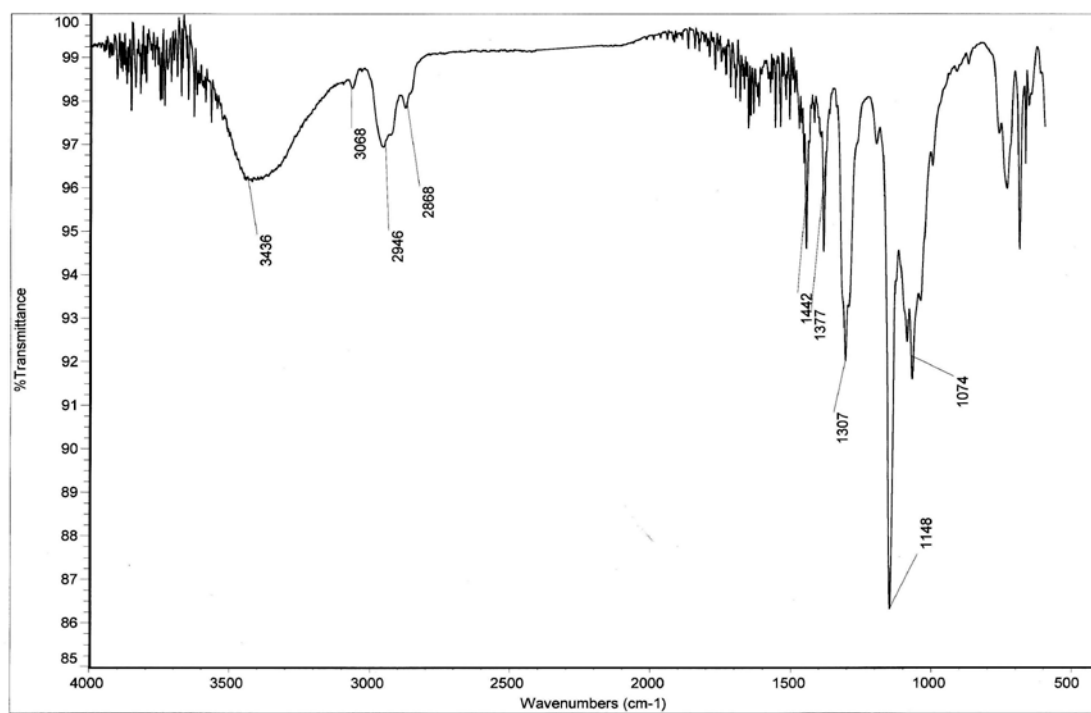
COSY

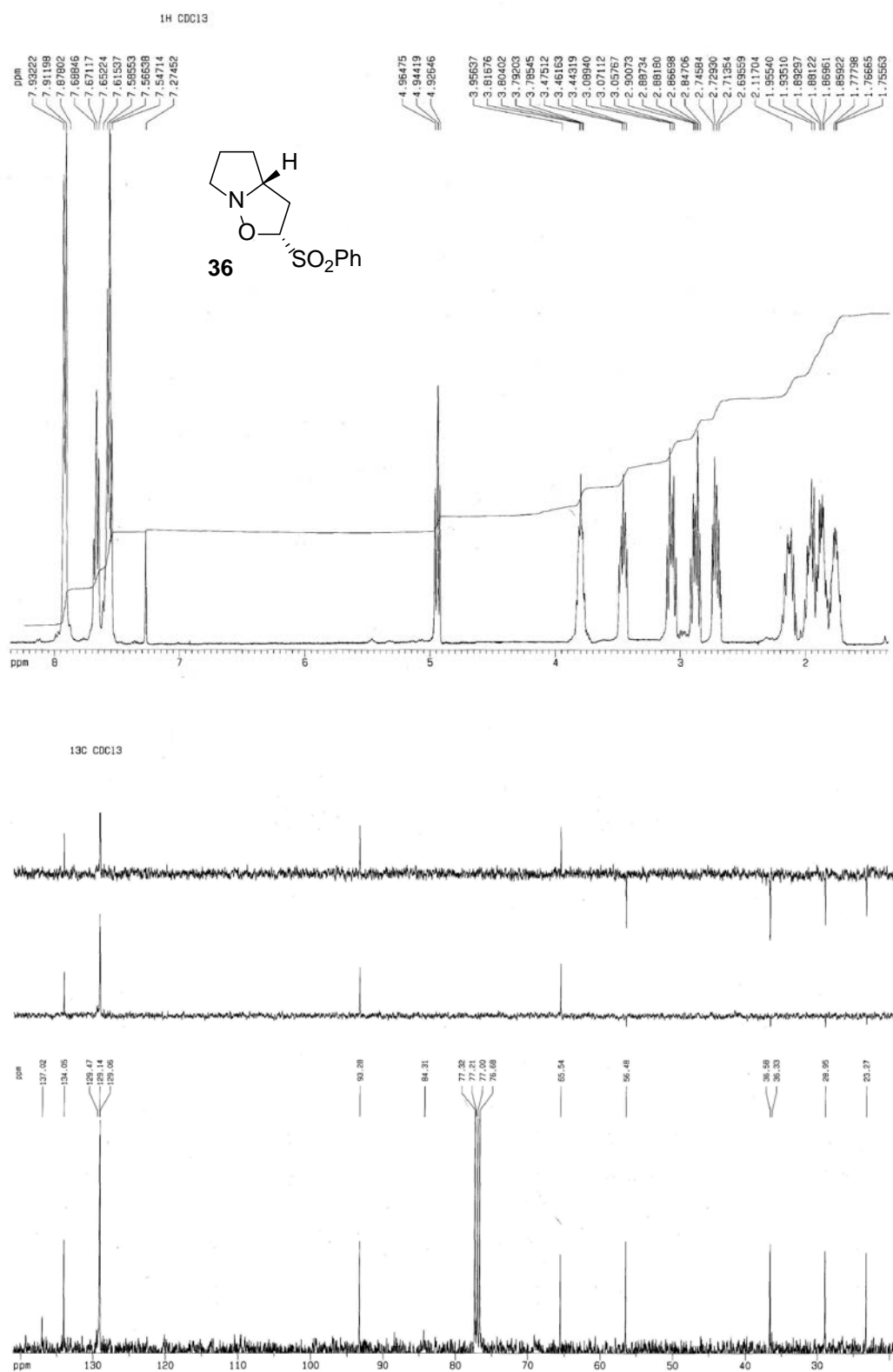


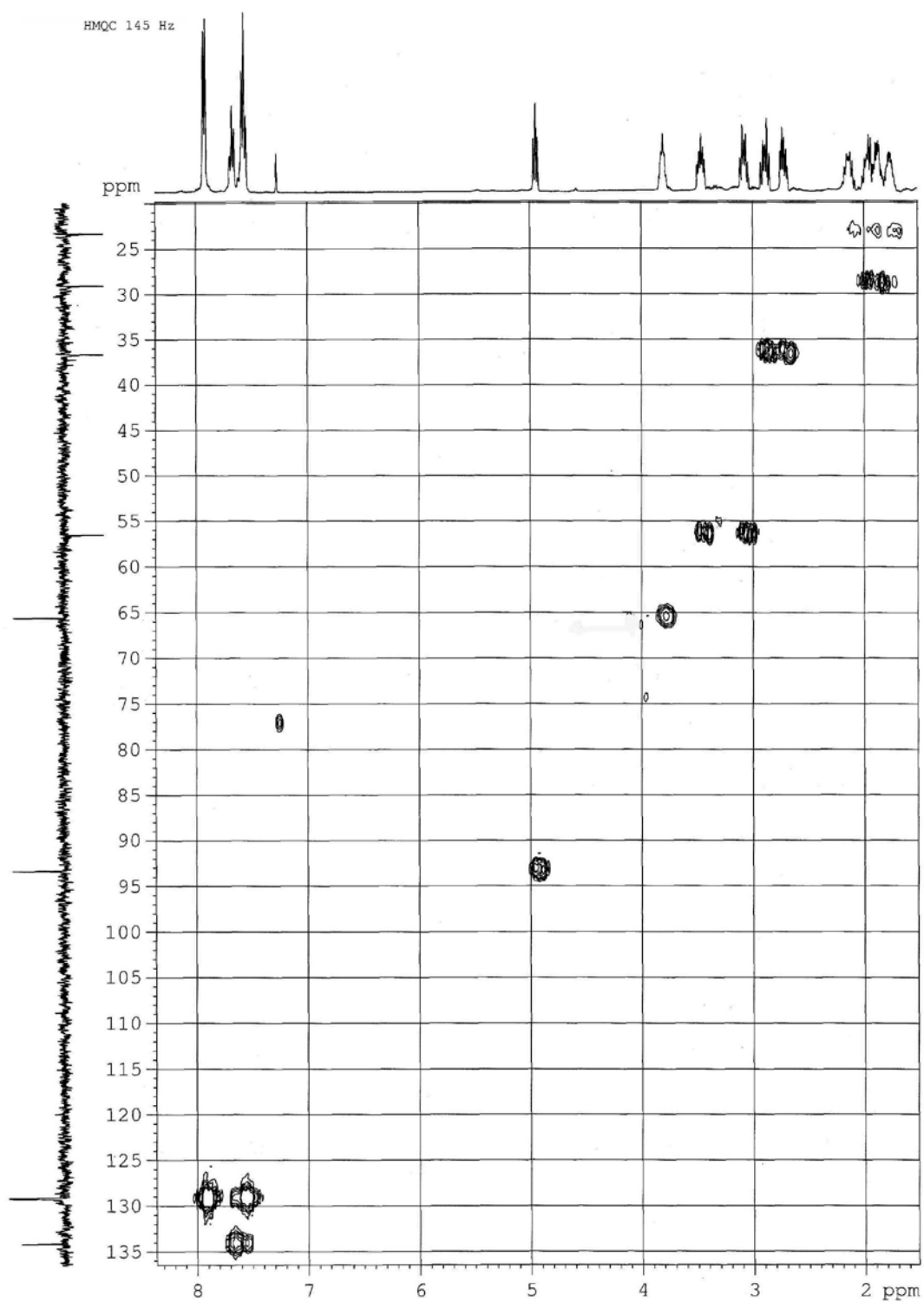
ROESY 650 ms

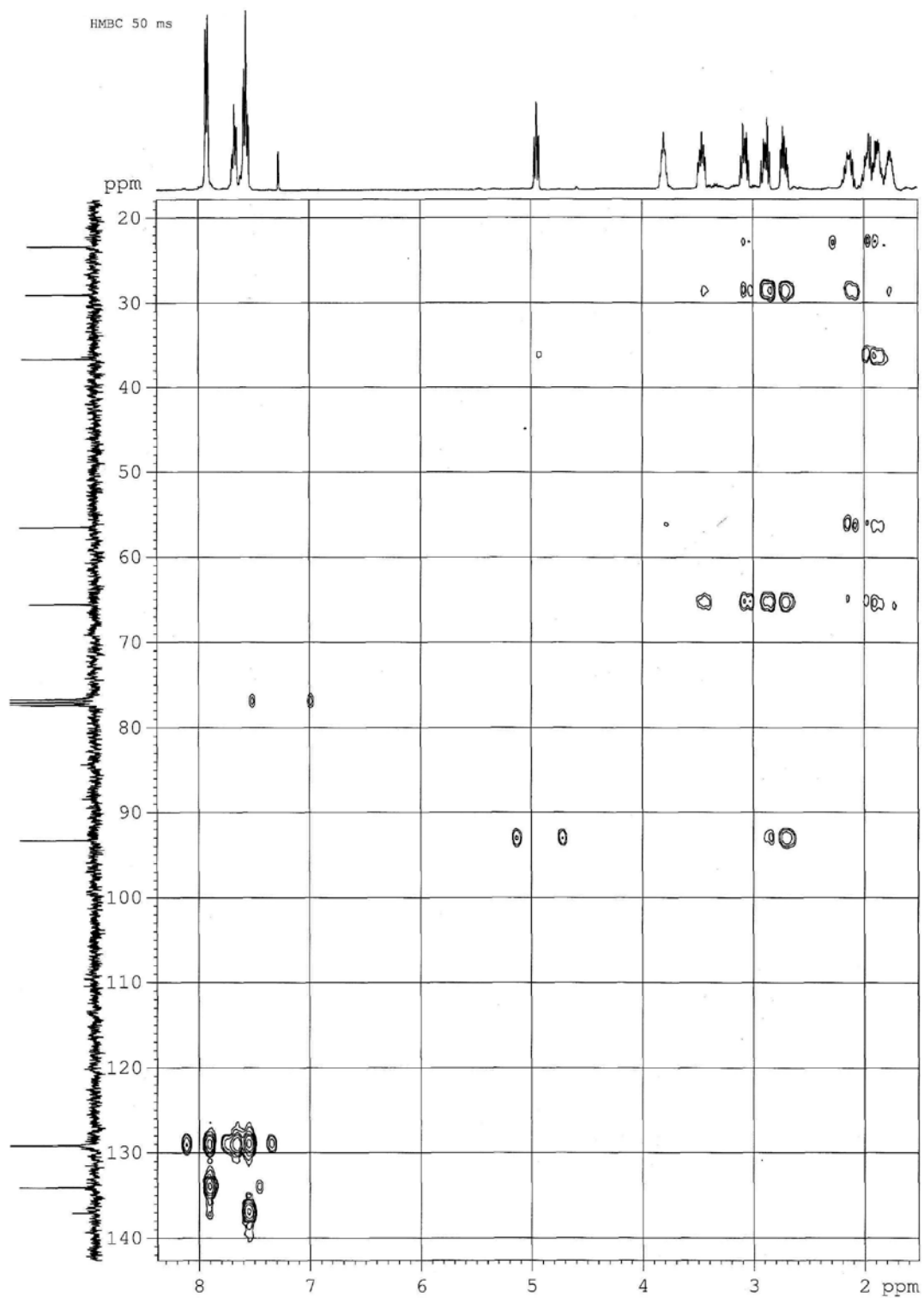


IR y HRMS del compuesto **35**:



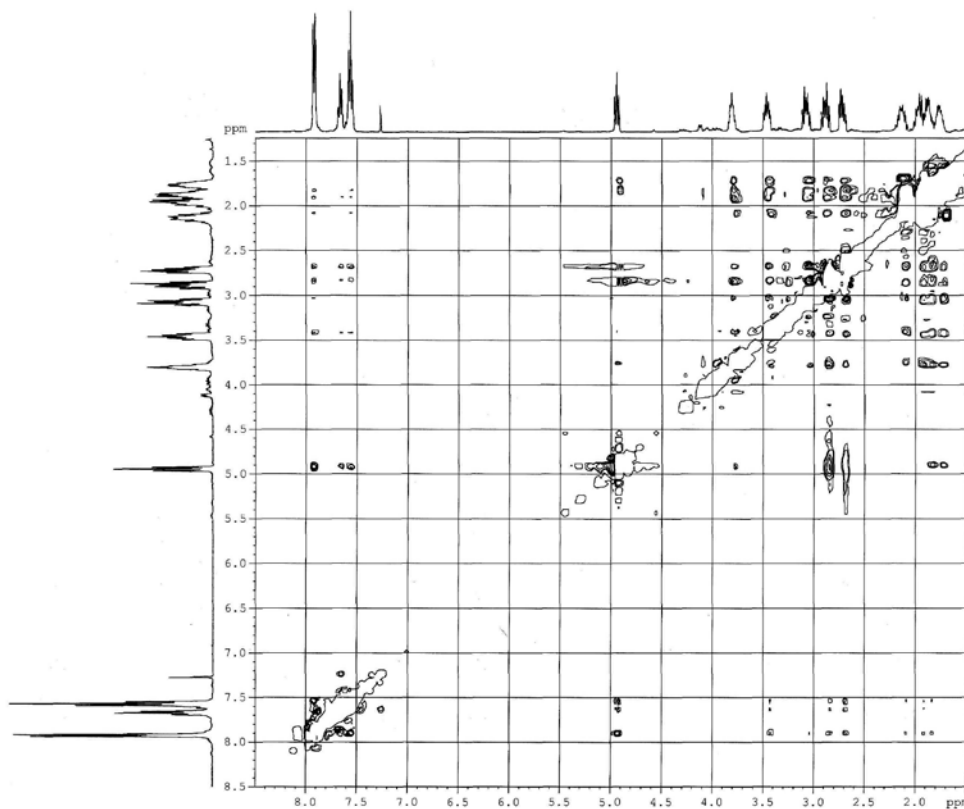
^1H y ^{13}C del compuesto **36**:

HMQC del compuesto **36**:

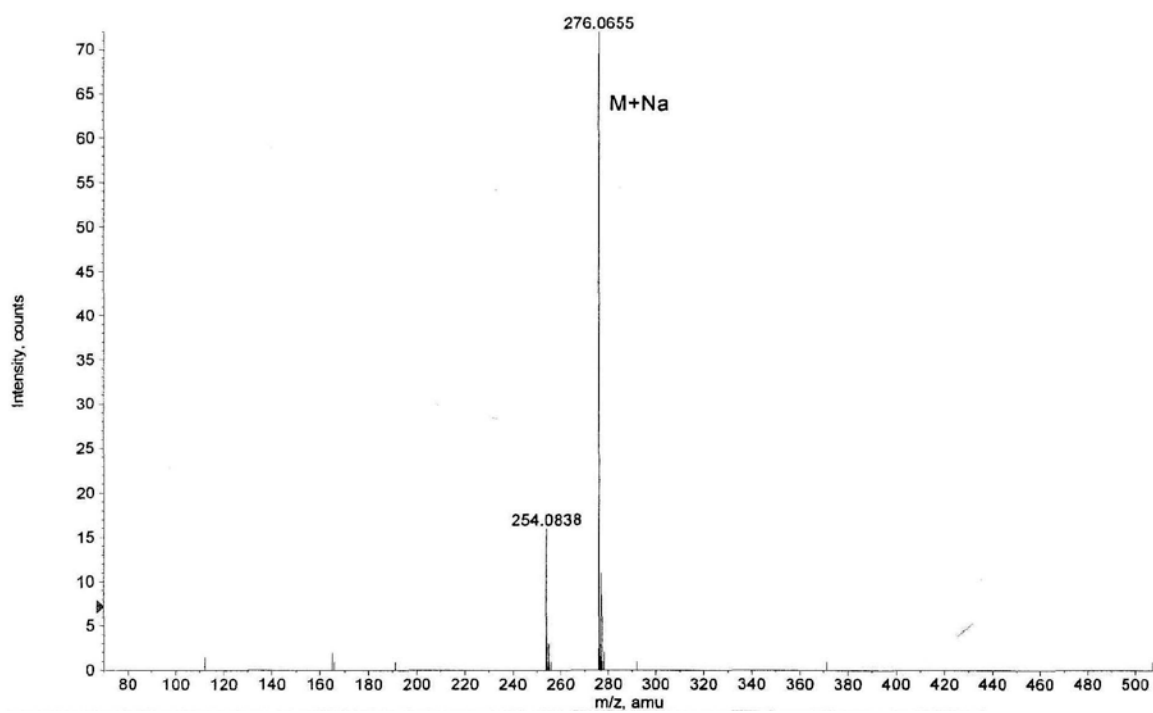
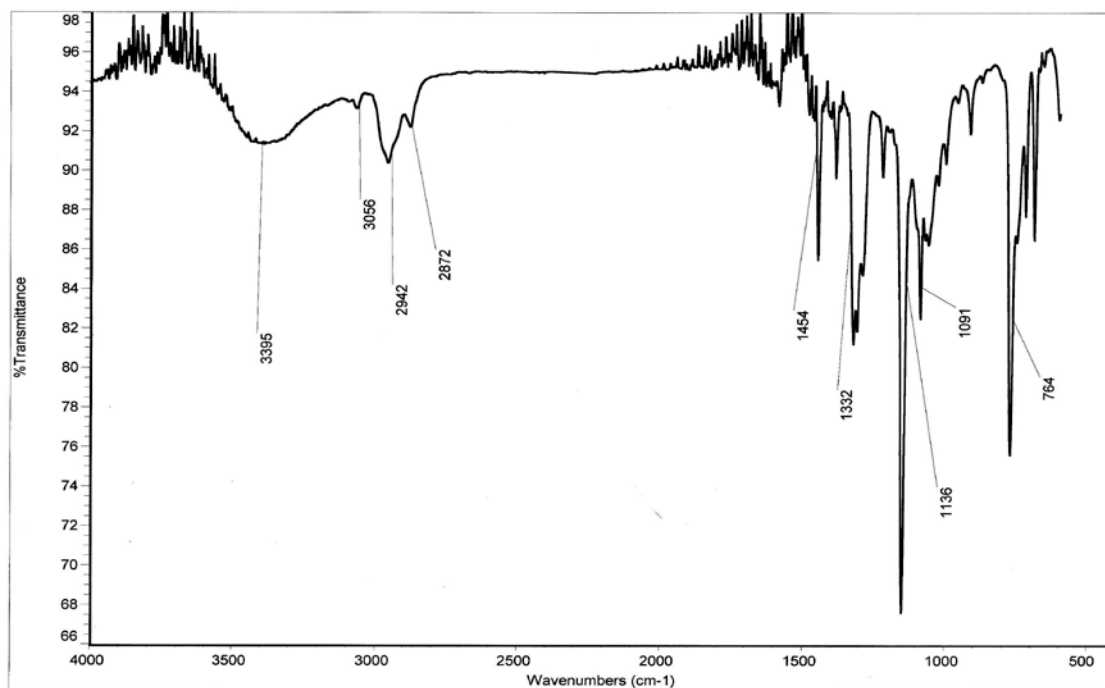
HMBC del compuesto **36**:

Roesy del compuesto **36**:

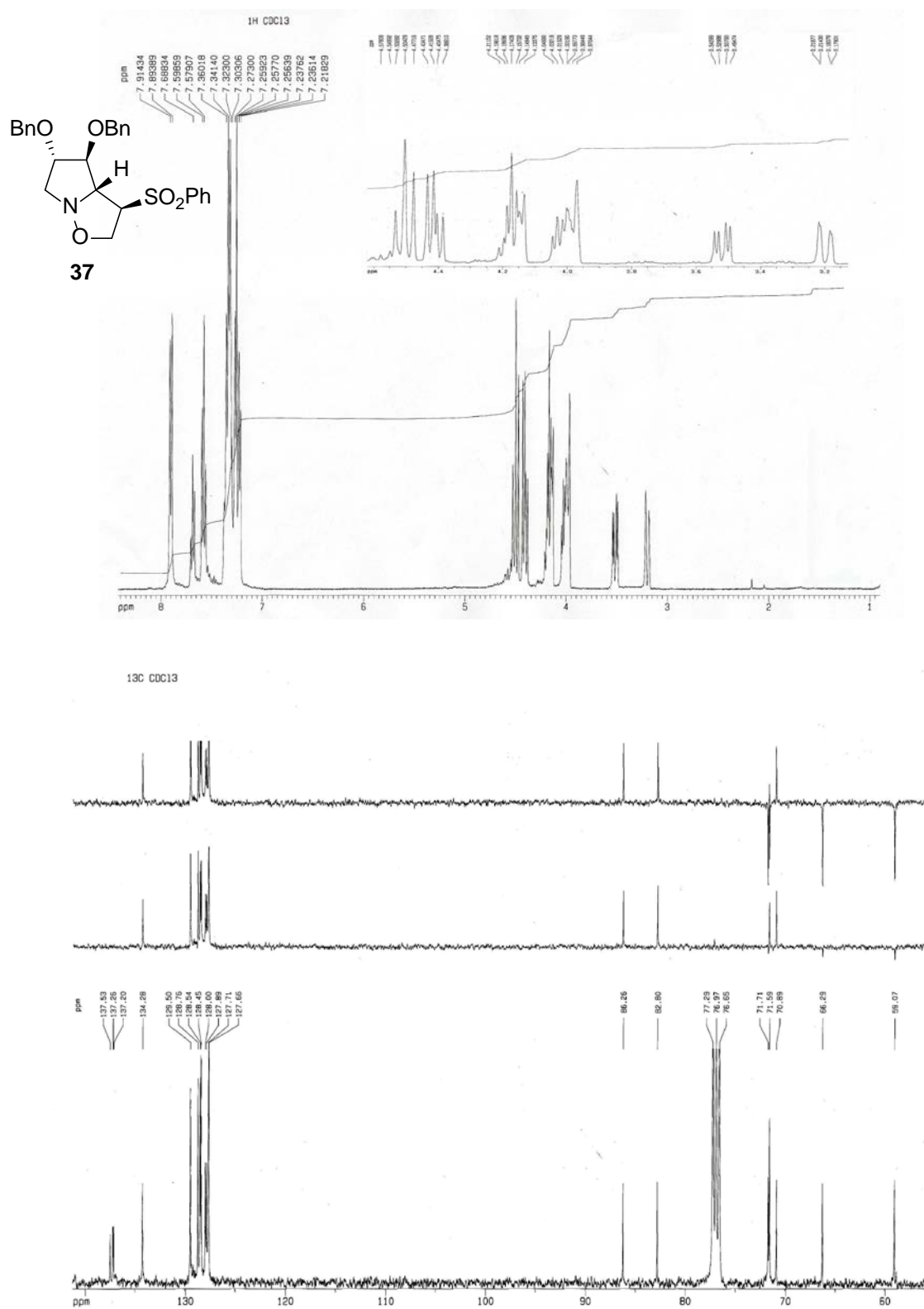
ROESY 650 ms

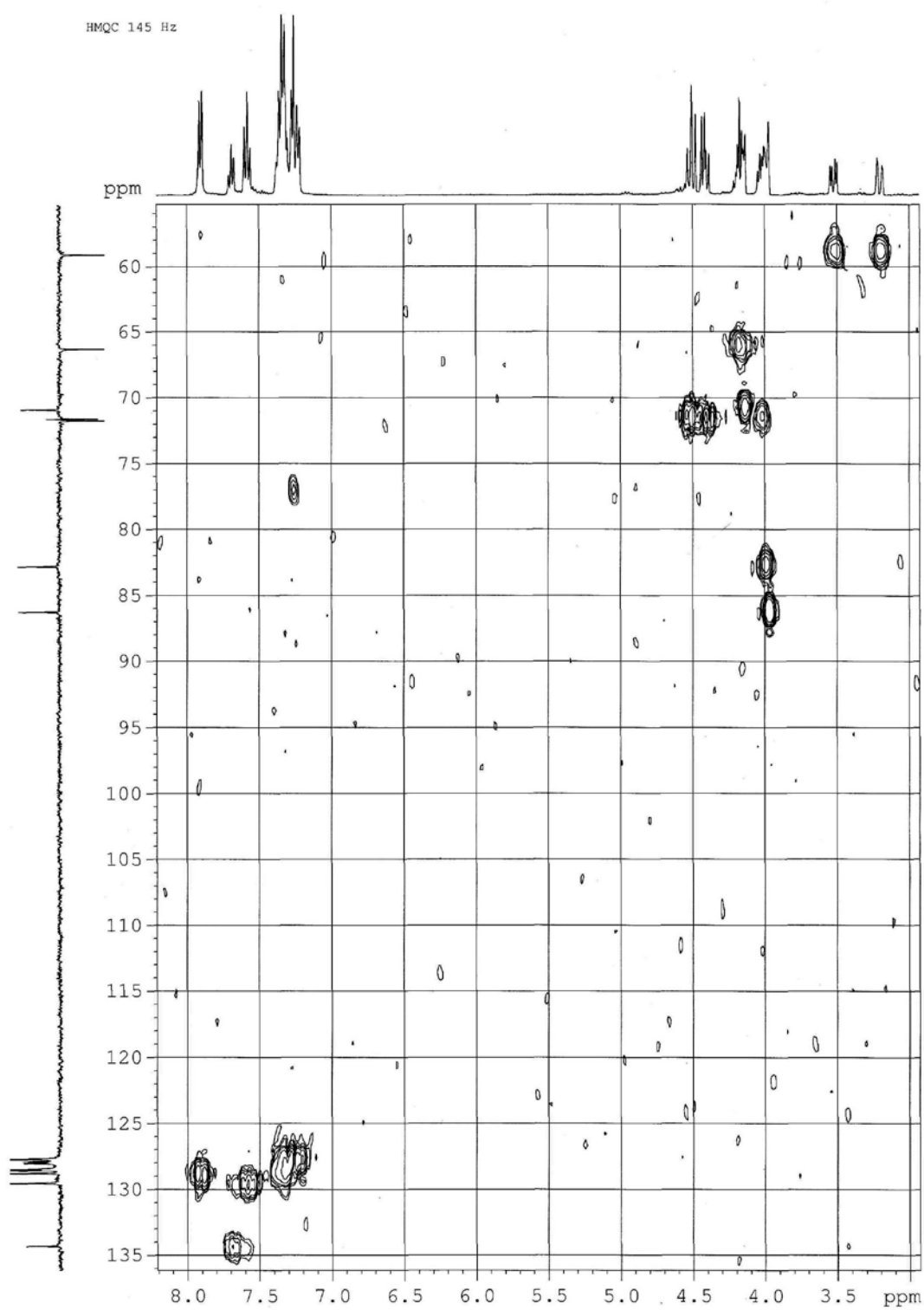


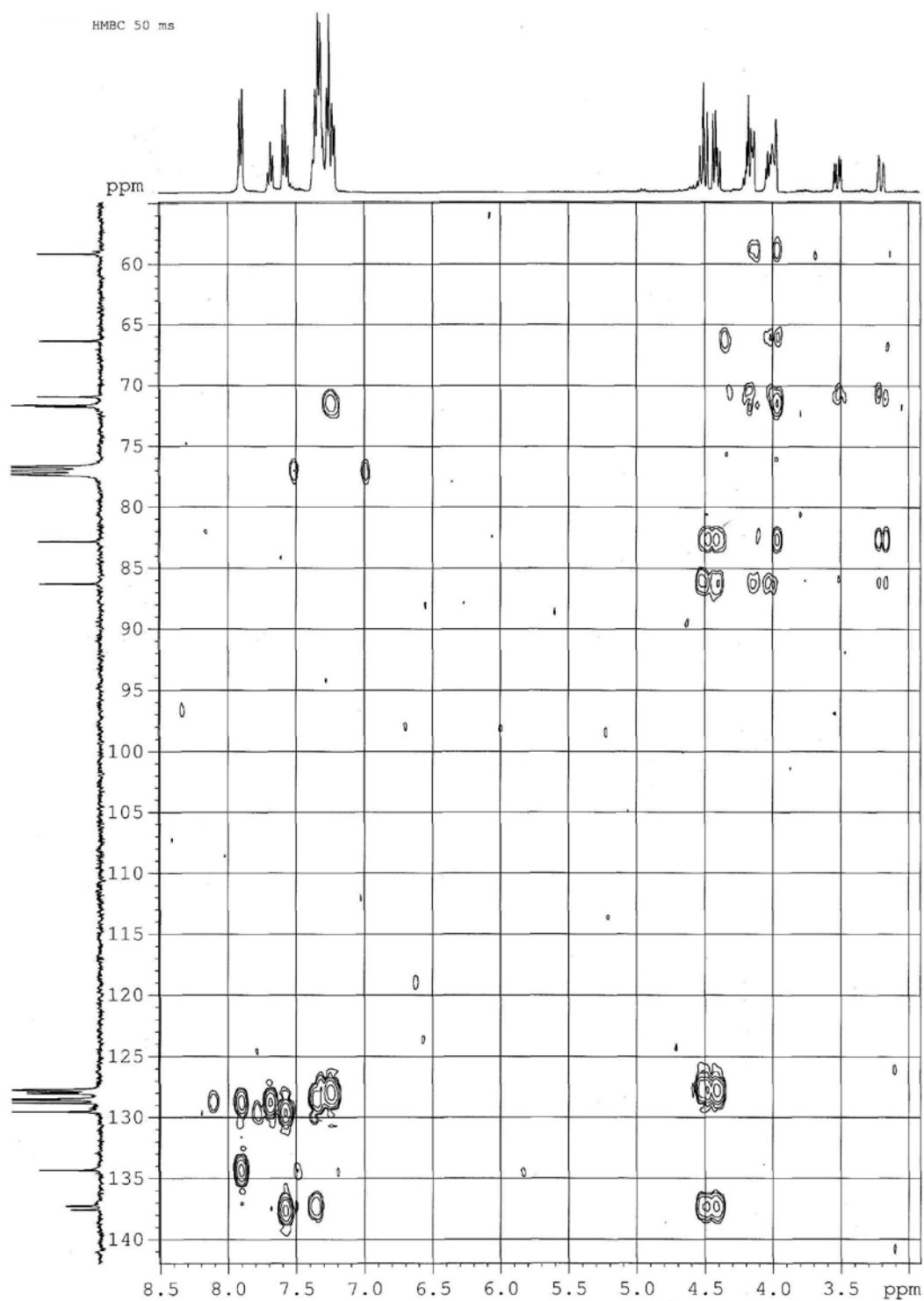
IR y HRMS del compuesto **36**:



^1H y ^{13}C del compuesto **37**:

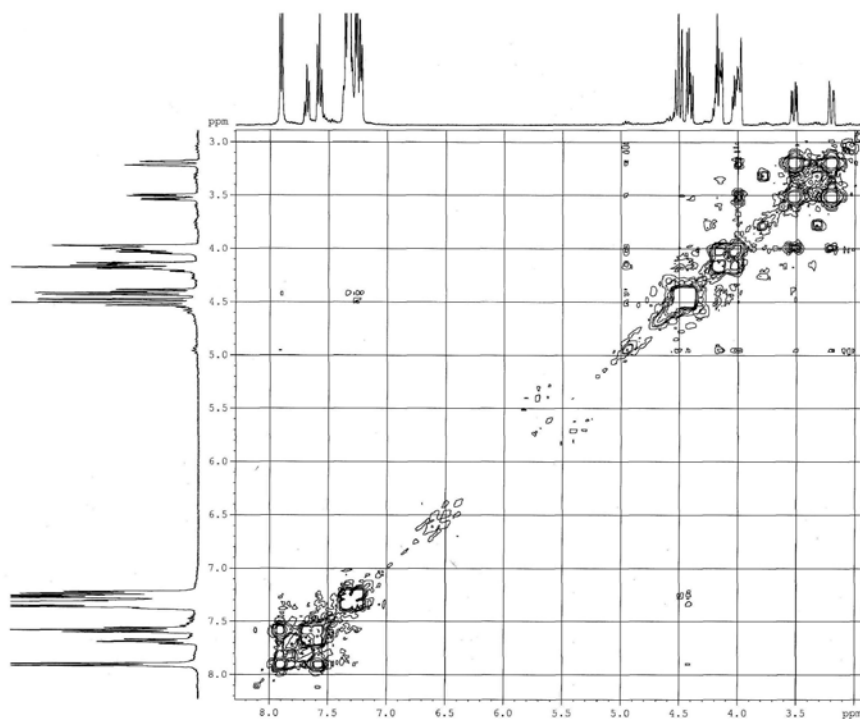


HMQC del compuesto **37**:

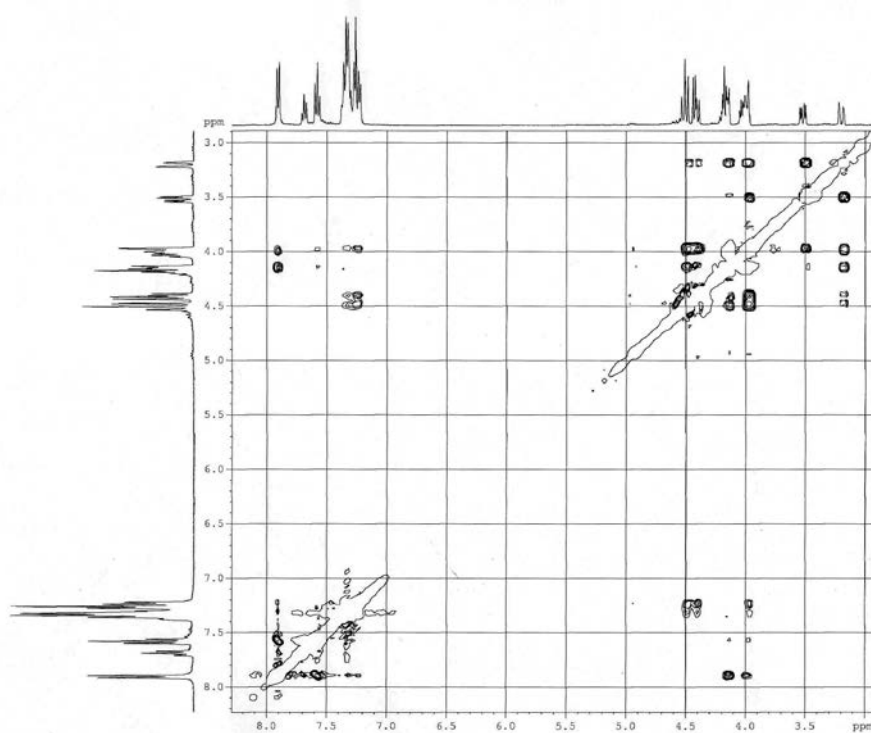
HMBC del compuesto **37**:

Cosy y Roesy del compuesto **37**:

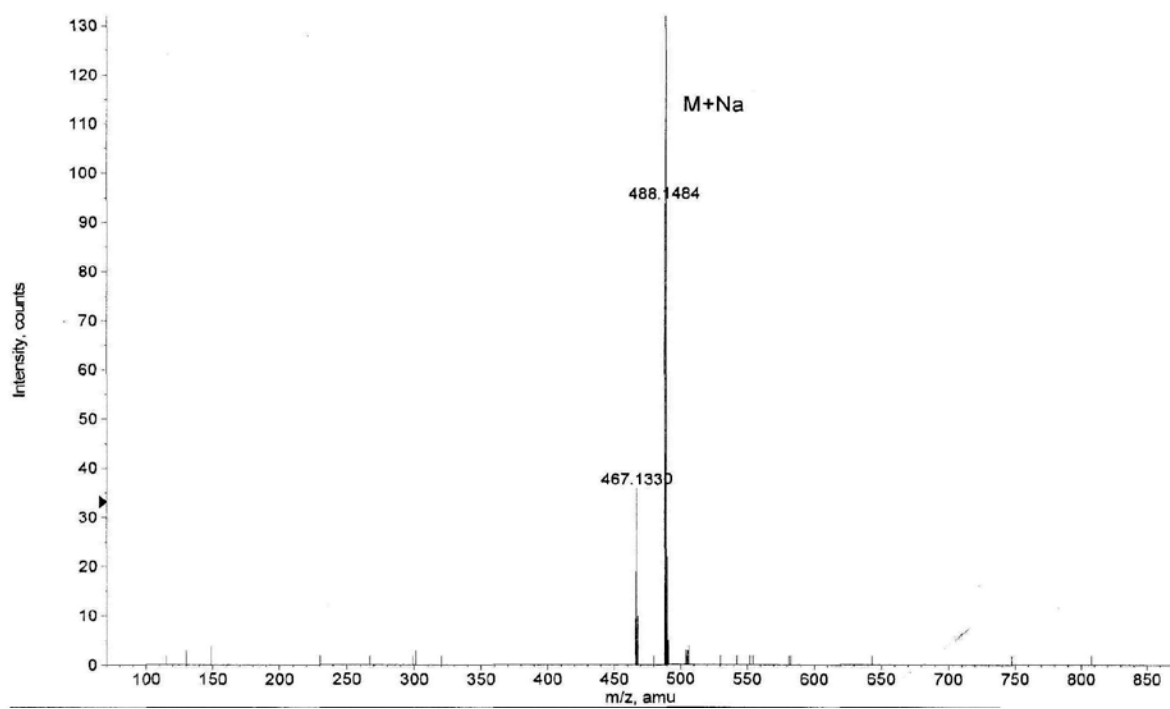
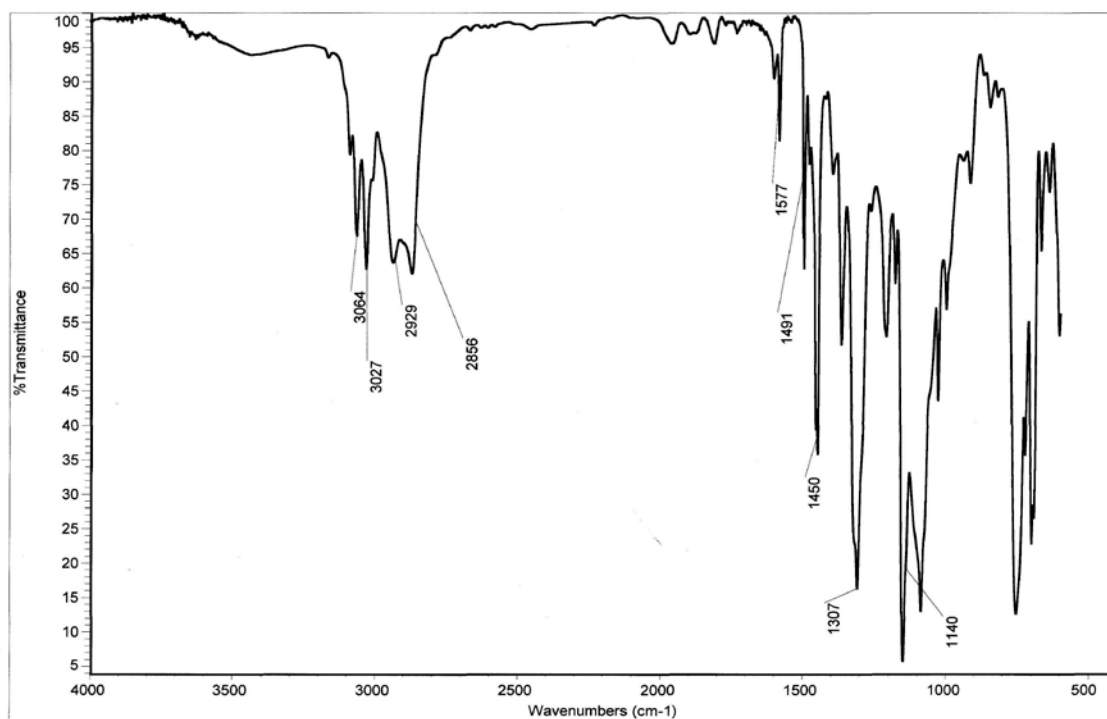
COSY

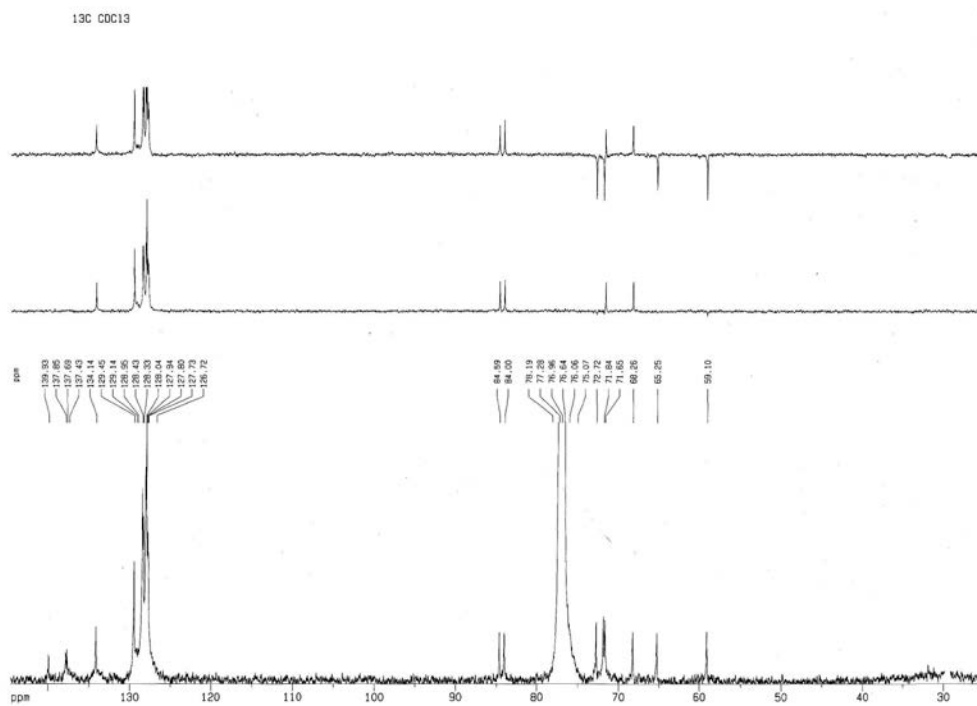
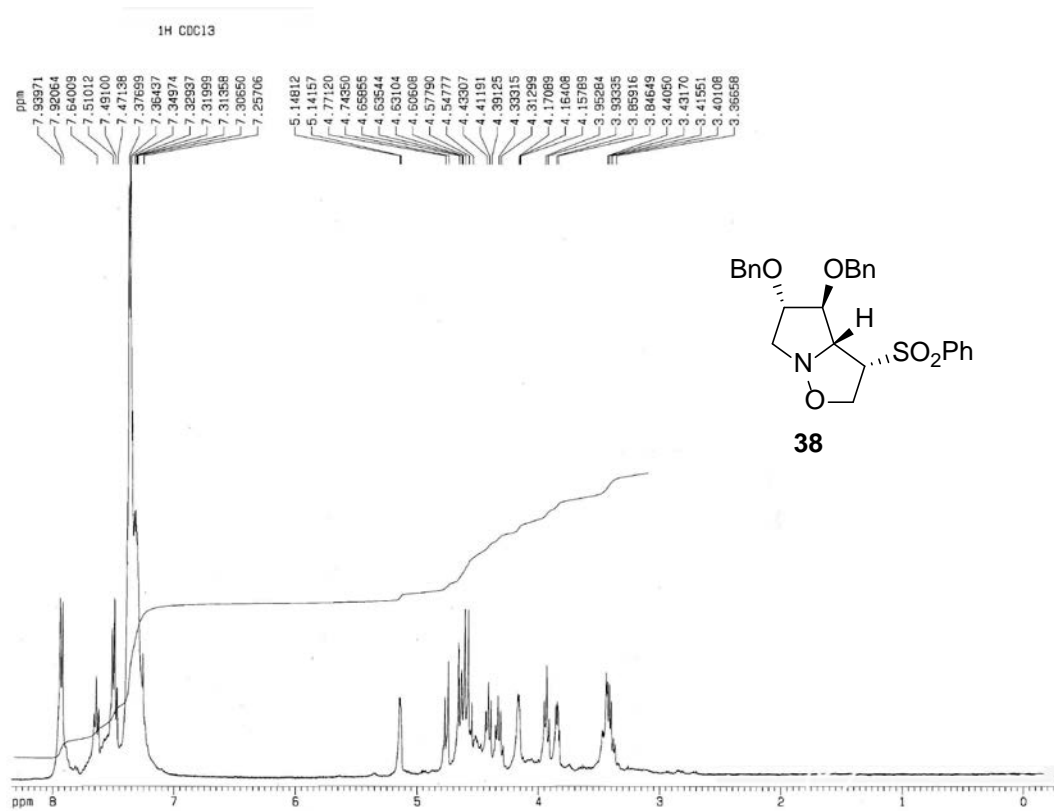


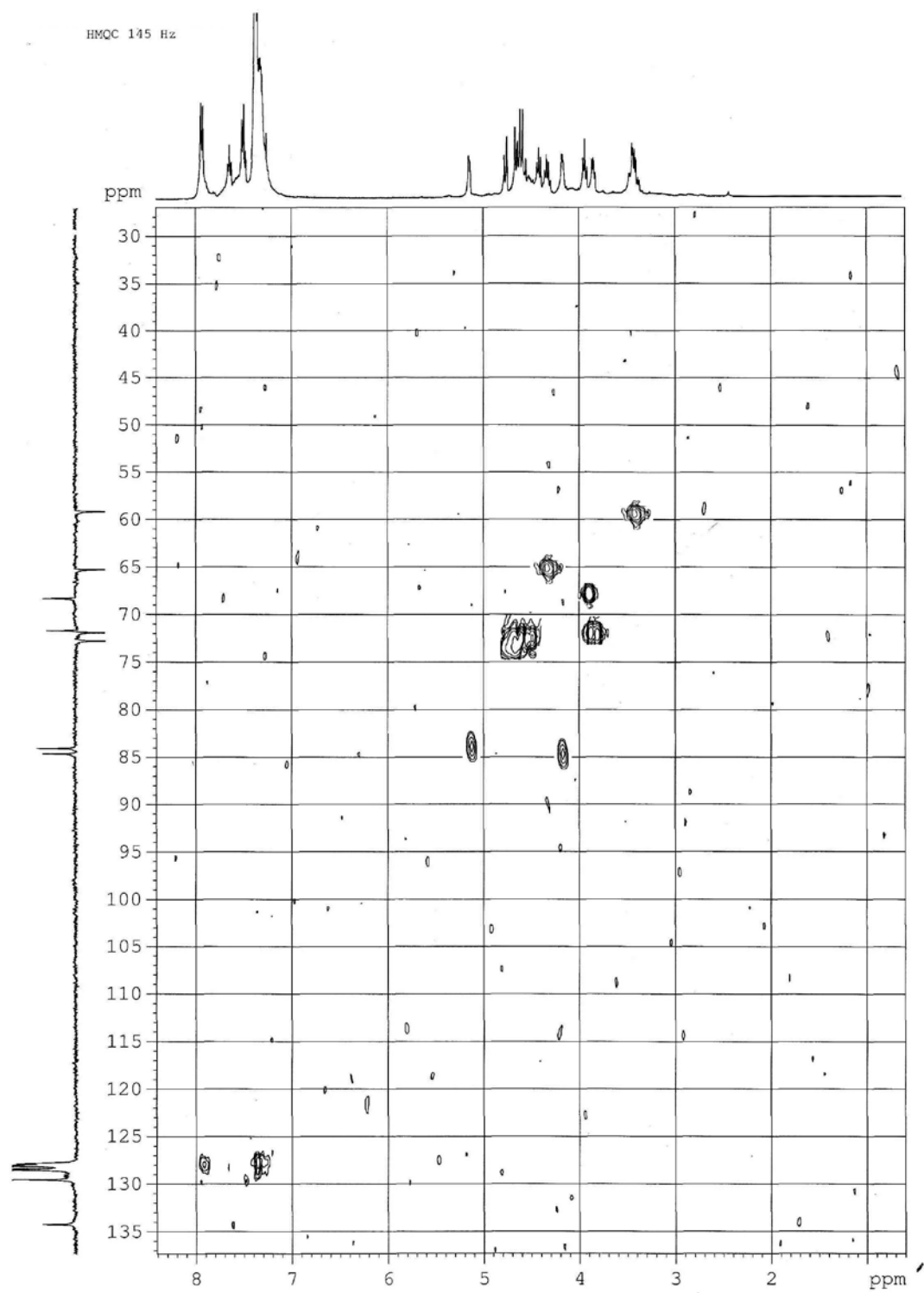
ROESY 650 ms

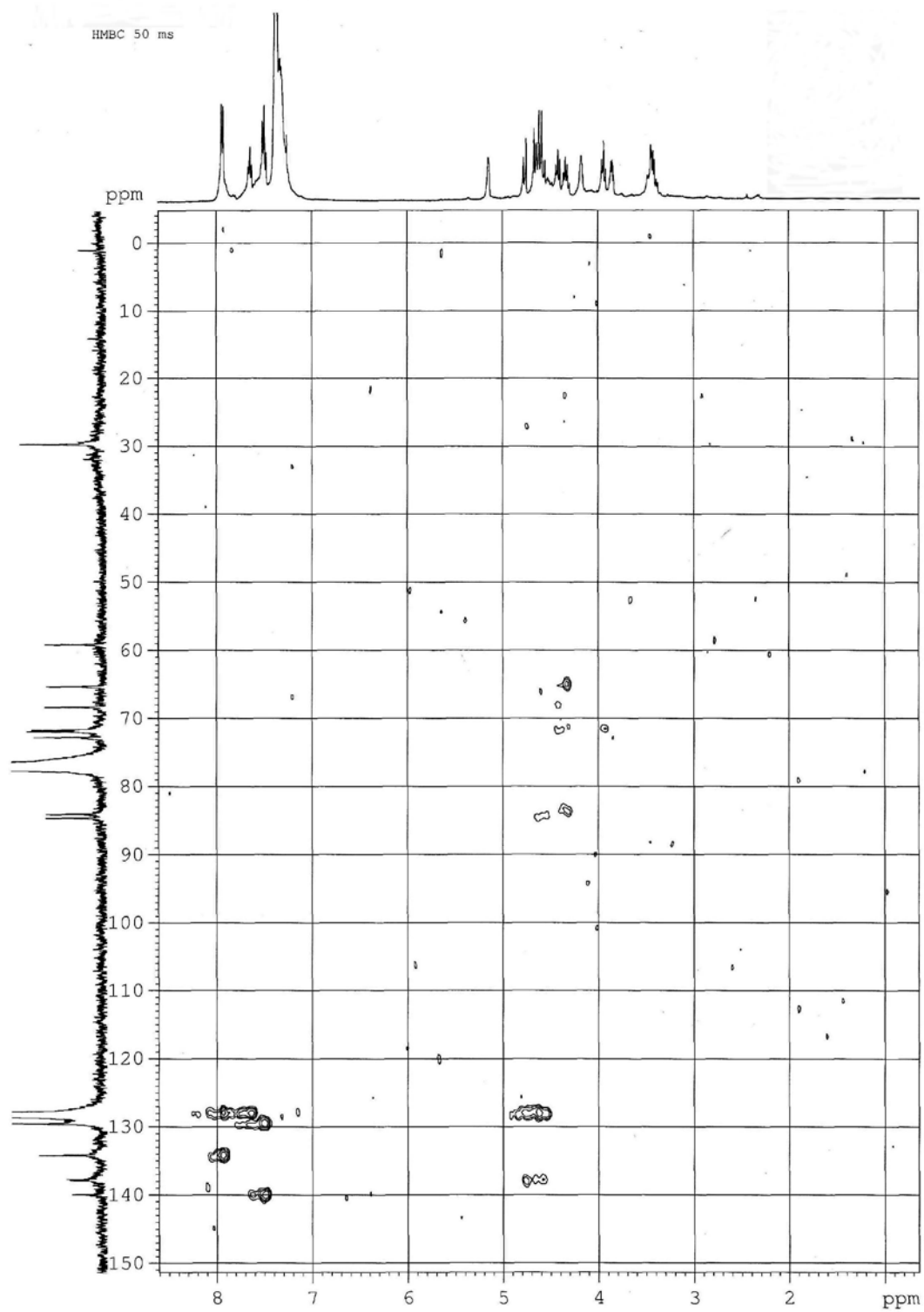


IR y HRMS del compuesto **37**:



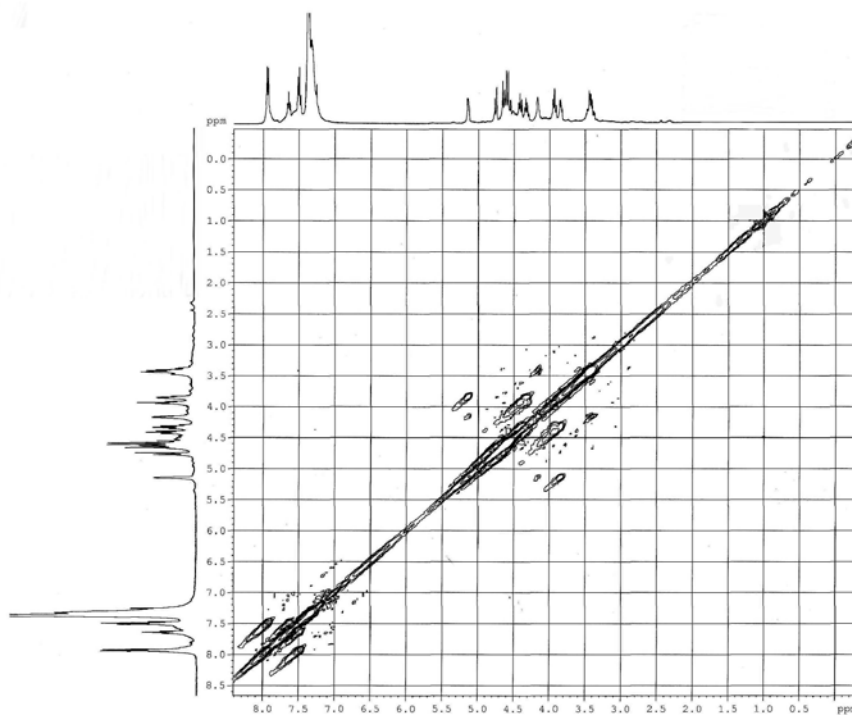
^1H y ^{13}C del compuesto **38**:

HMQC del compuesto **38**:

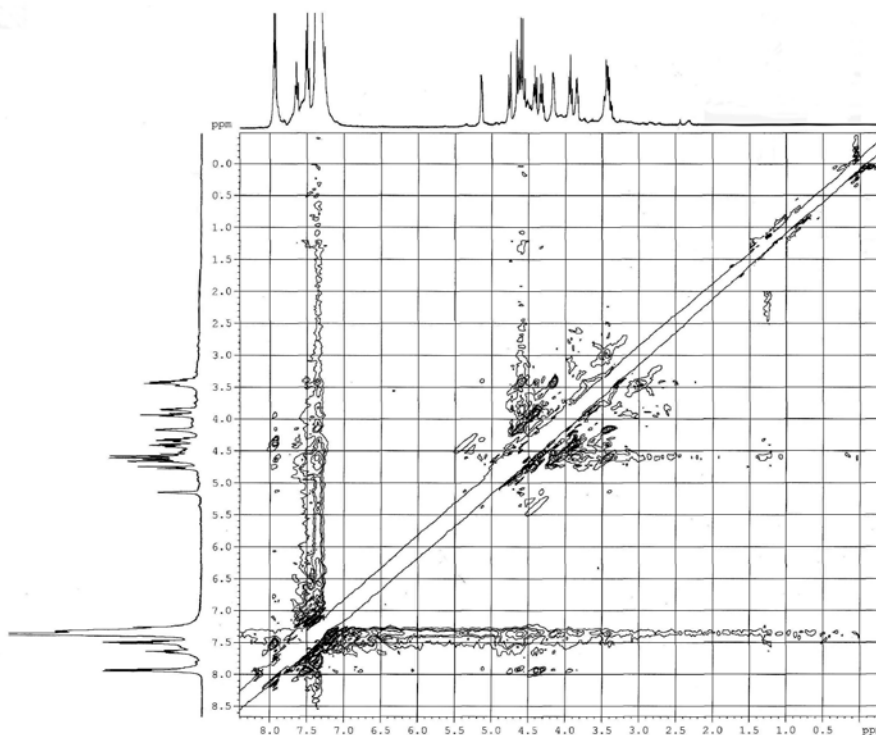
HMBC del compuesto **38**:

Cosy y Roesy del compuesto **38**:

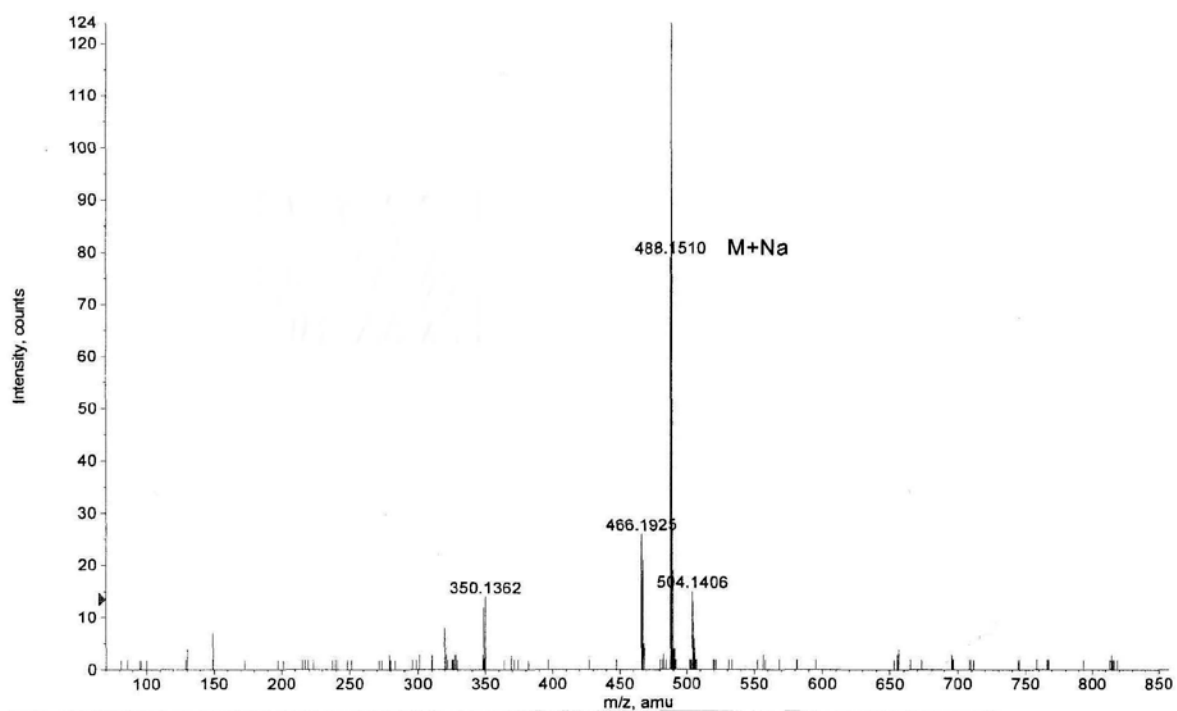
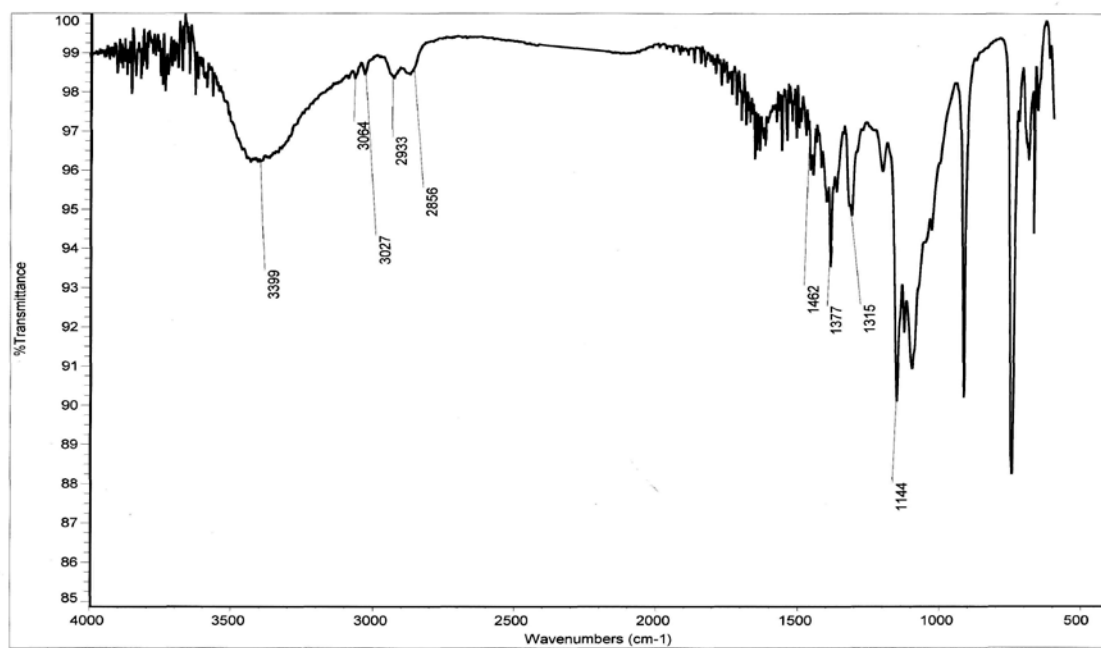
COSY

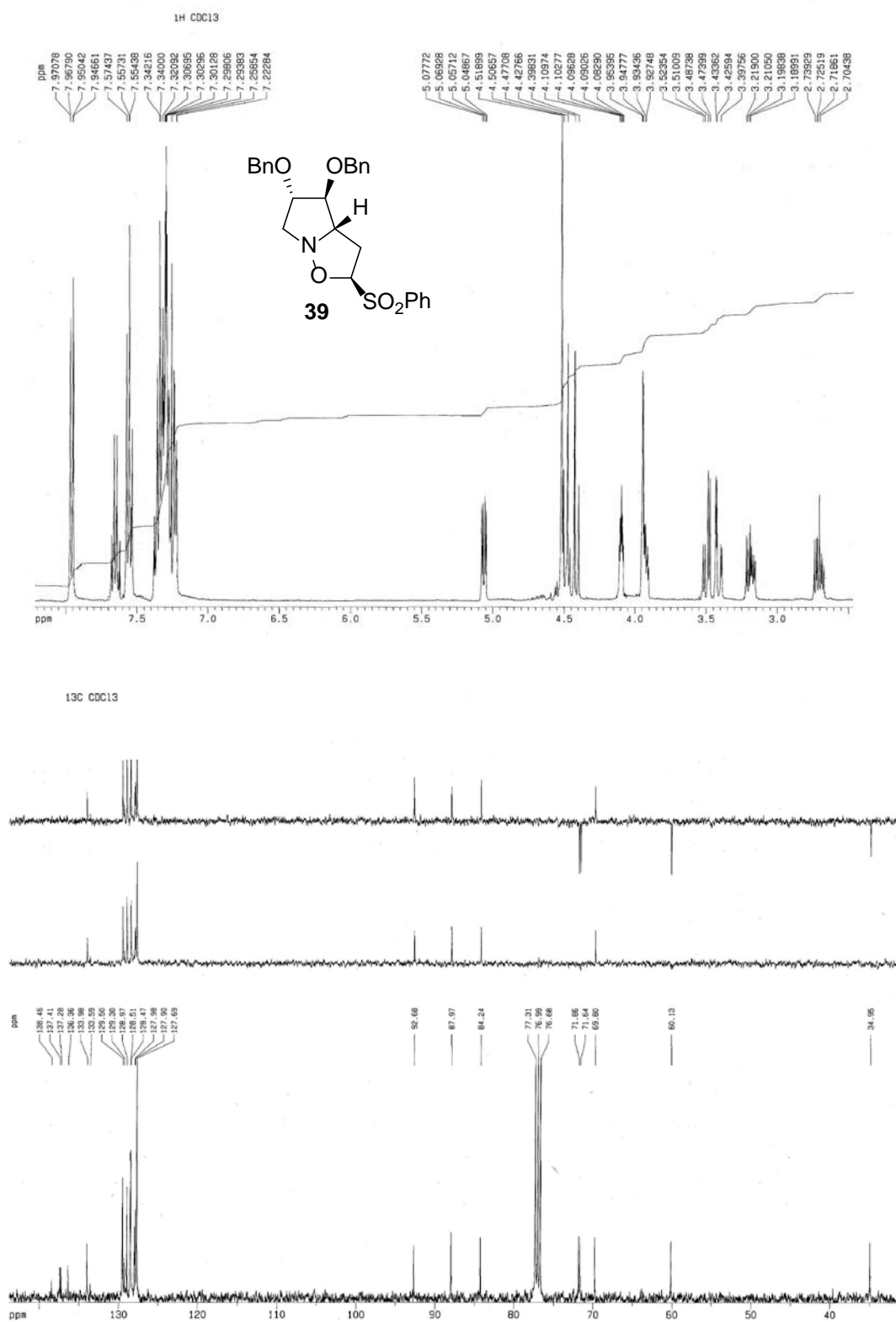


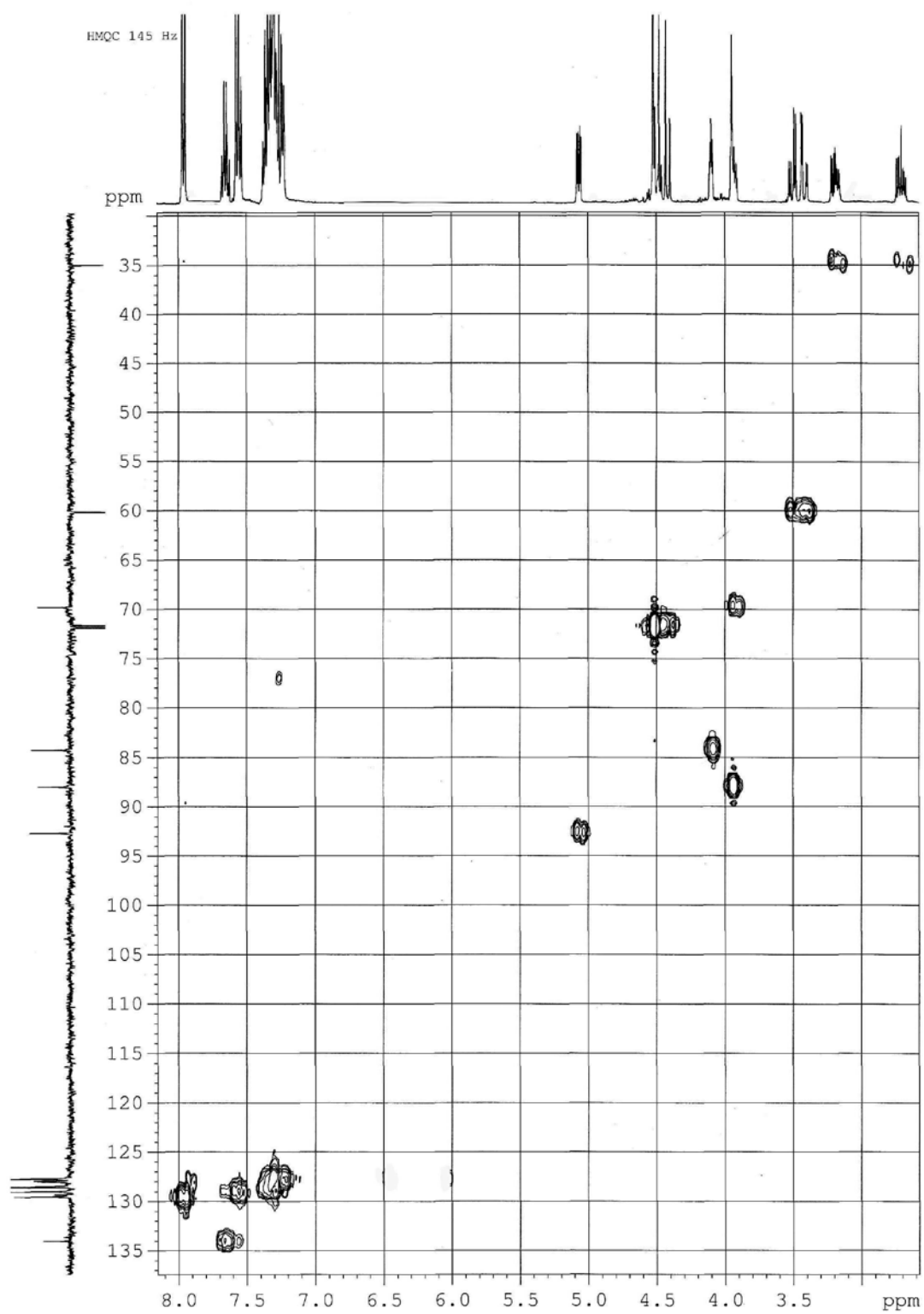
ROESY 650 ms

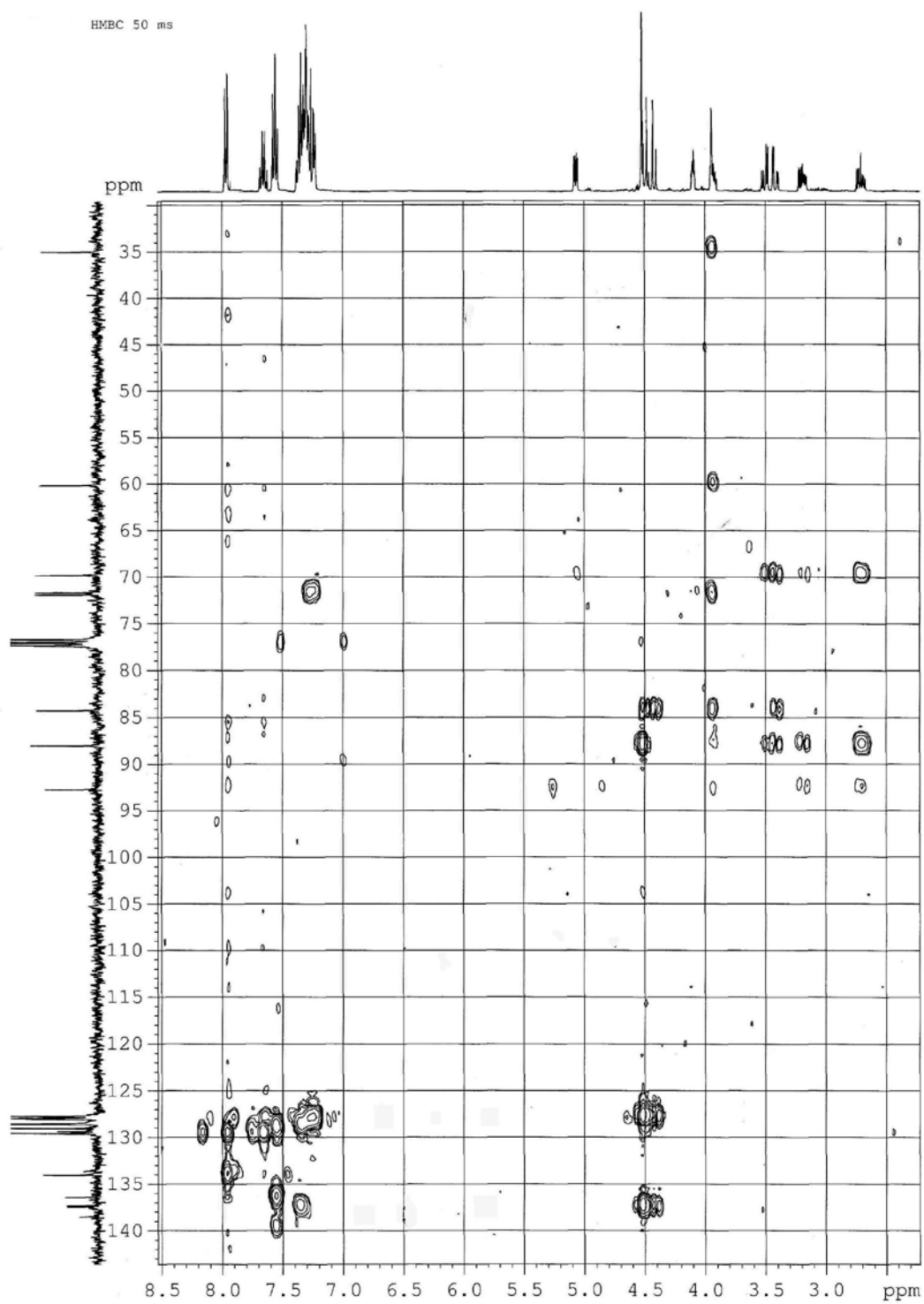


IR y HRMS del compuesto **38**:



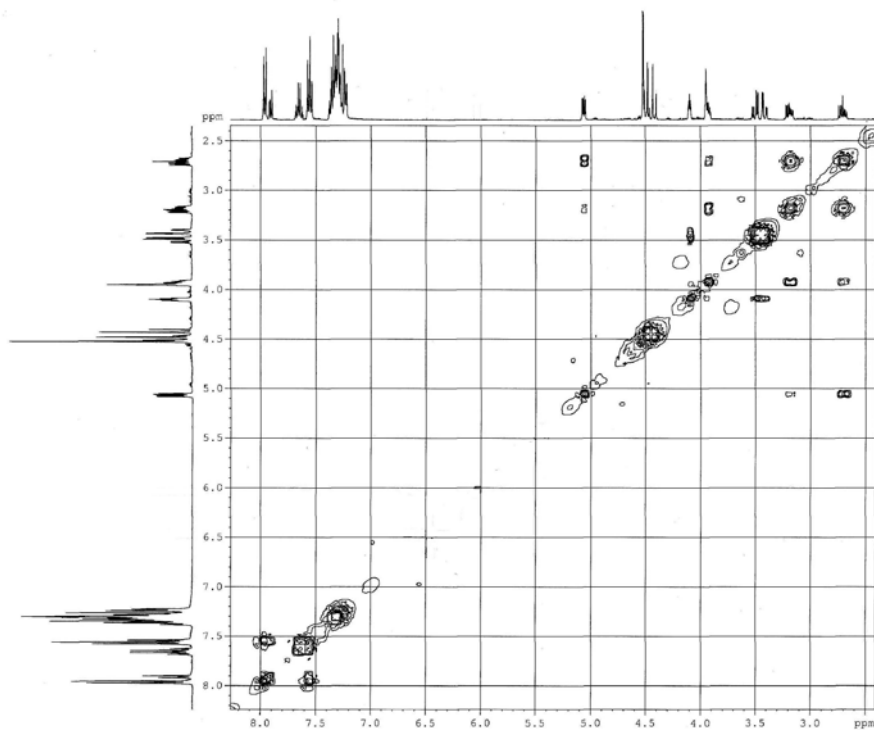
^1H y ^{13}C del compuesto **39**:

HMQC del compuesto **39**:

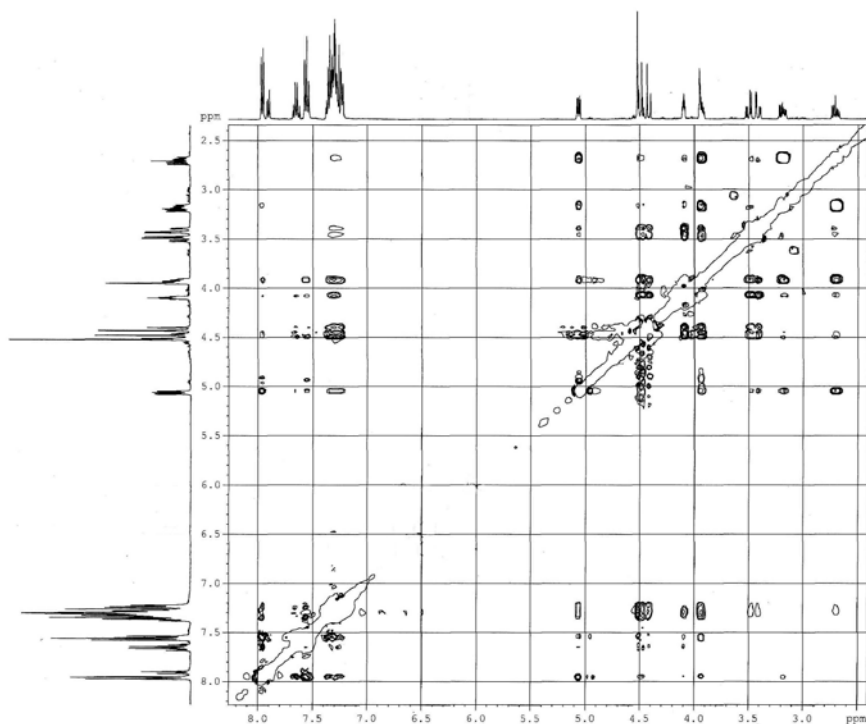
HMBC del compuesto **39**:

Cosy del compuesto **39**:

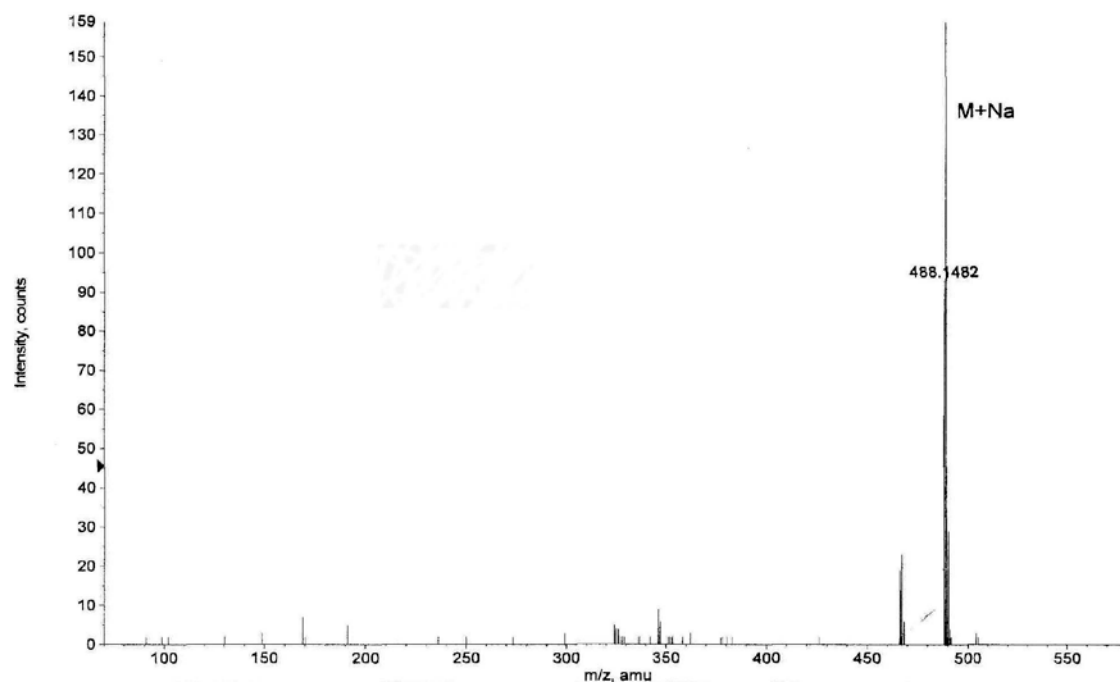
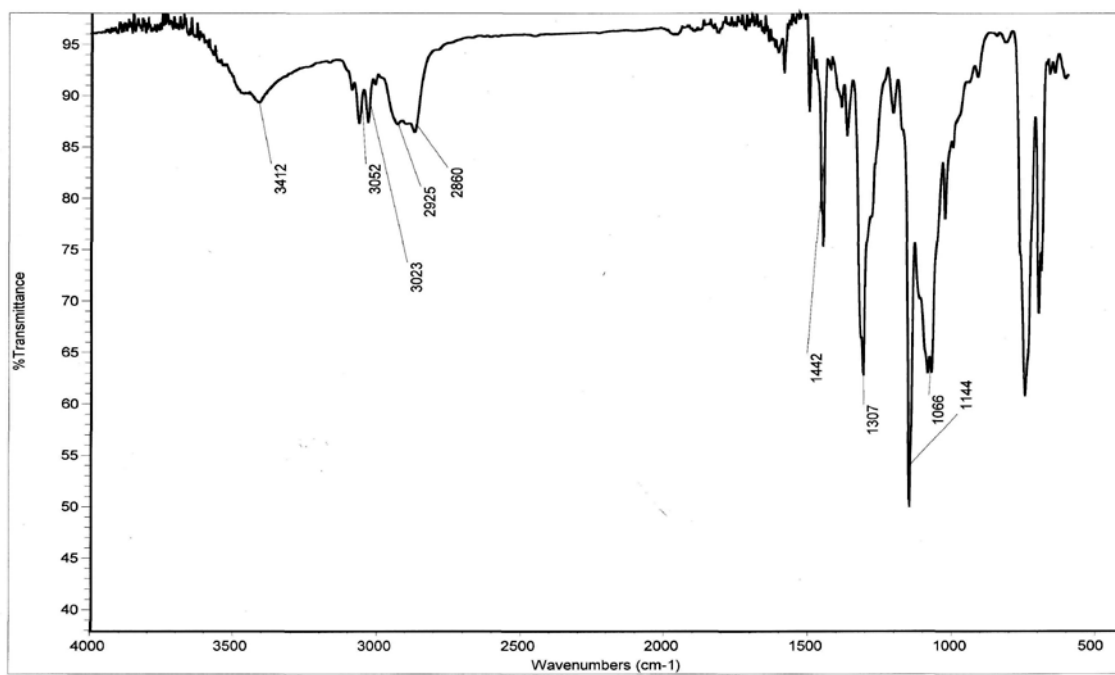
COSY

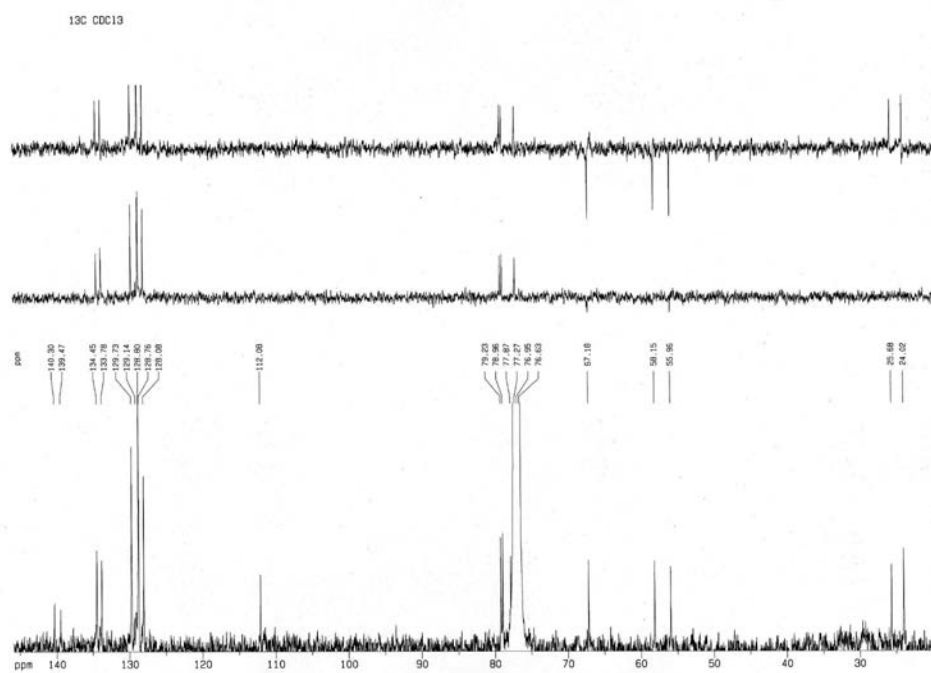
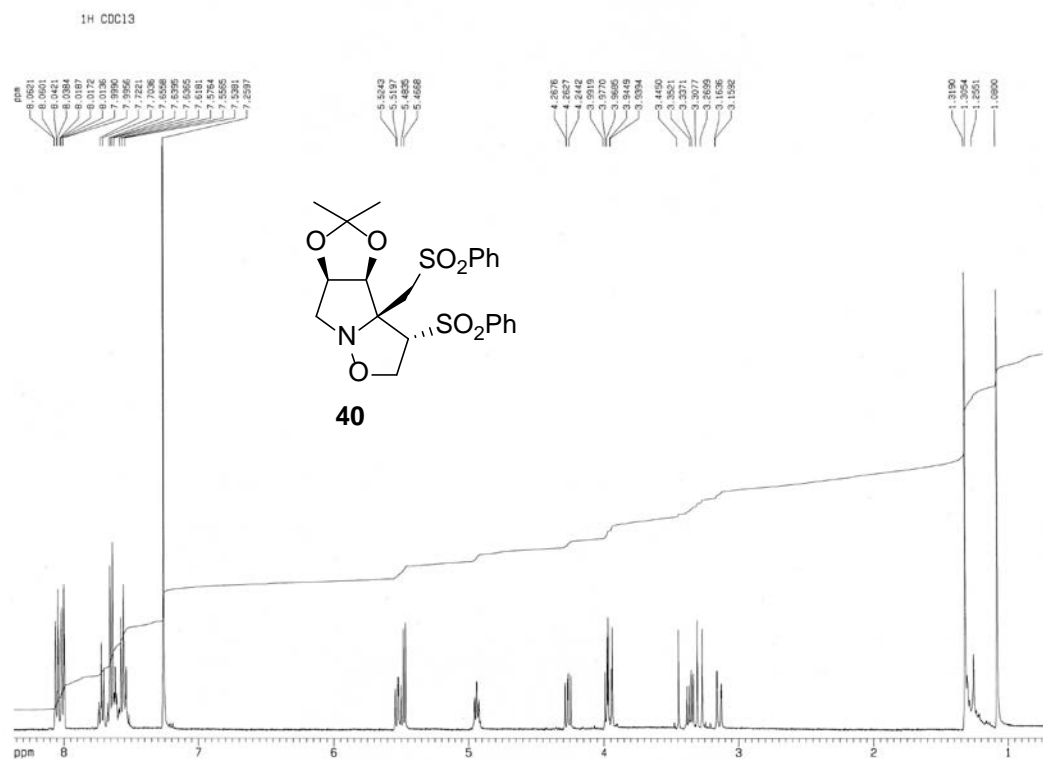


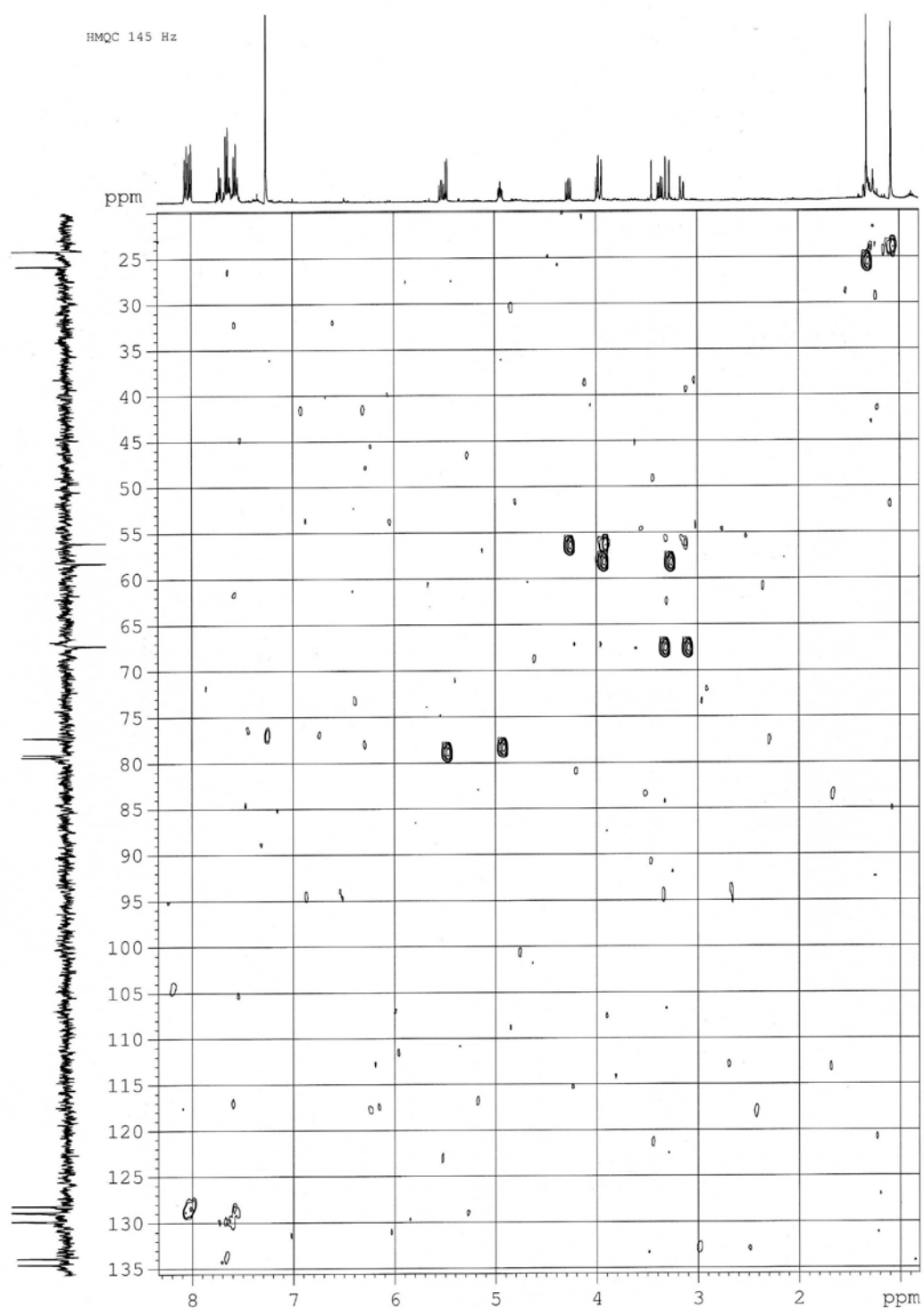
ROESY 650 ms

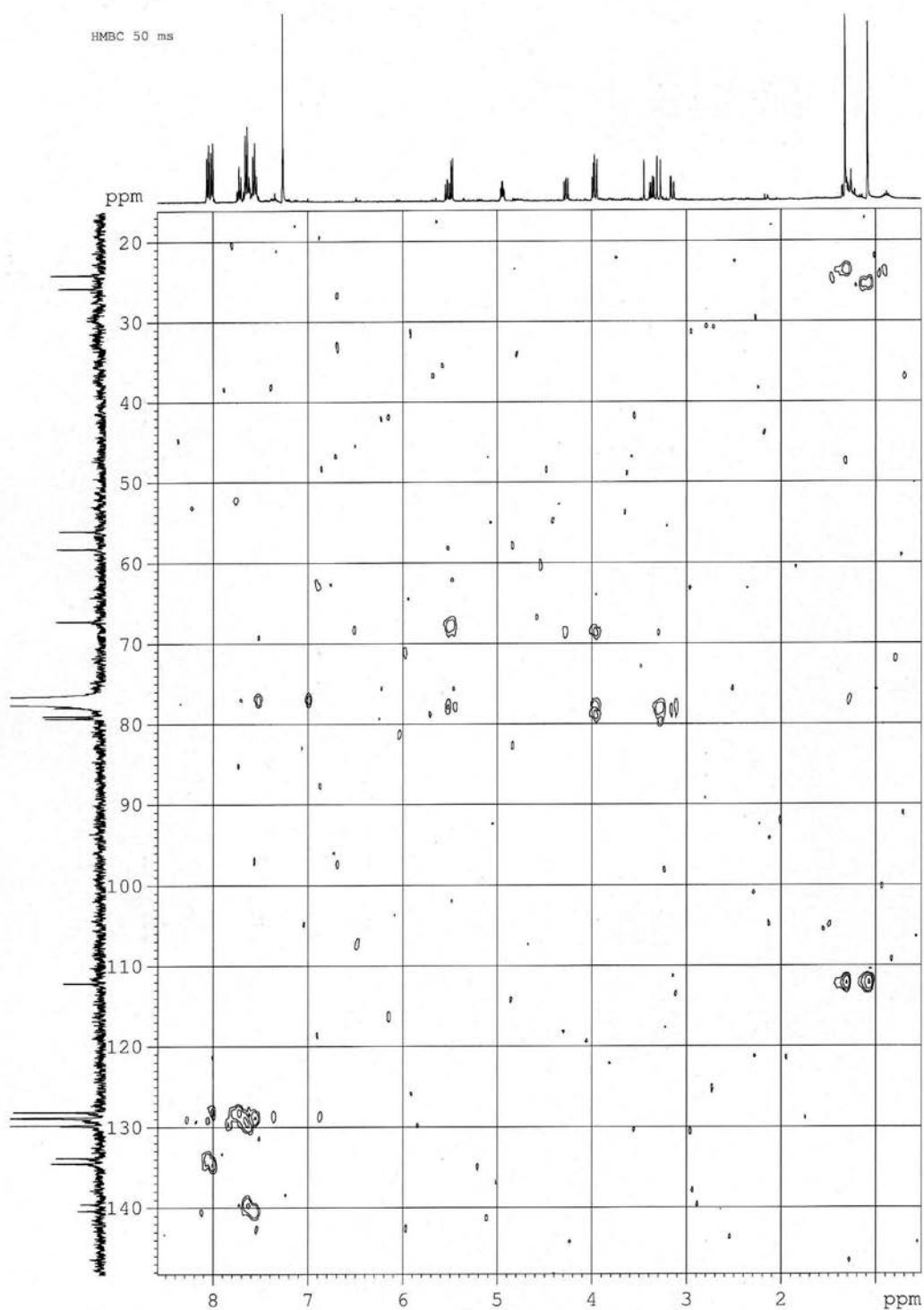


IR y HRMS del compuesto **39**:

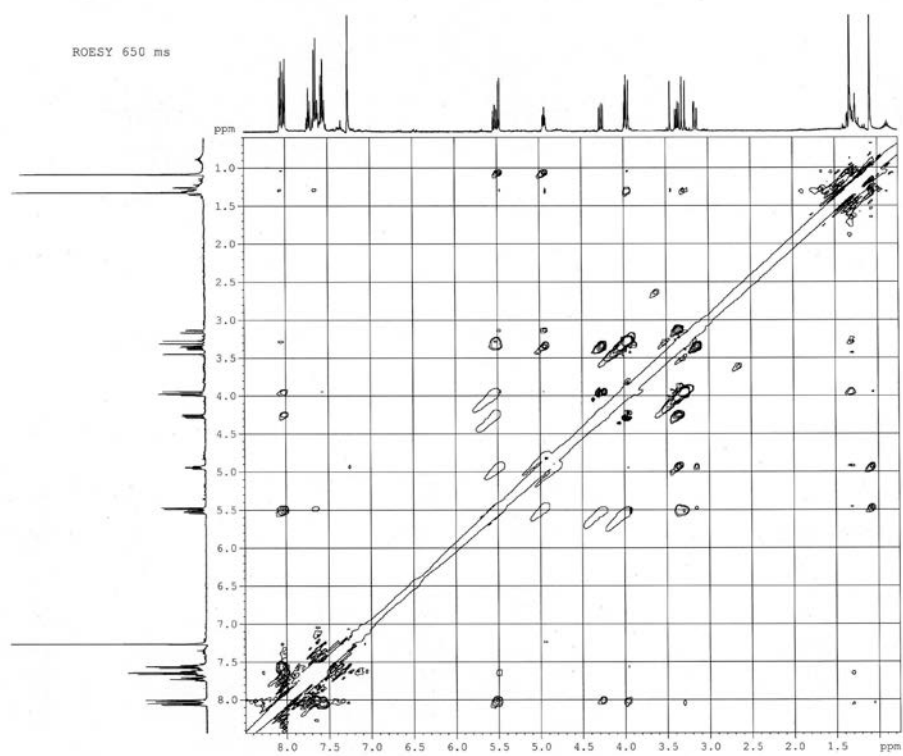
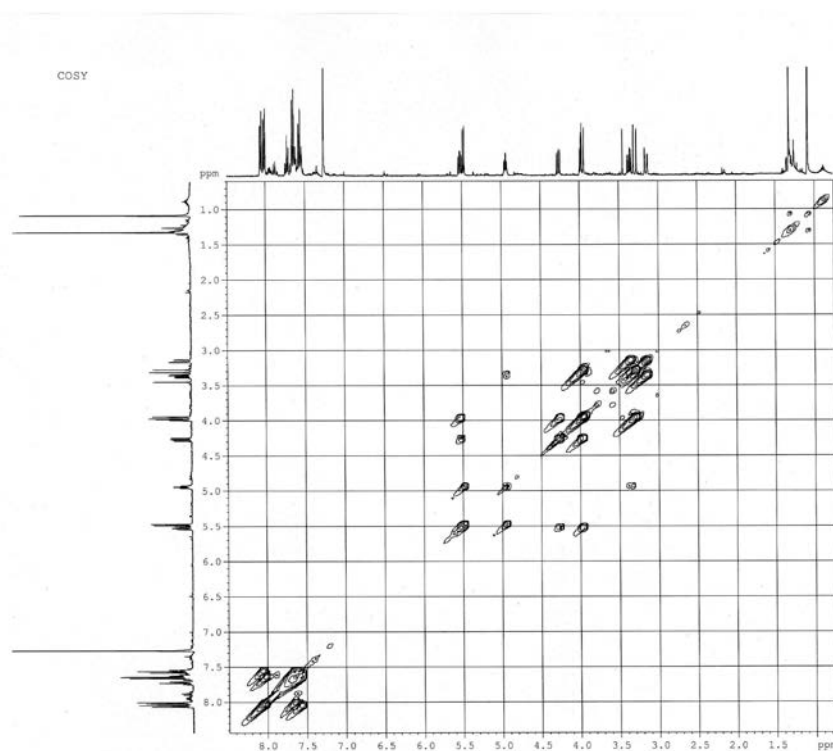


^1H y ^{13}C del compuesto **40**:

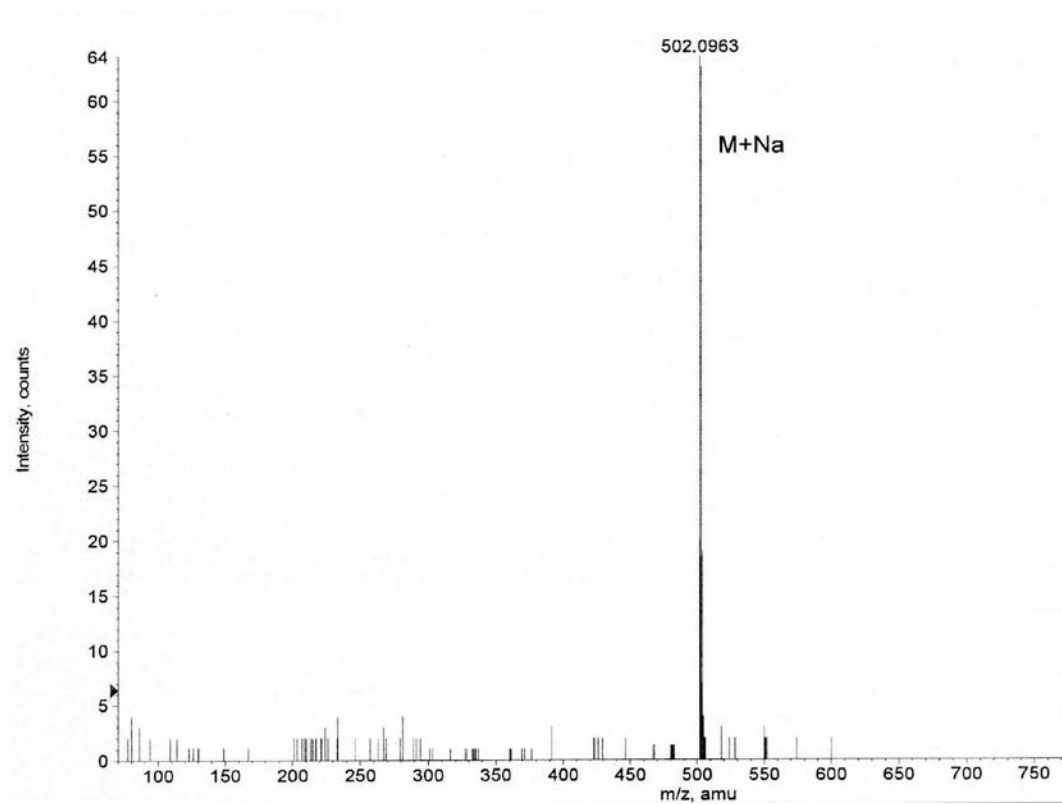
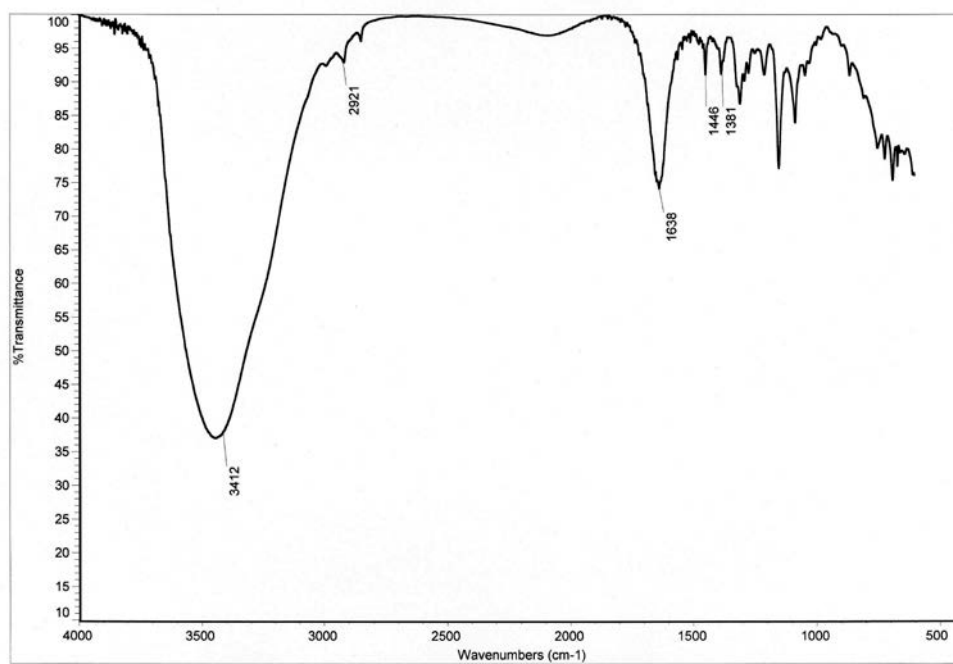
HMQC del compuesto **40**:

HMBC del compuesto **40**:

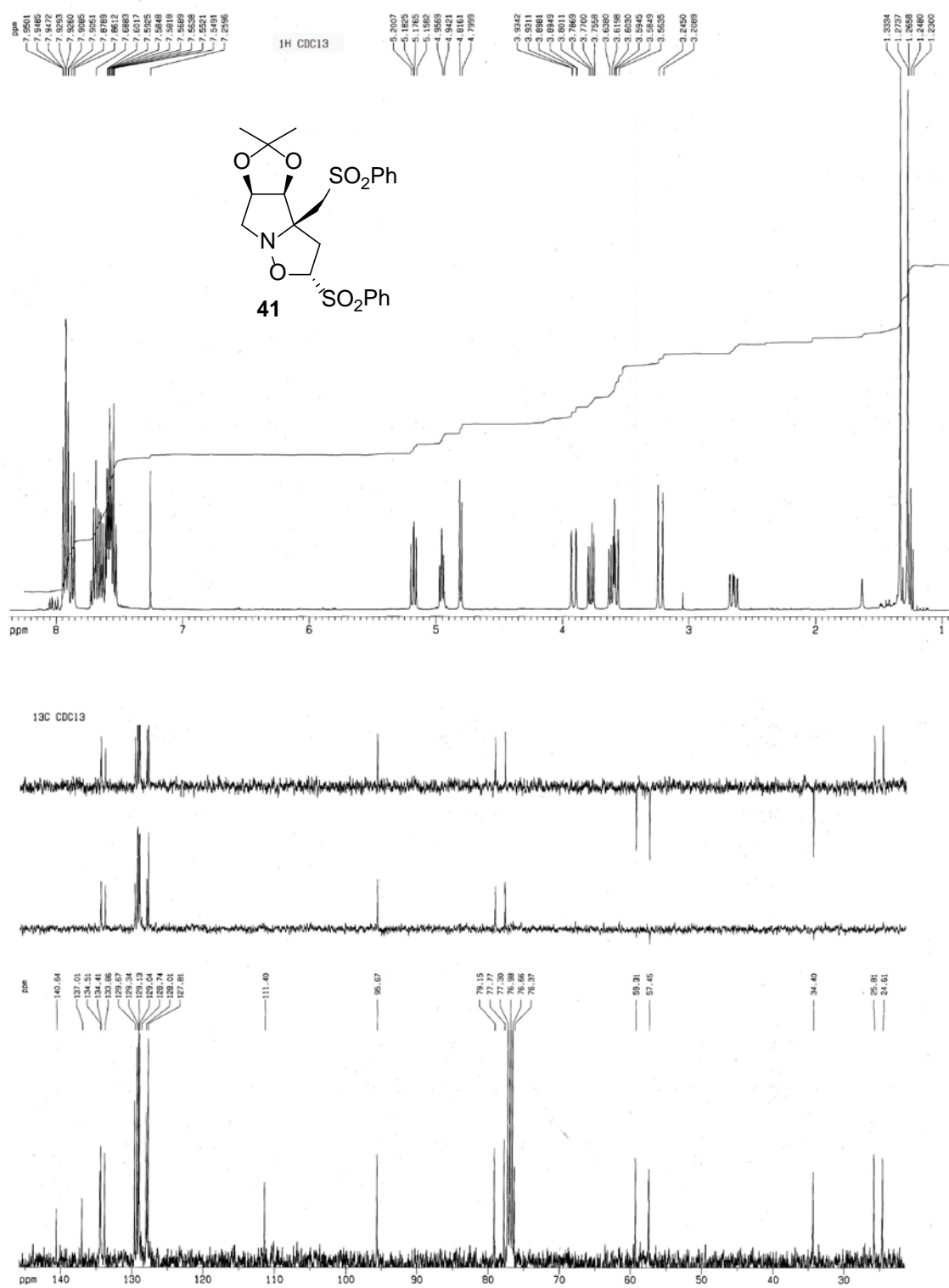
Cosy y Roesy del compuesto 40:

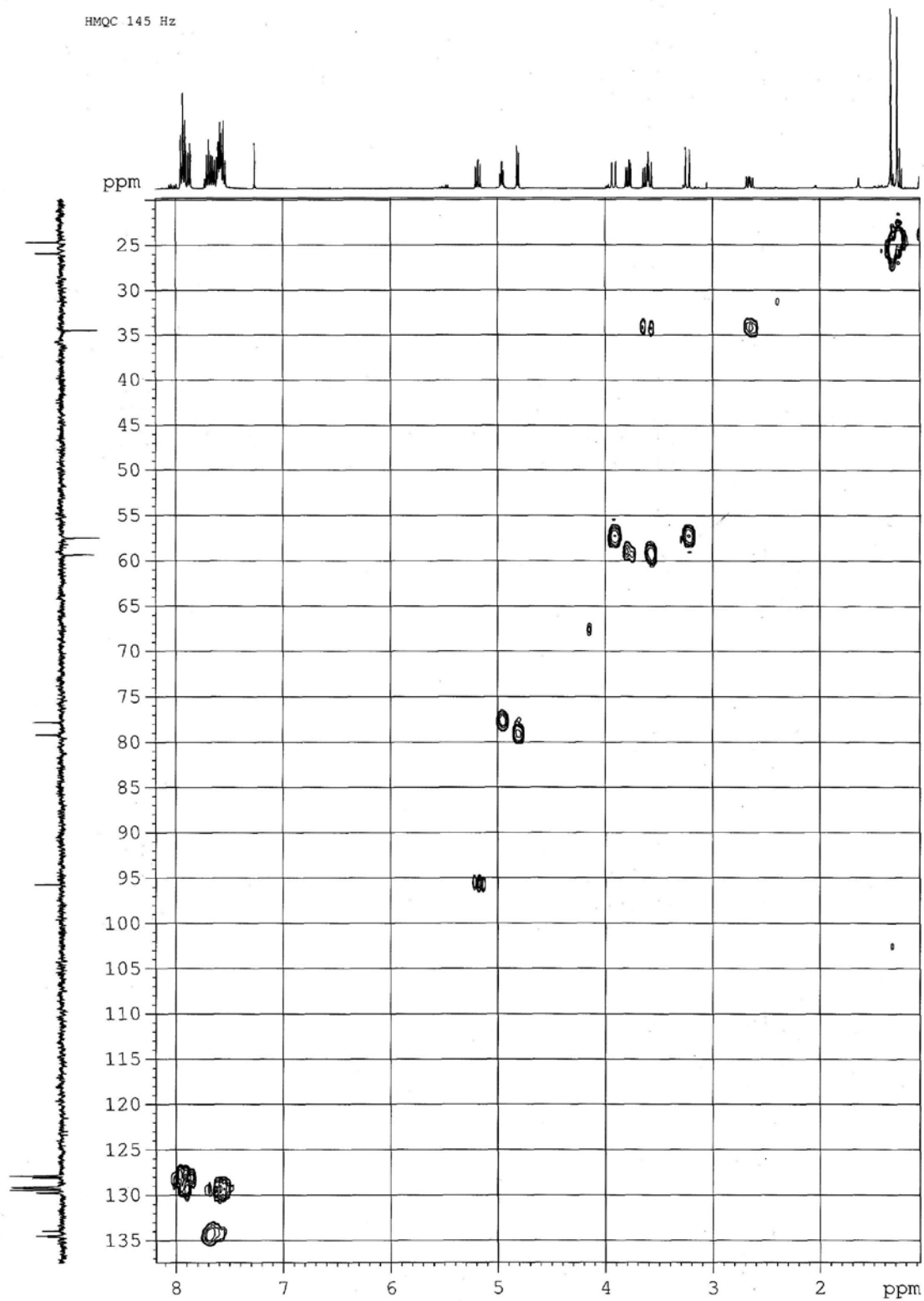


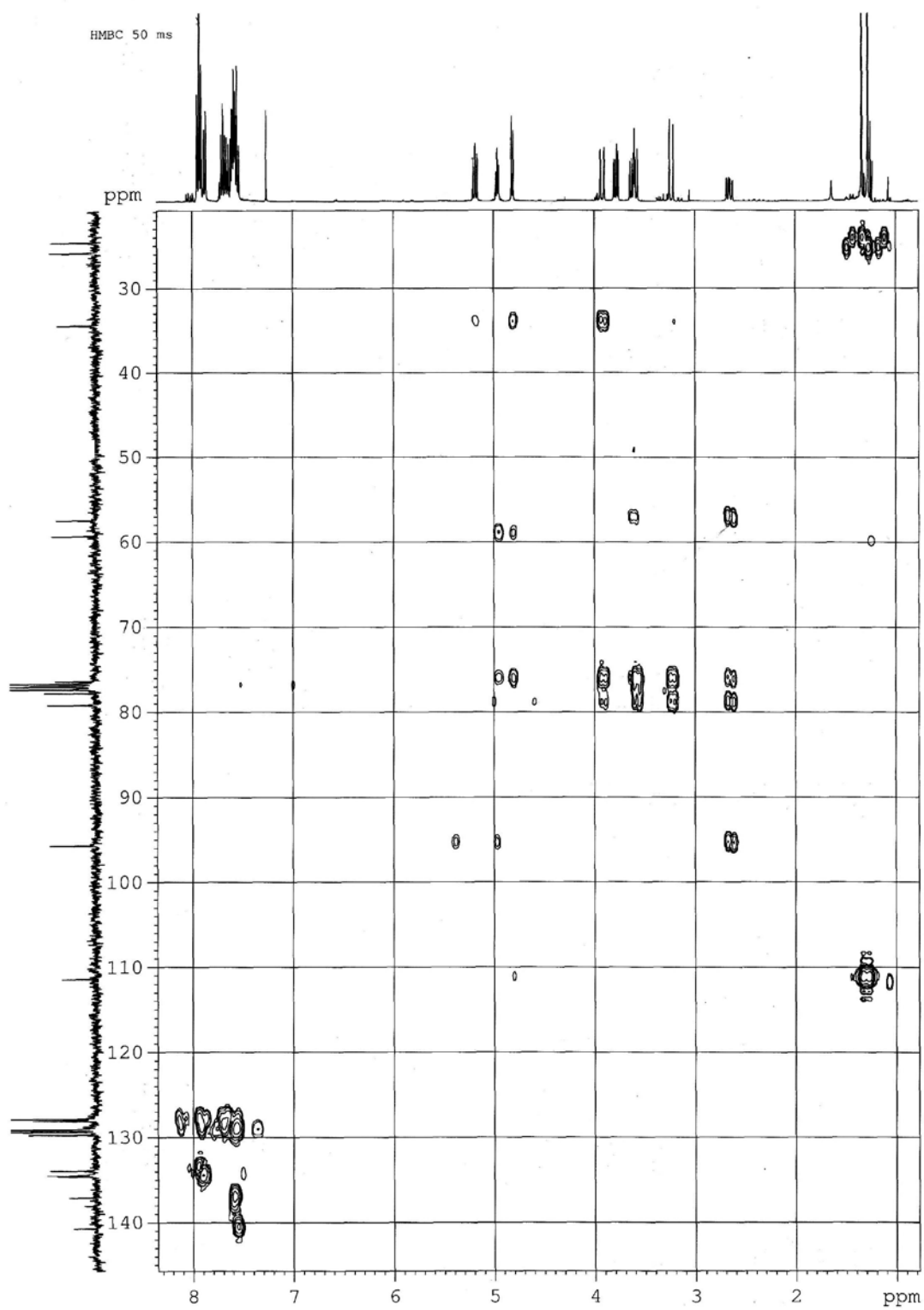
IR y HRMS del compuesto **40**:



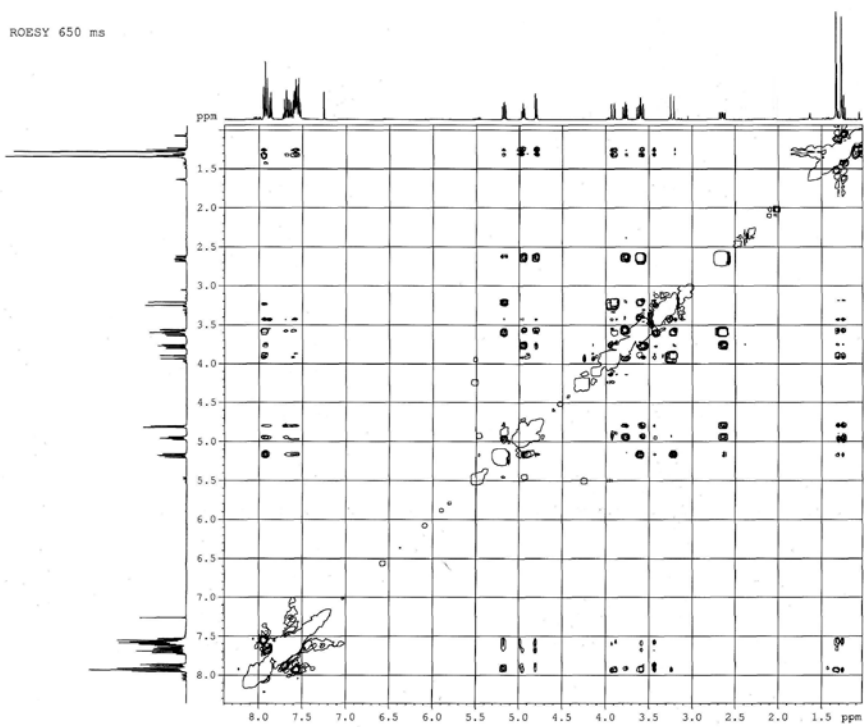
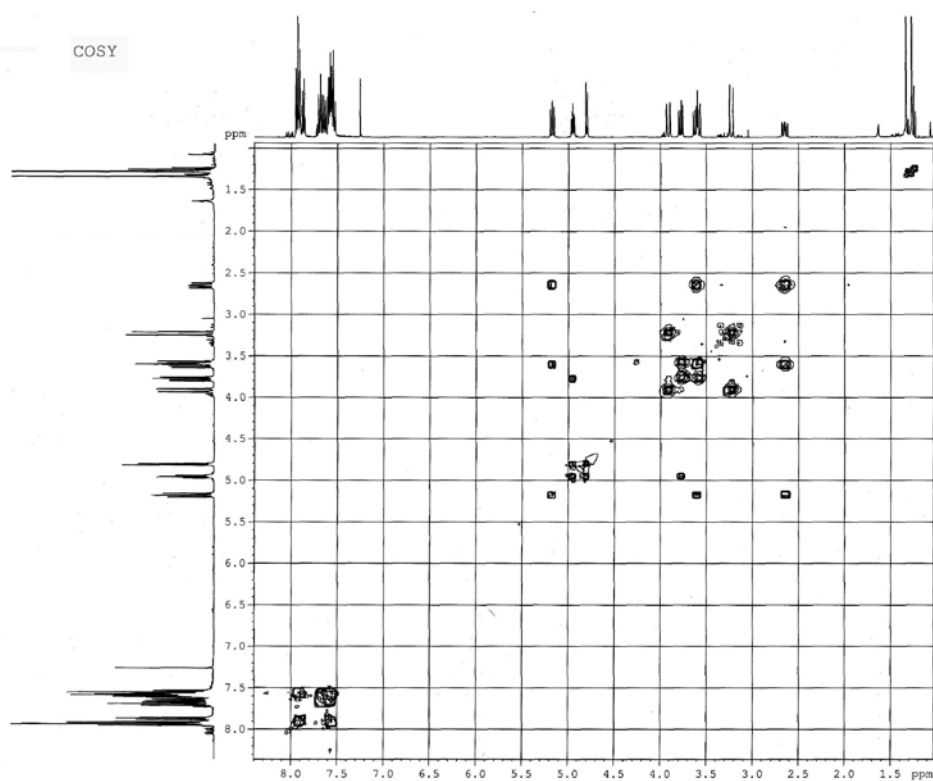
^1H y ^{13}C del compuesto **41**:



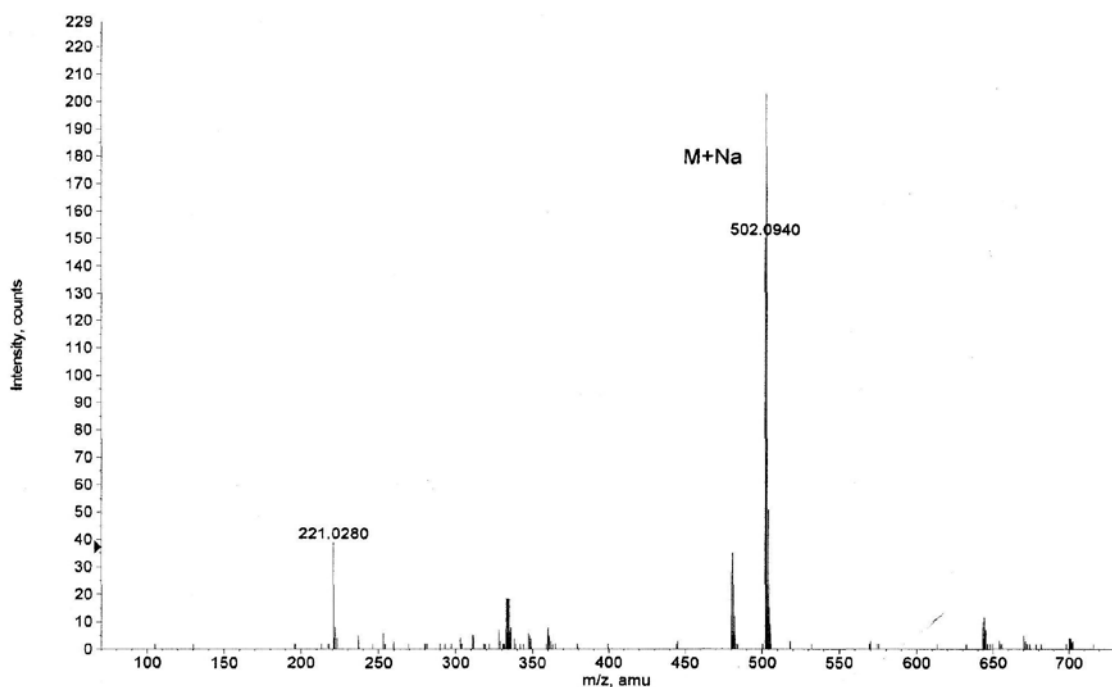
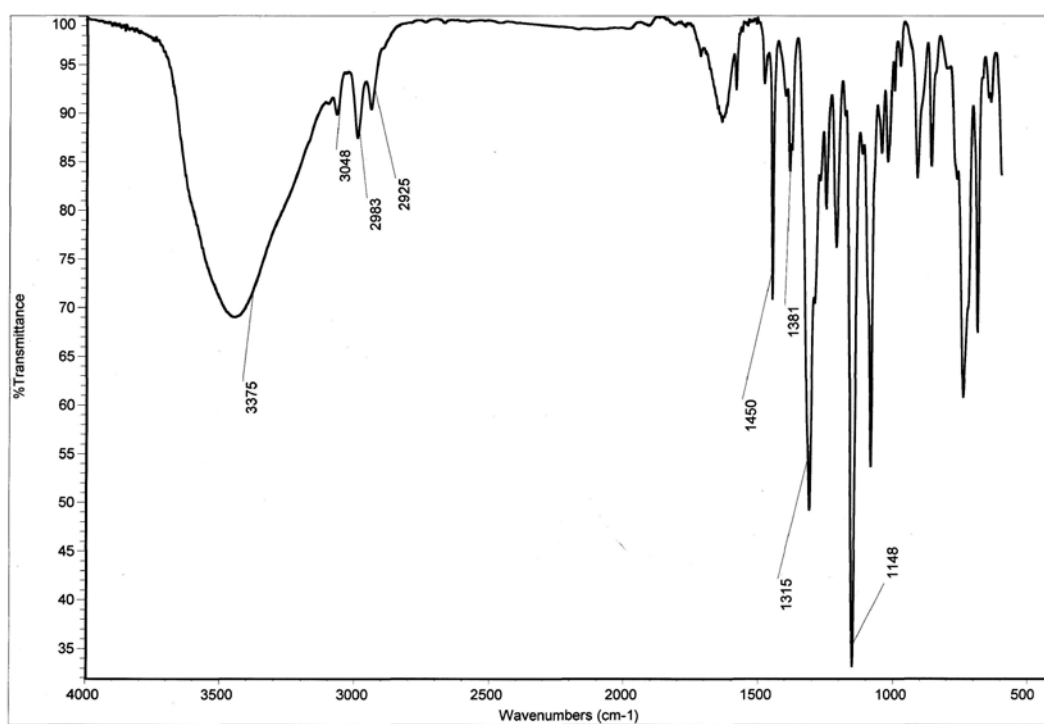
HMQC del compuesto **41**:

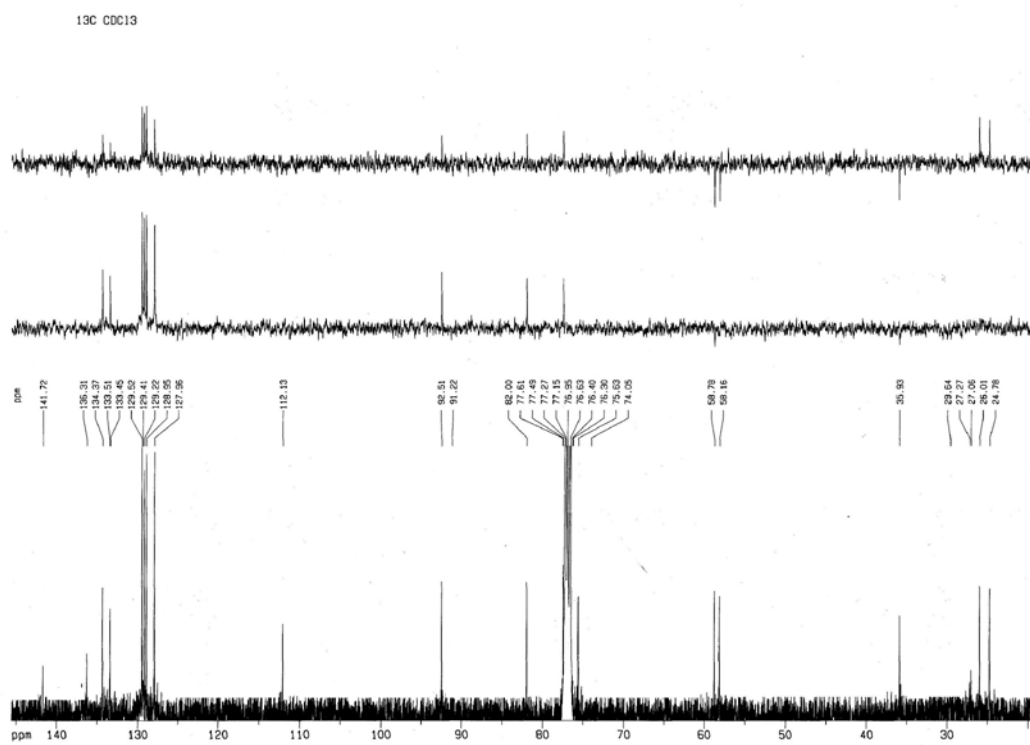
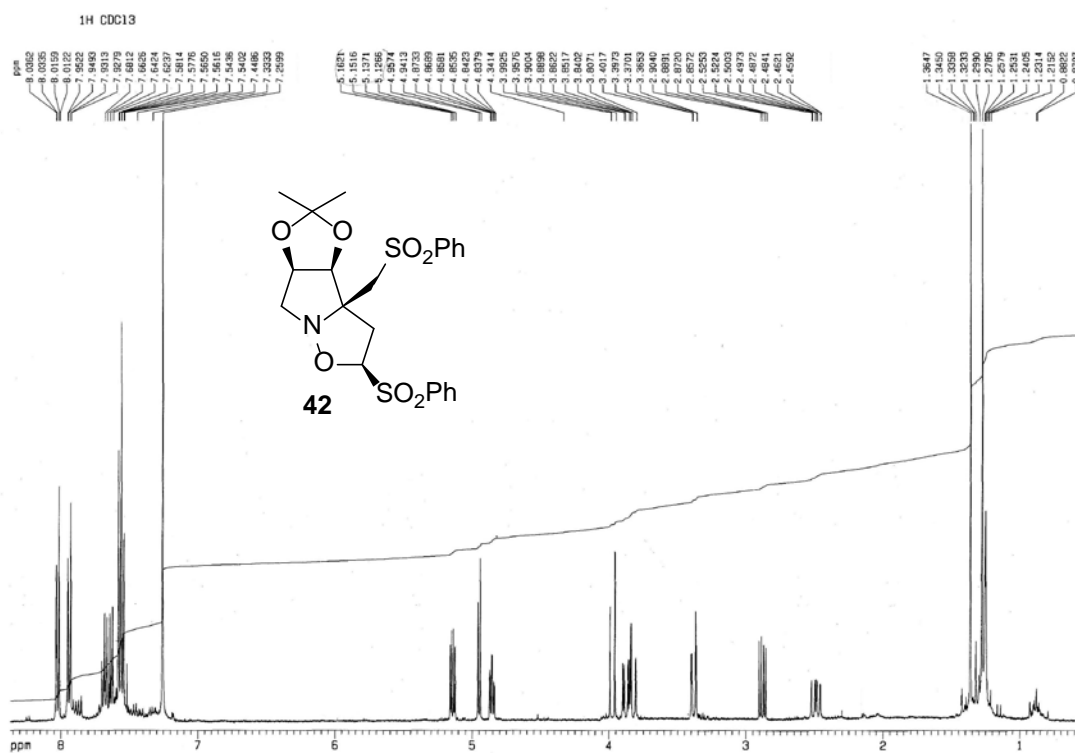
HMBC del compuesto **41**:

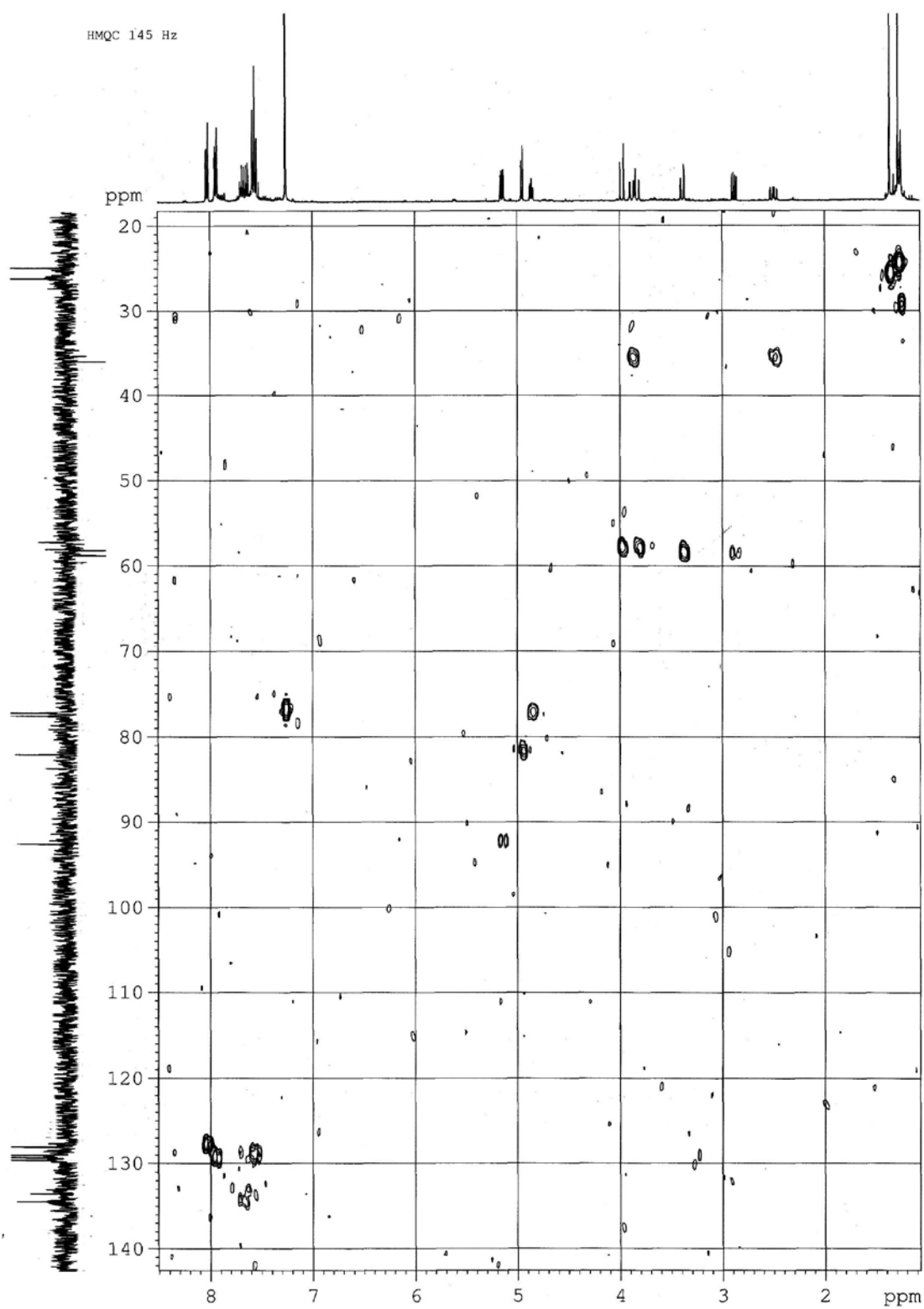
Cosy y Roesy del compuesto 41:



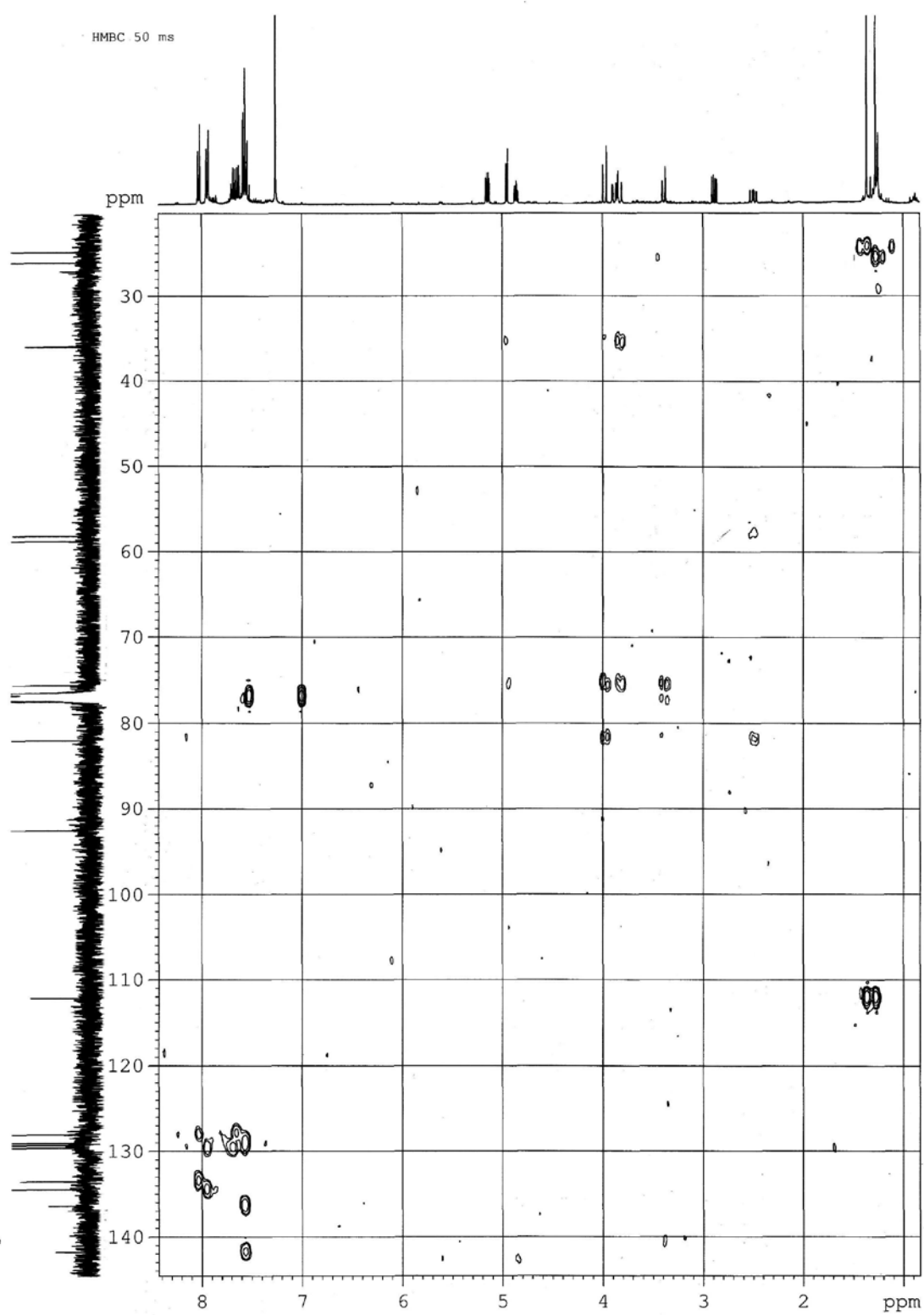
IR y HRMS del compuesto **41**:



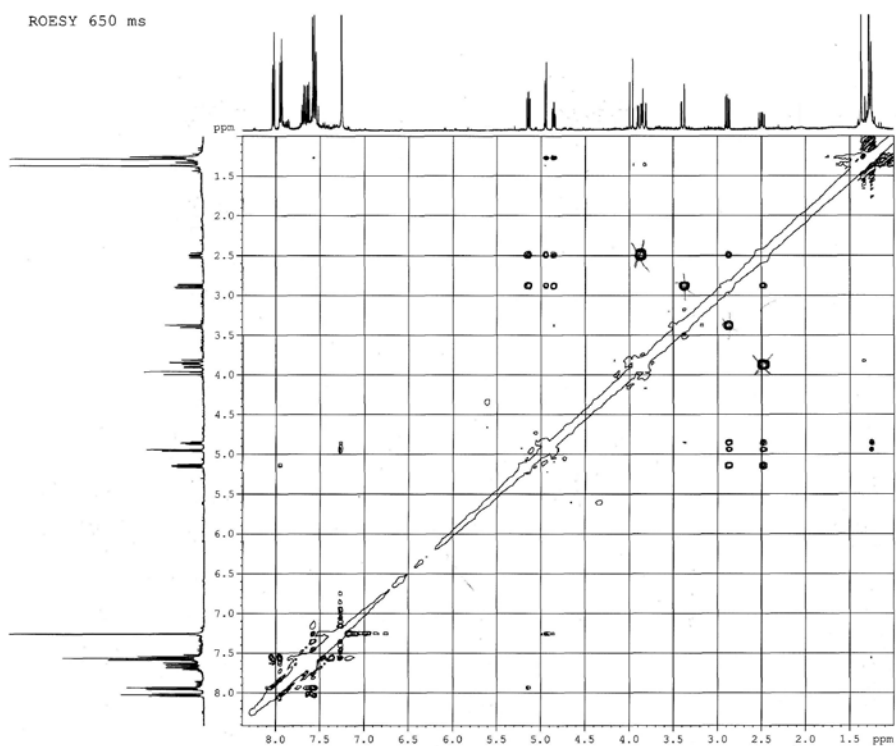
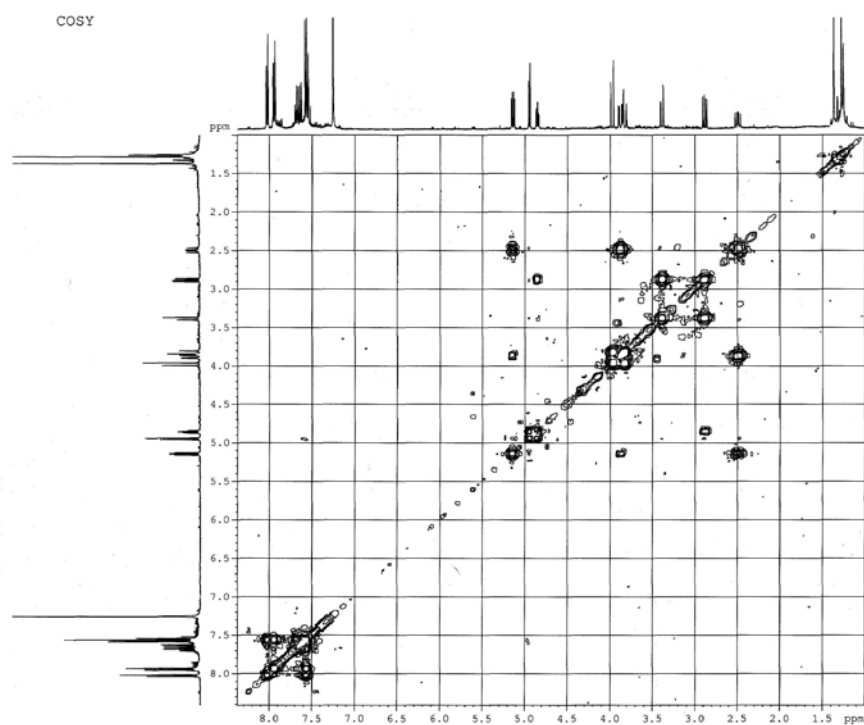
^1H y ^{13}C del compuesto **42**:

HMQC del compuesto **42**:

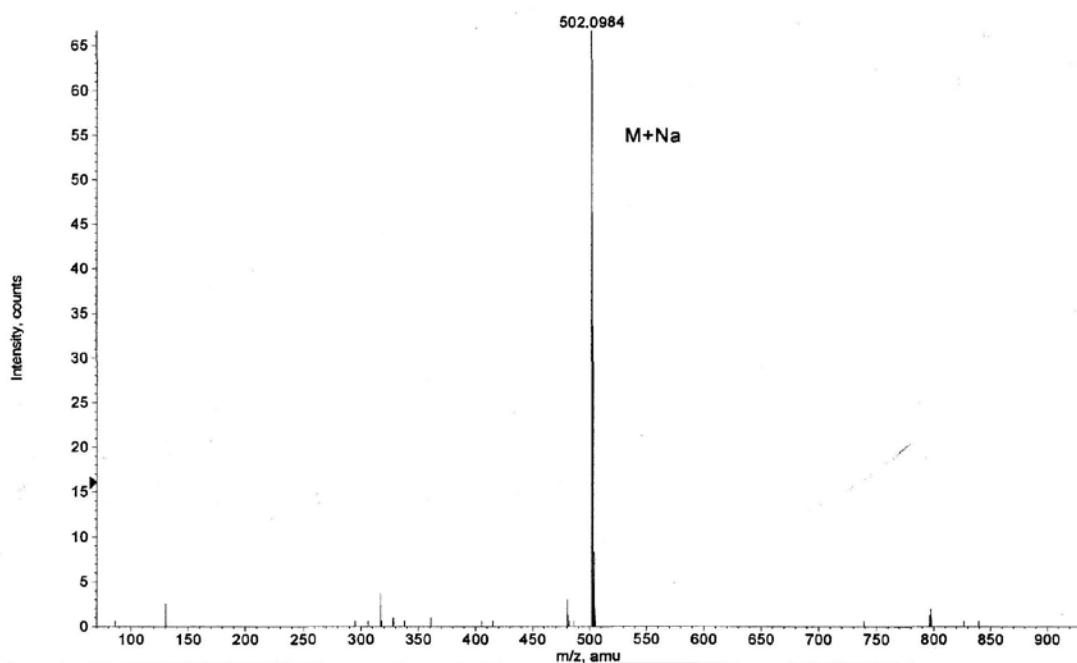
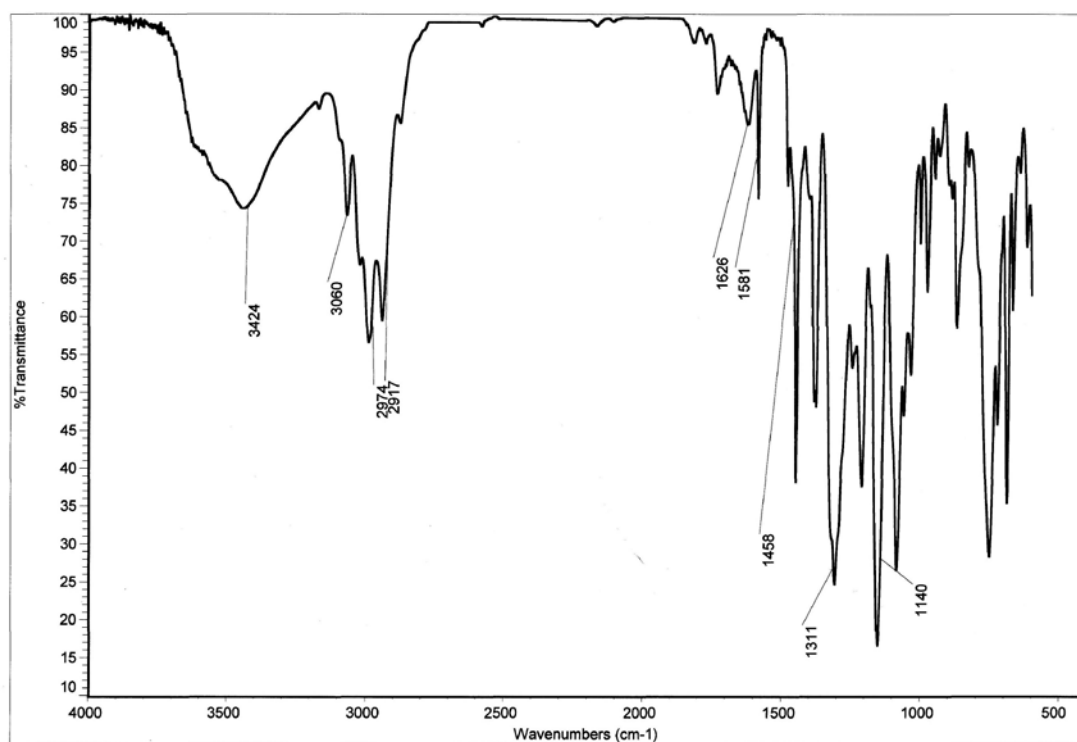
HMBC del compuesto 42:

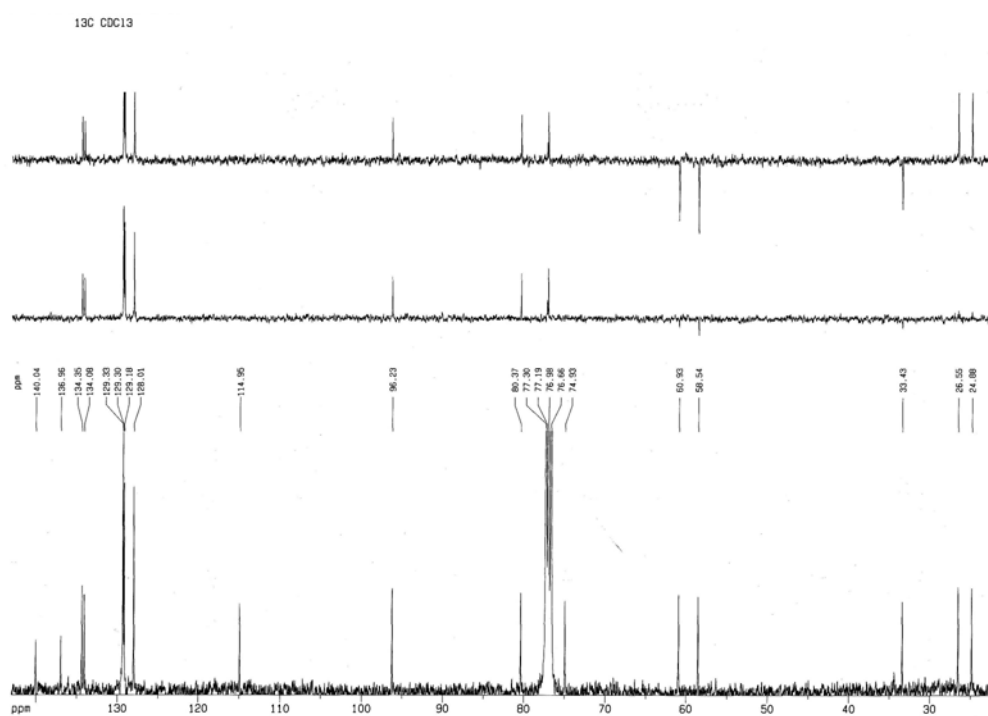
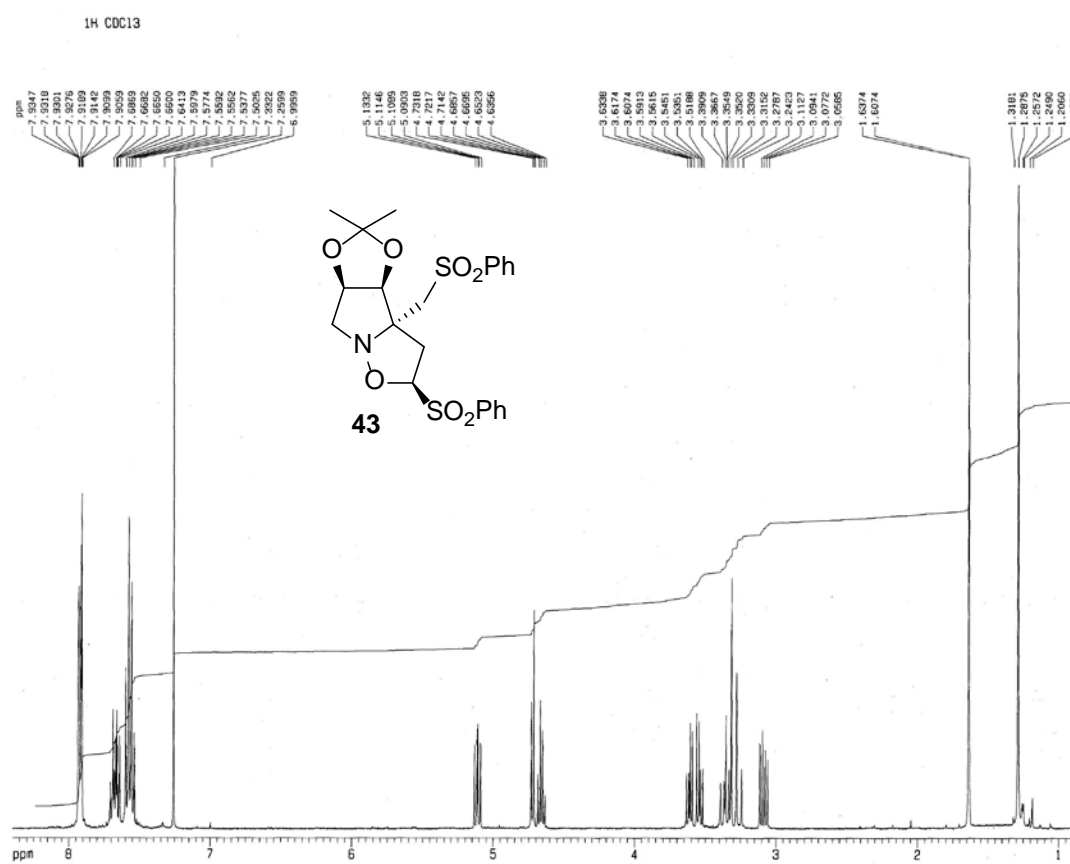


Cosy y Roesy del compuesto **42**:

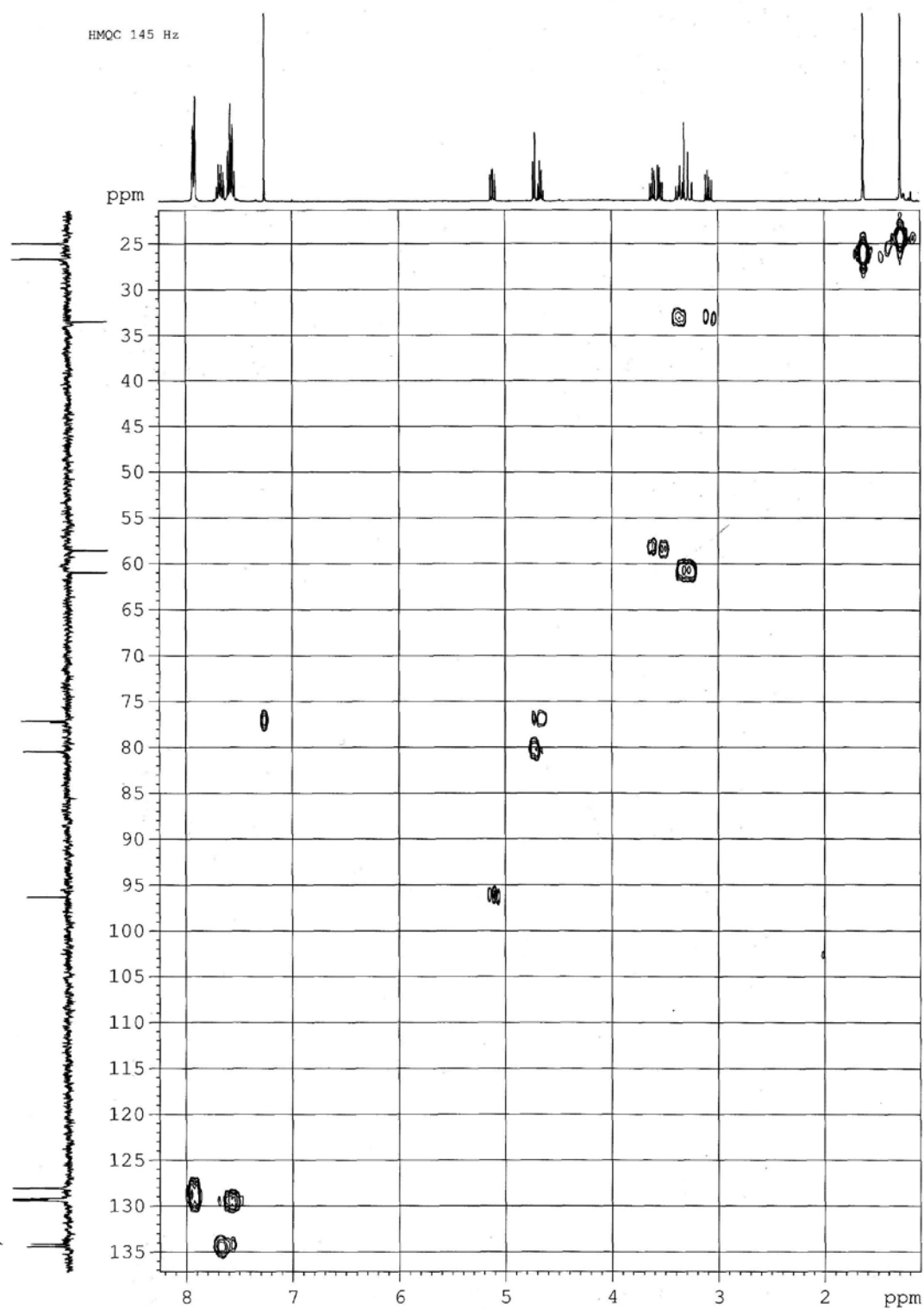


IR y HRMS del compuesto **42**:

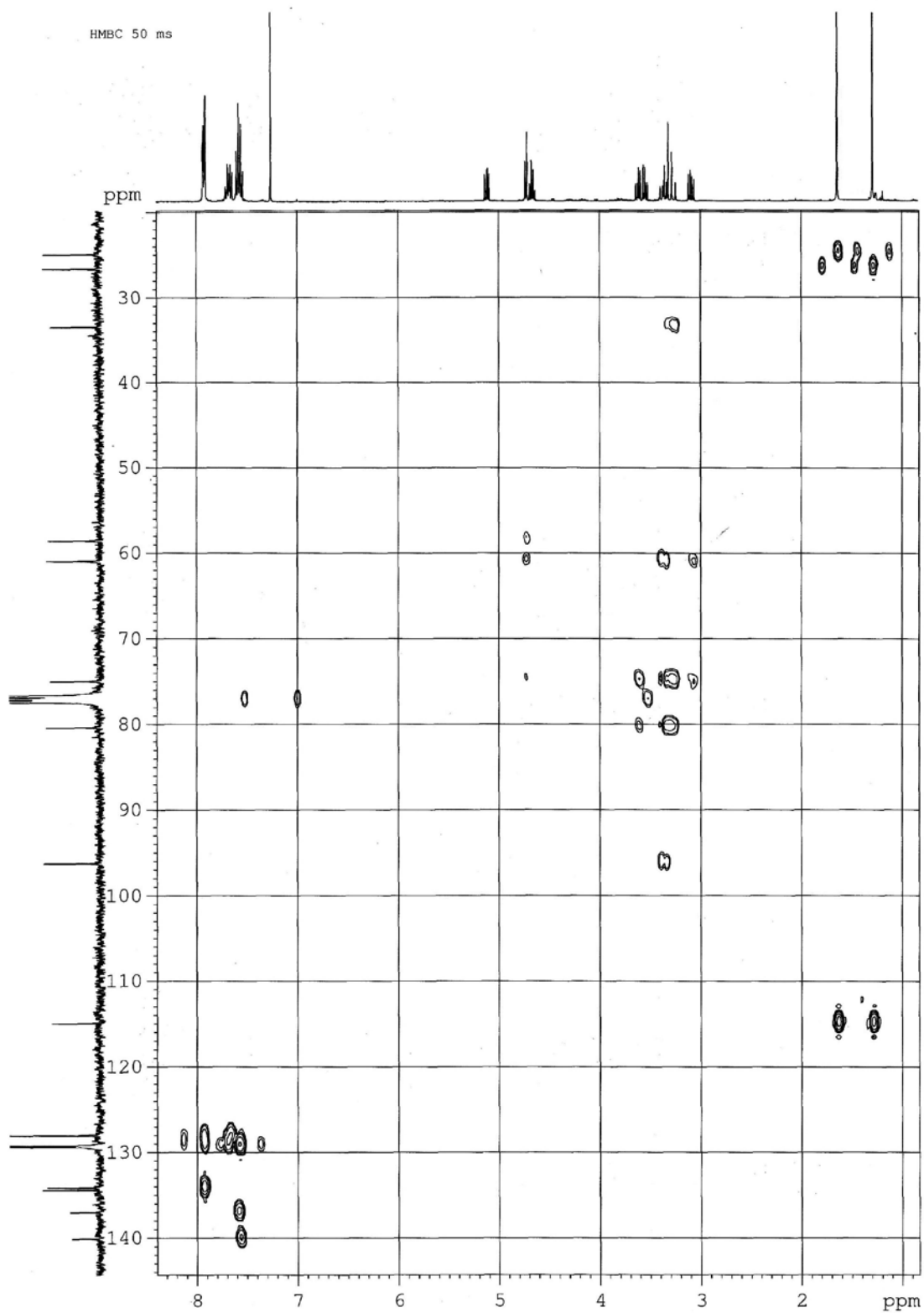


^1H y ^{13}C del compuesto **43**:

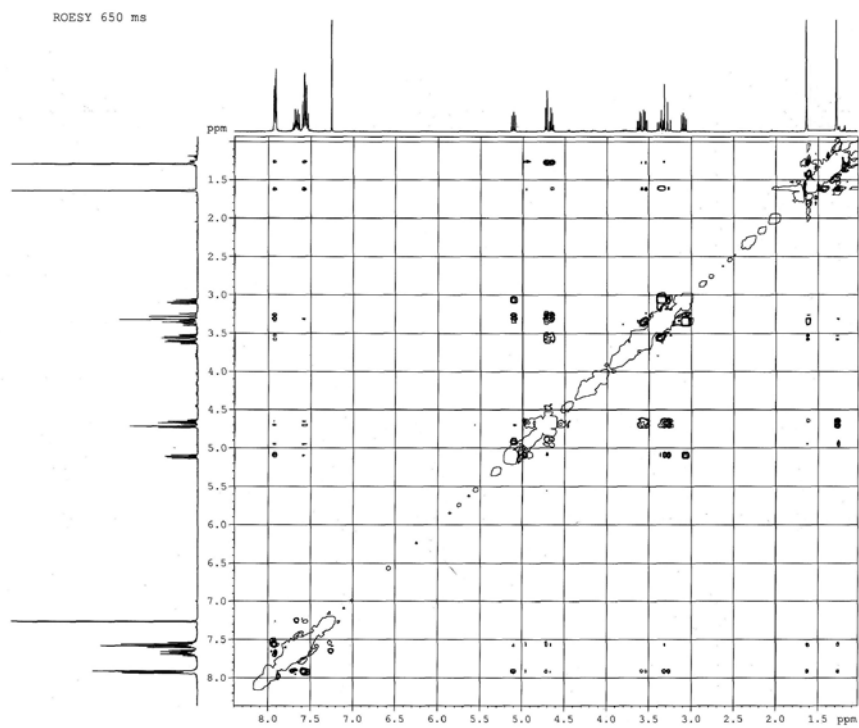
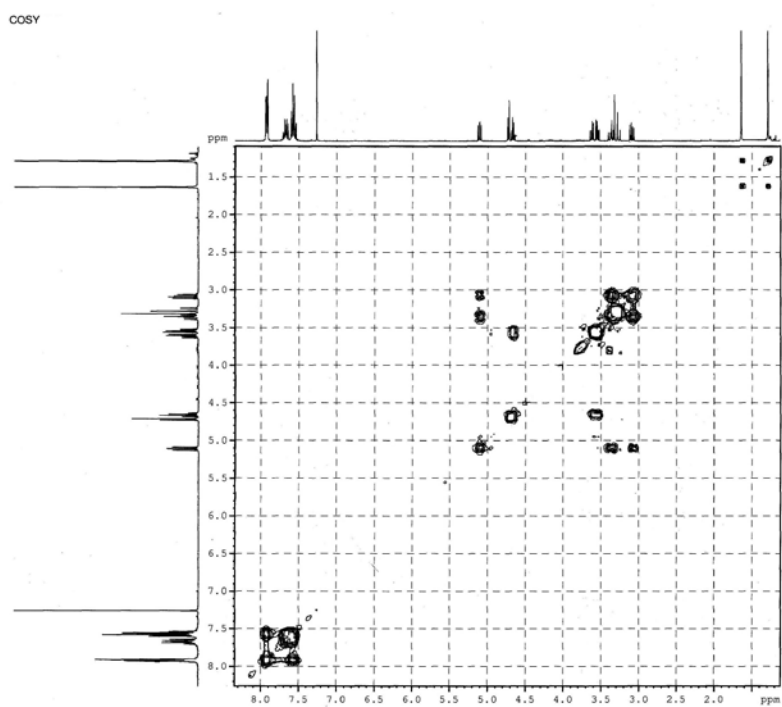
HMQC del compuesto **43**:



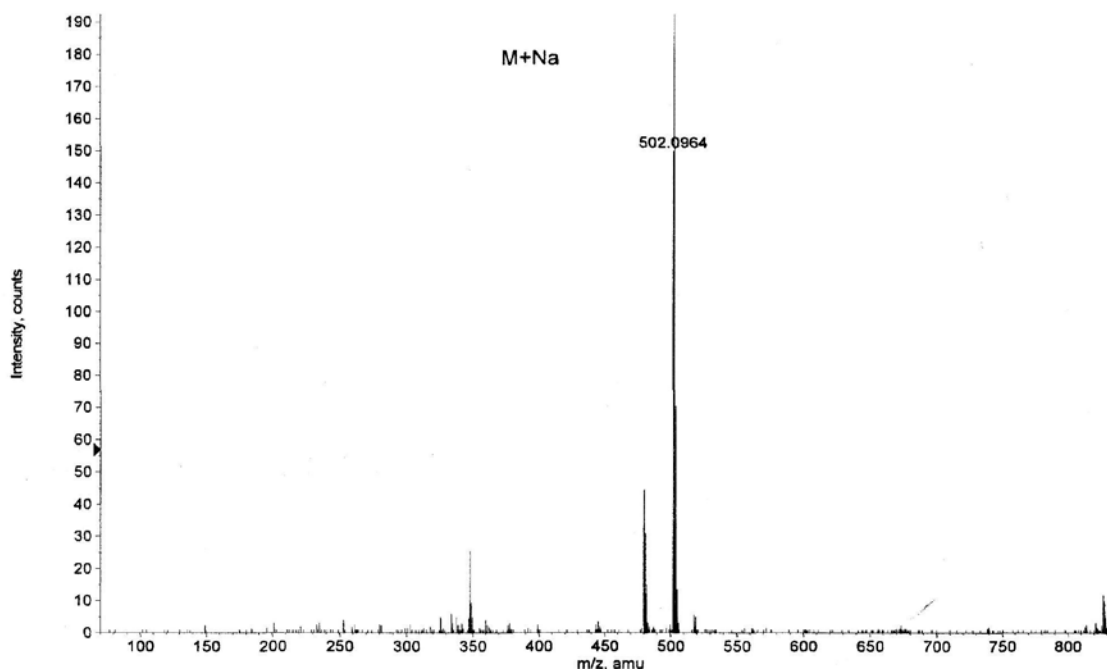
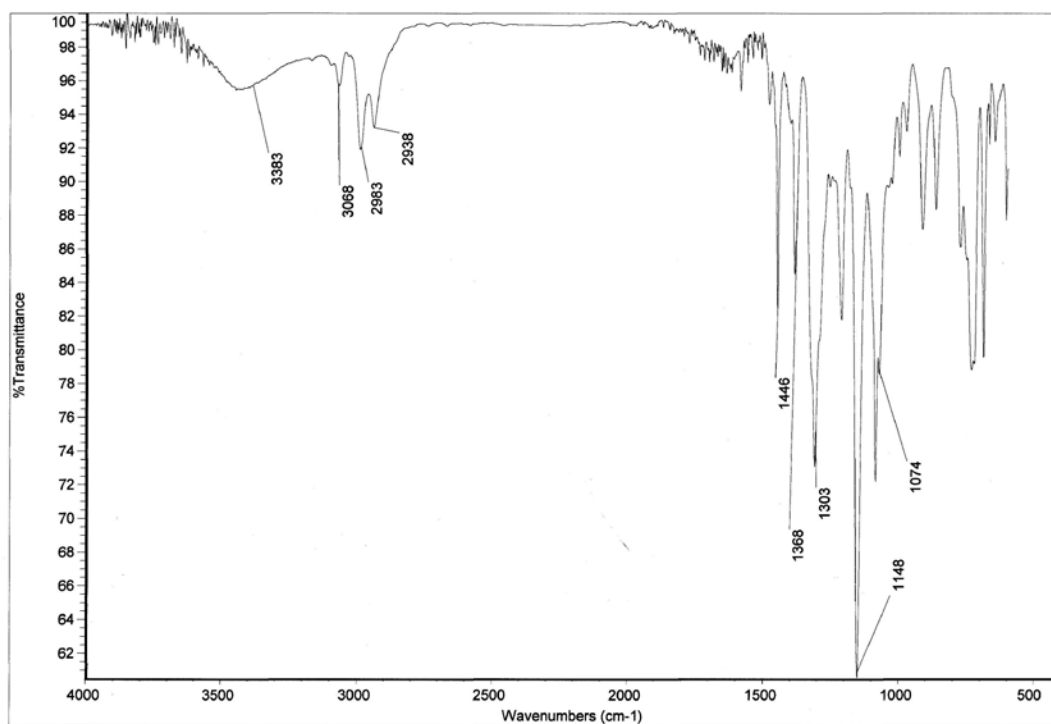
HMBC del compuesto 43:

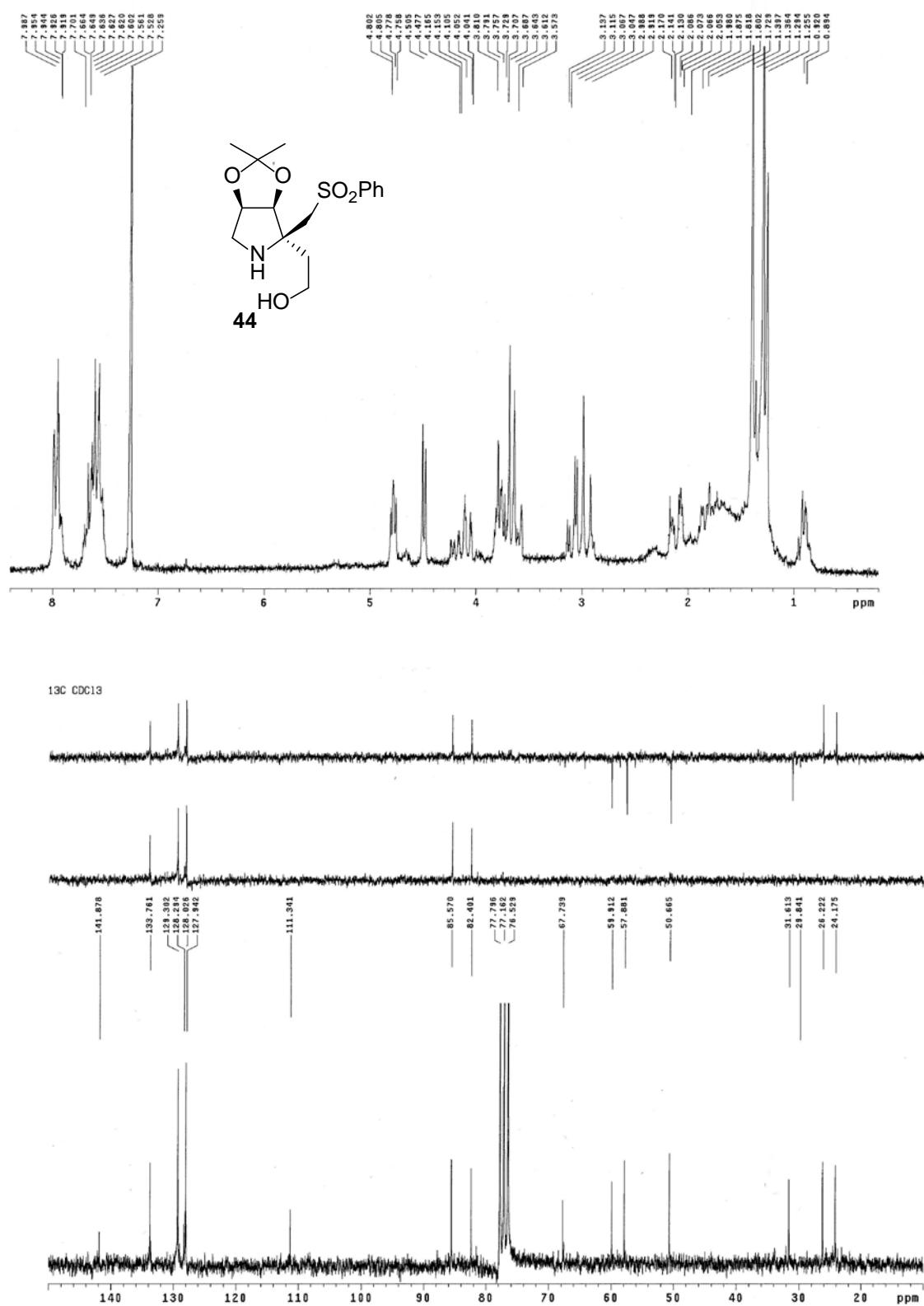


Cosy y Roesy del compuesto **43**:

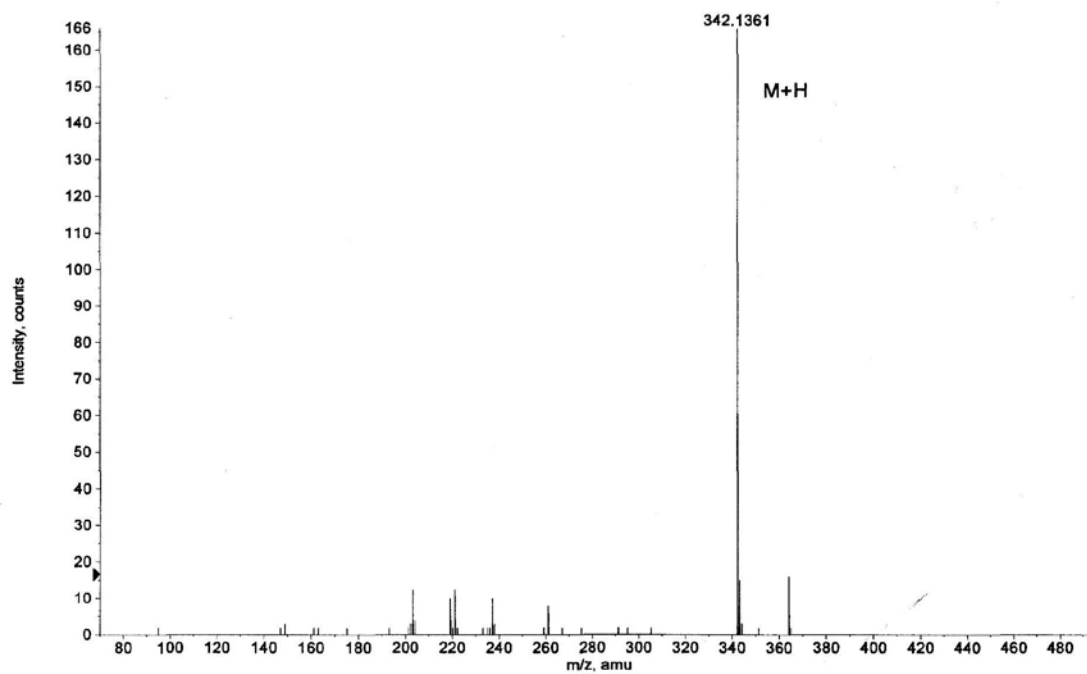
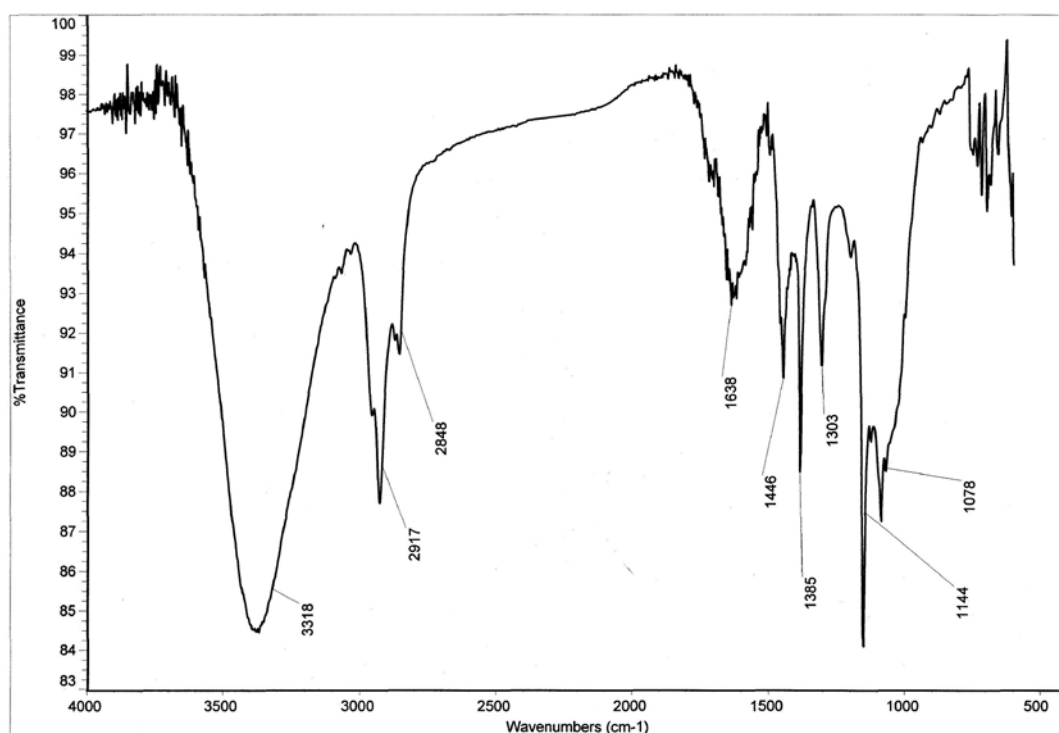


IR y HRMS del compuesto **43**:

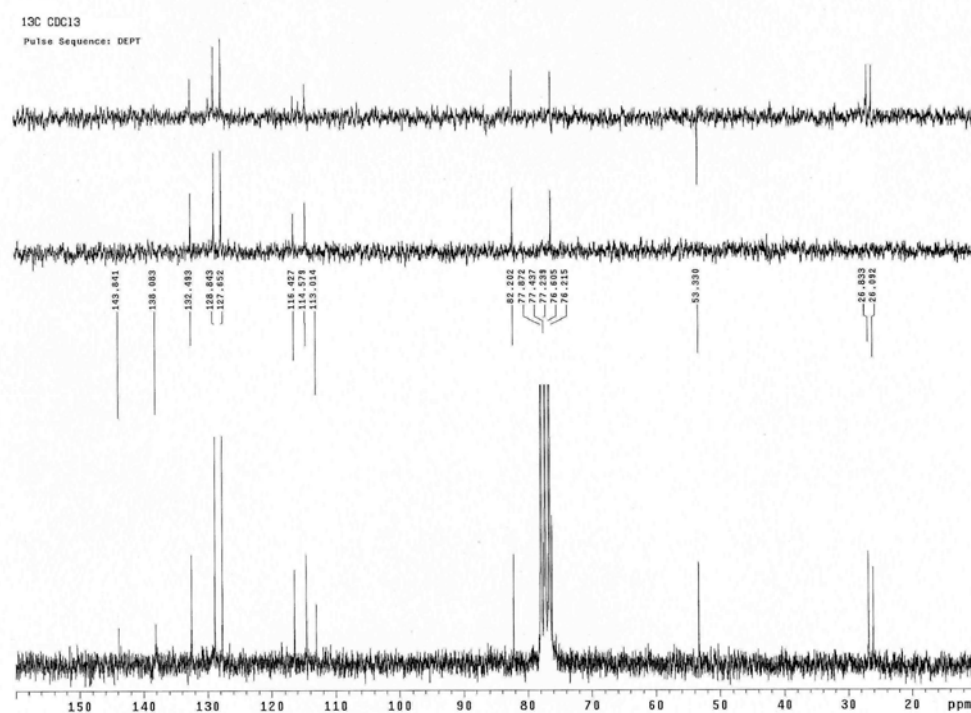
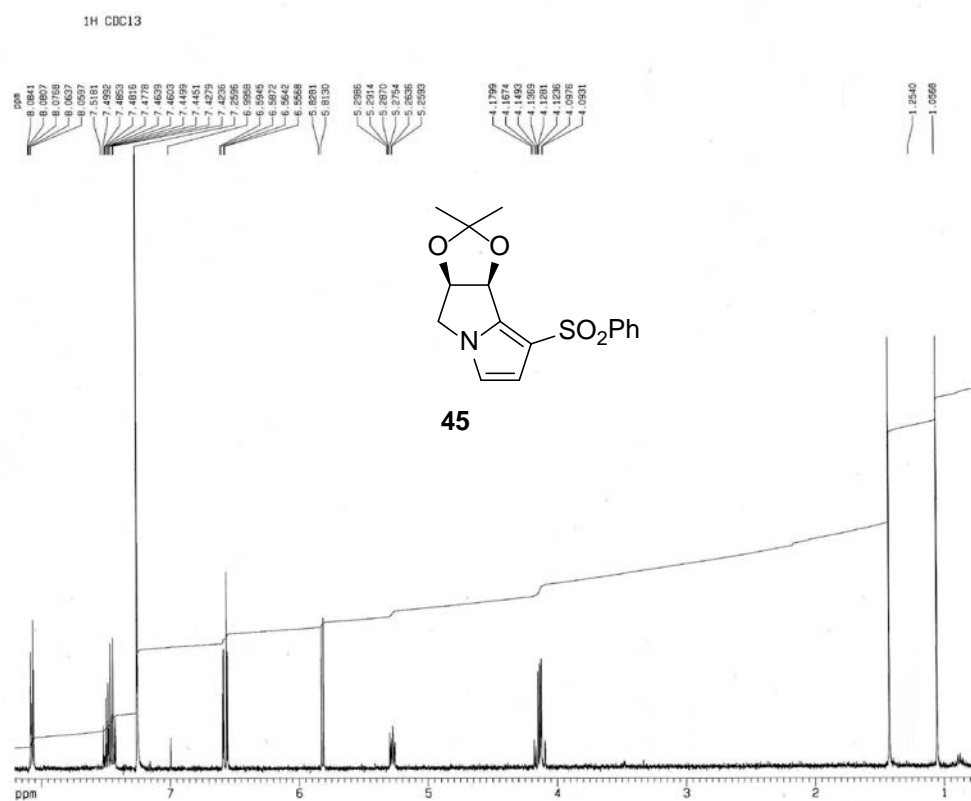


^1H y ^{13}C del compuesto **44**:

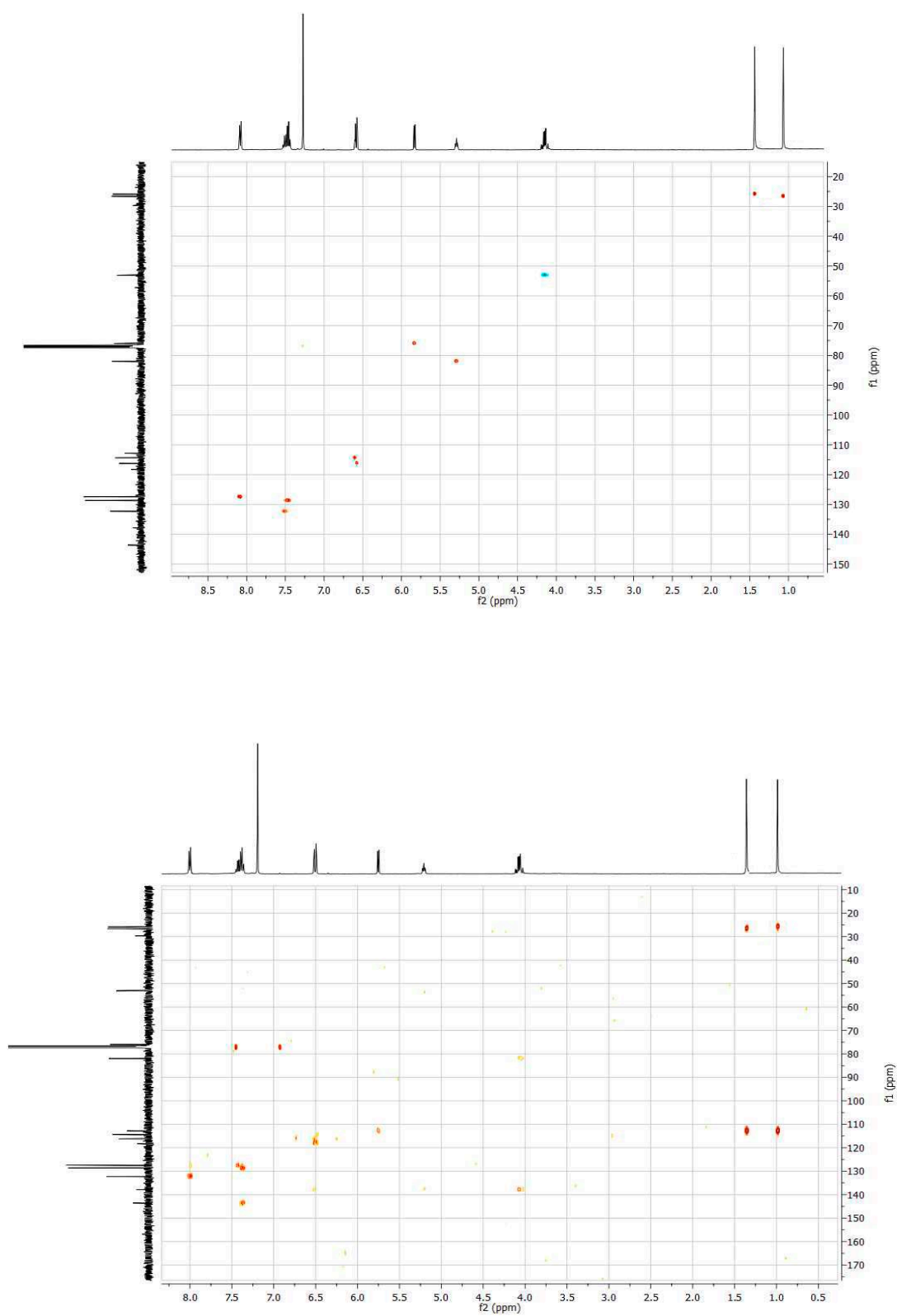
IR y HRMS del compuesto **44**:



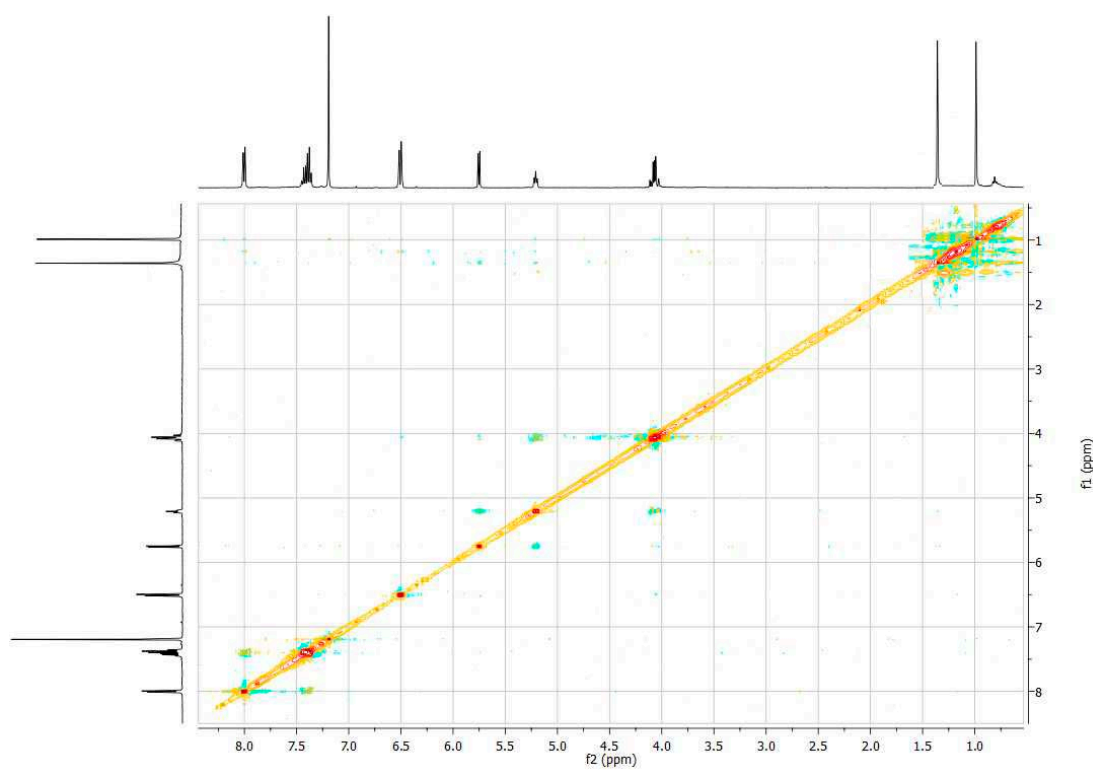
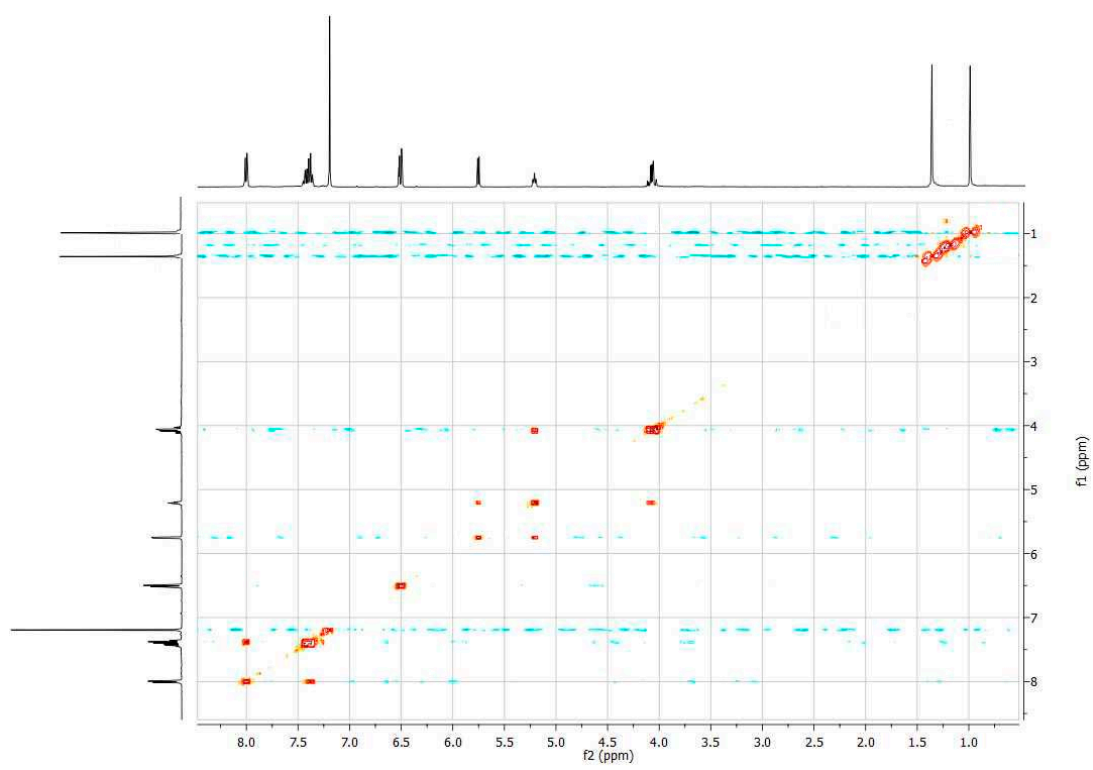
^1H y ^{13}C del compuesto **45**:



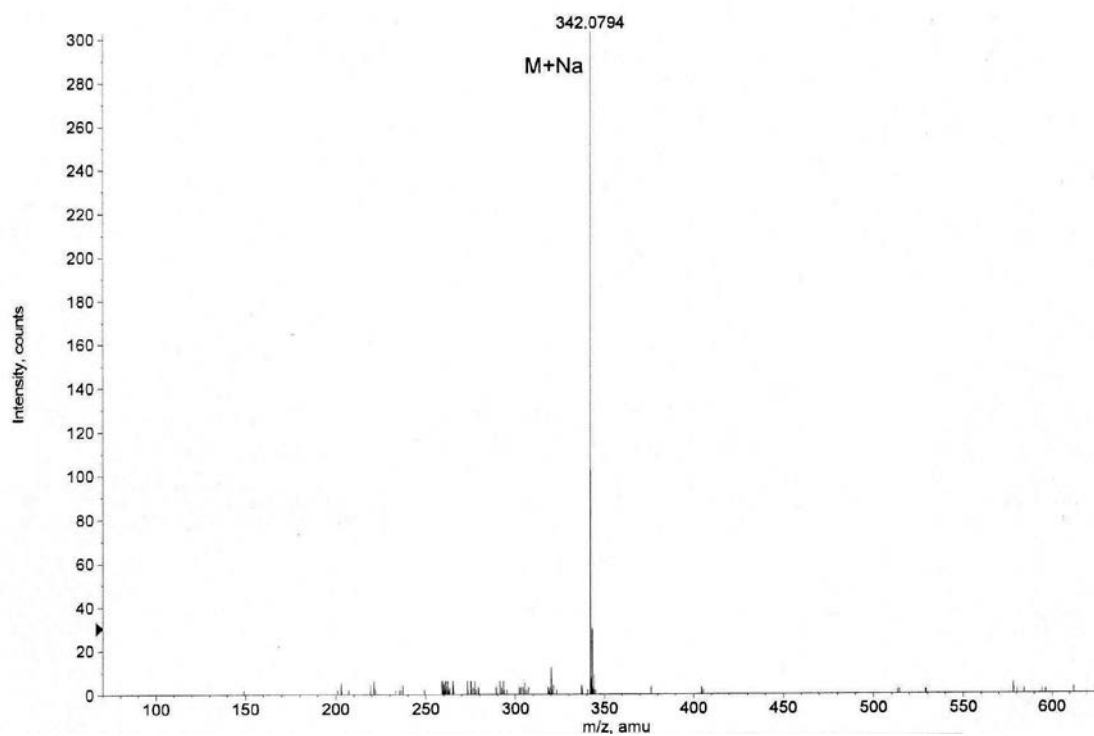
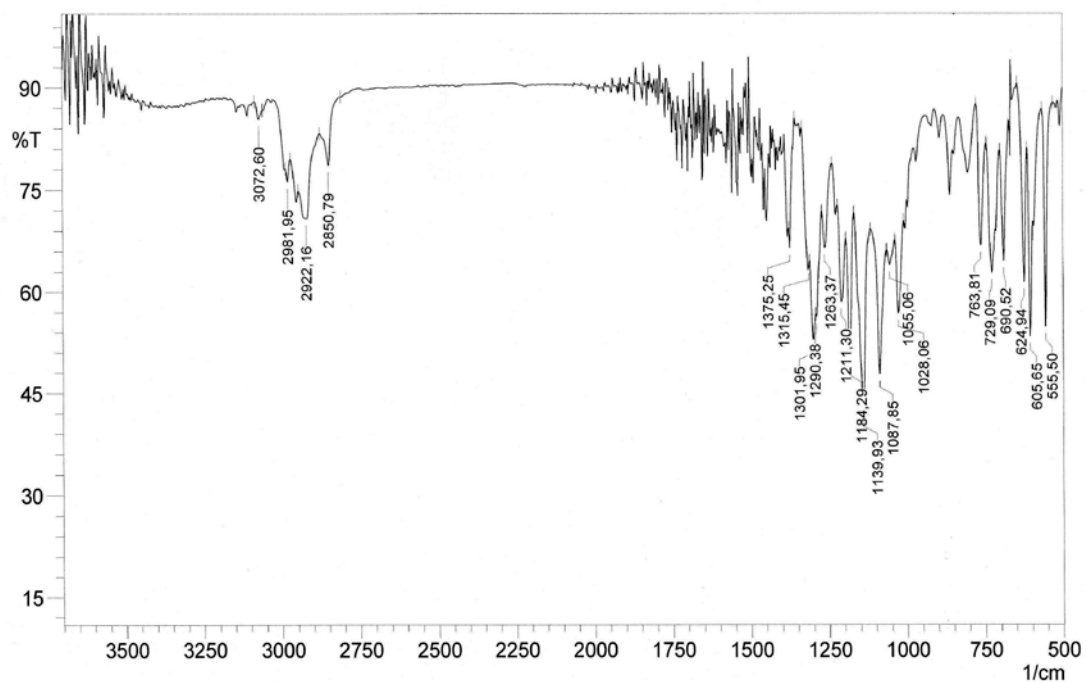
HSQC y HMBC del compuesto **45**:

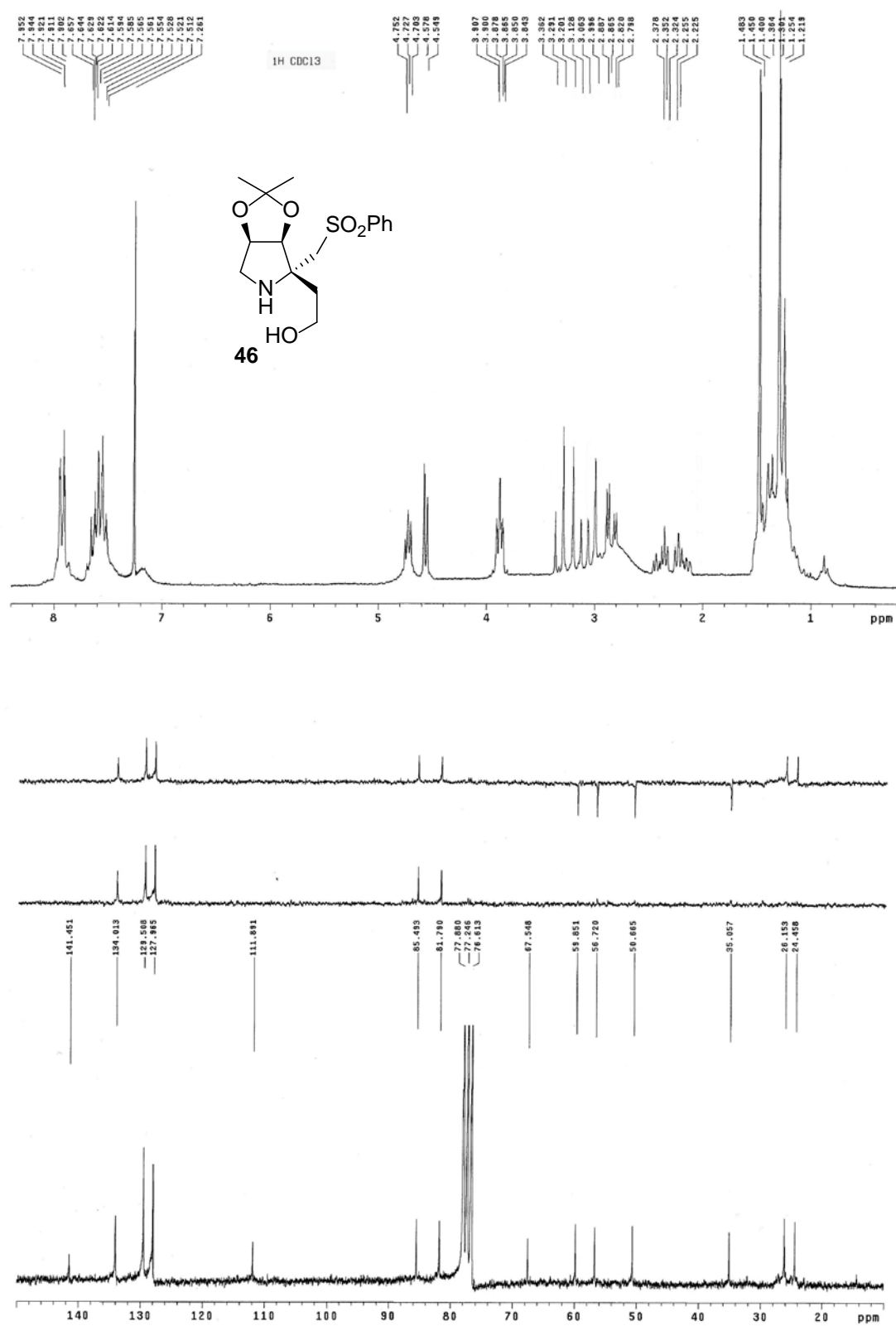


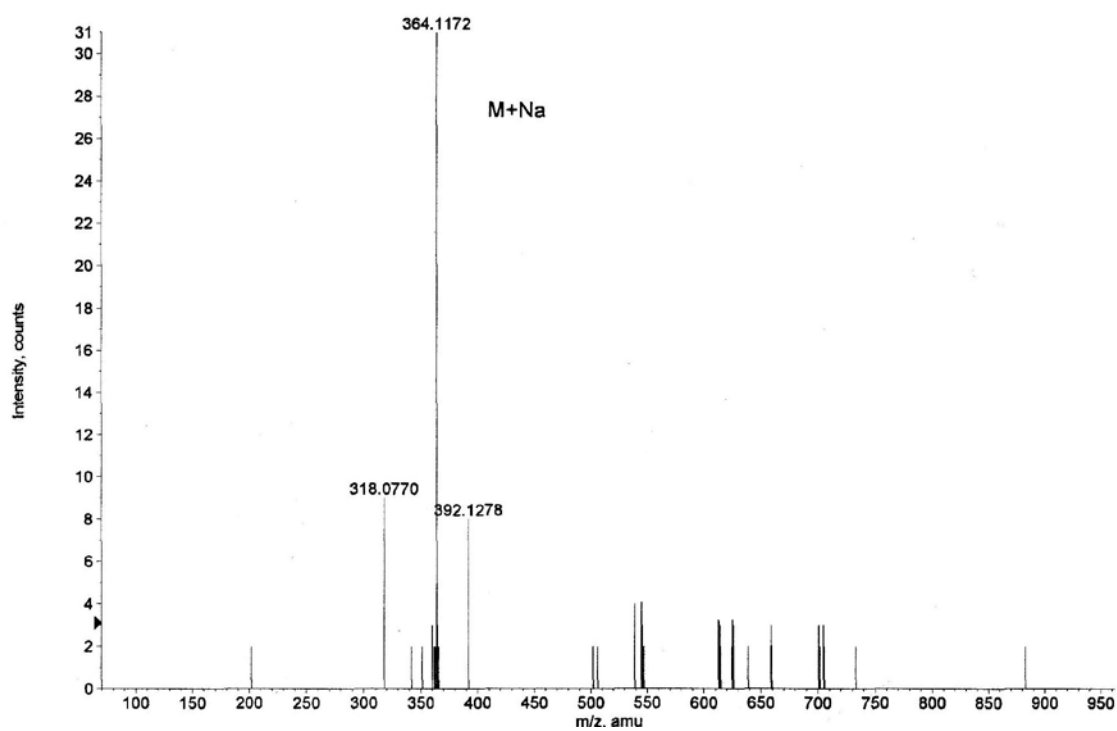
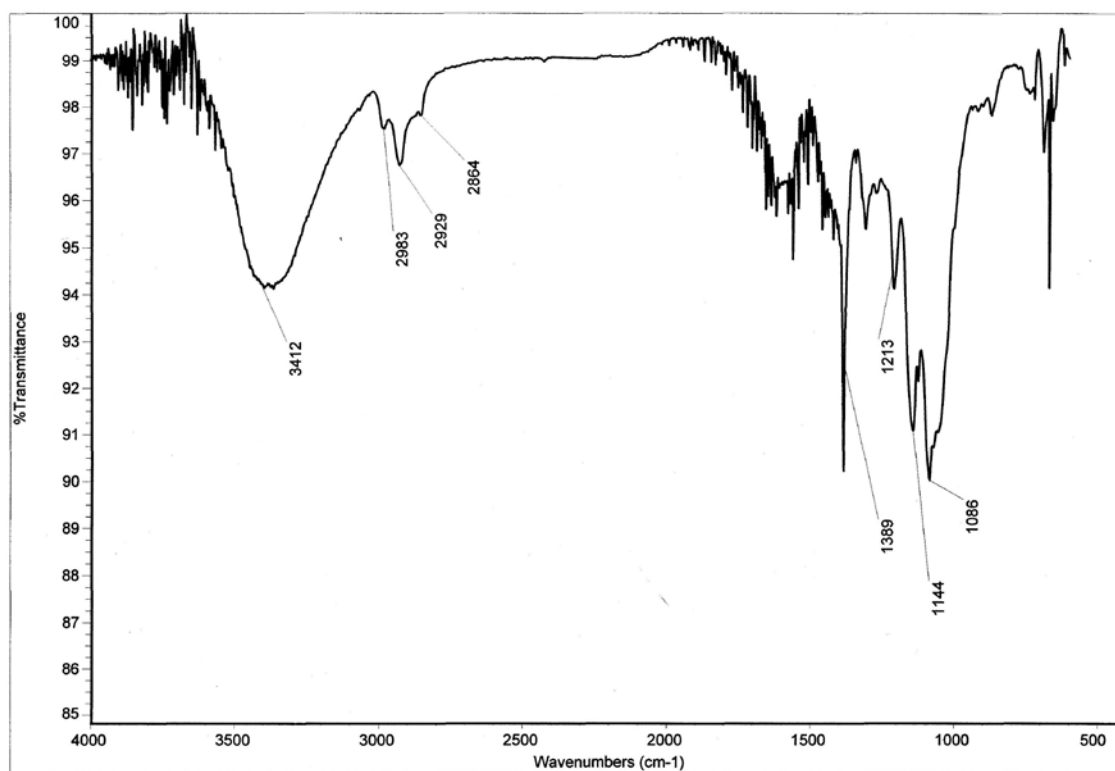
Cosy y Noesy del compuesto **45**:



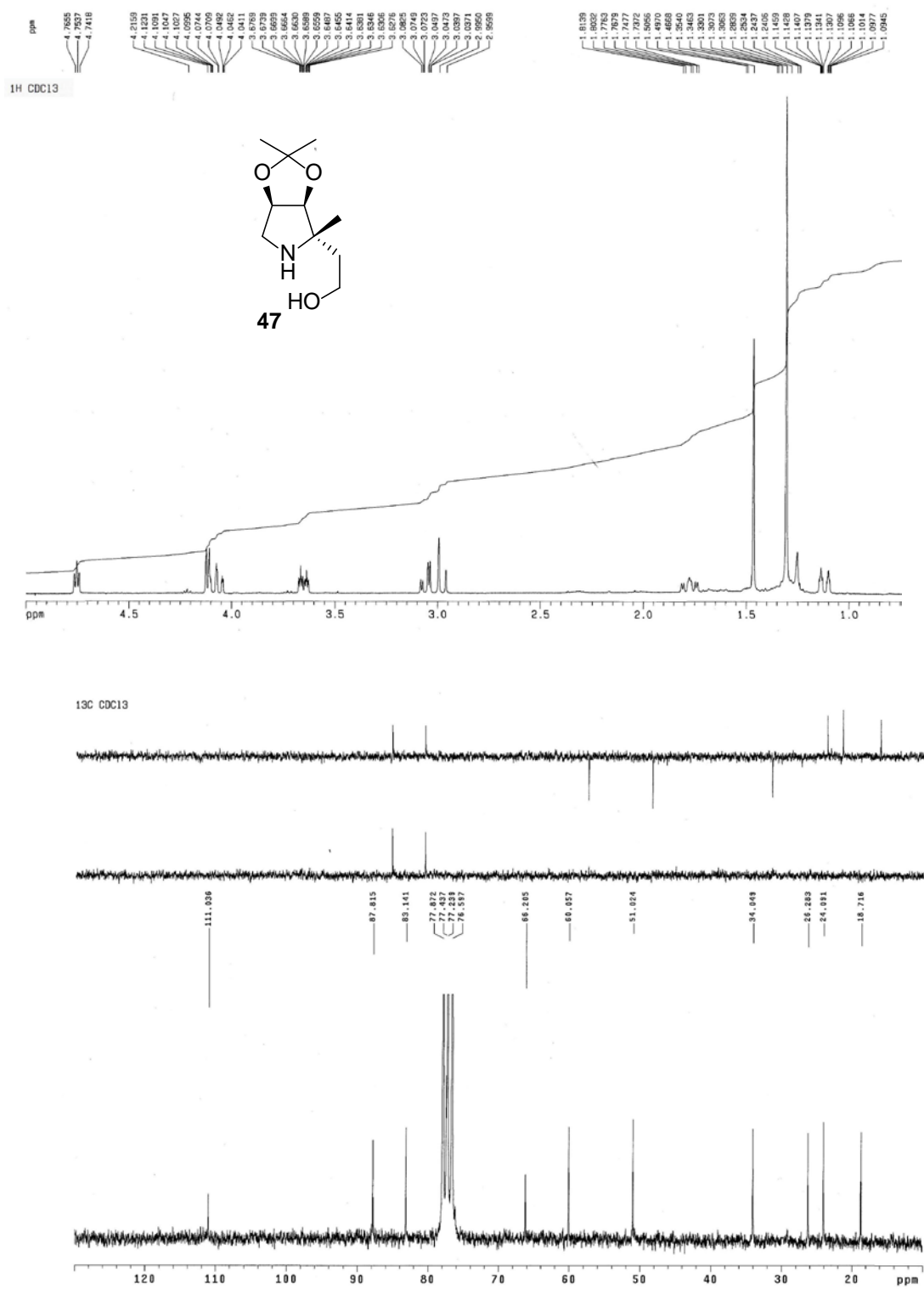
IR y HRMS del compuesto **45**:



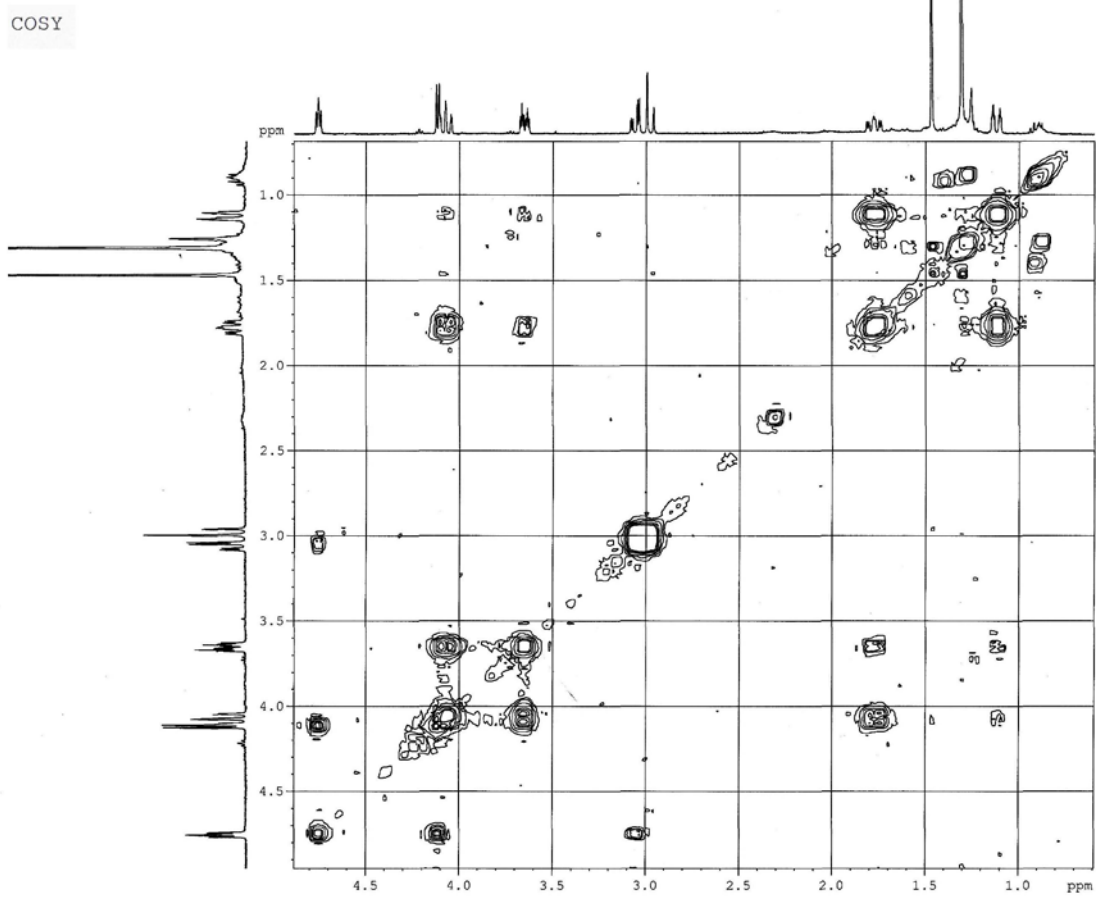
^1H y ^{13}C del compuesto **46**:

IR y HRMS del compuesto **46**:

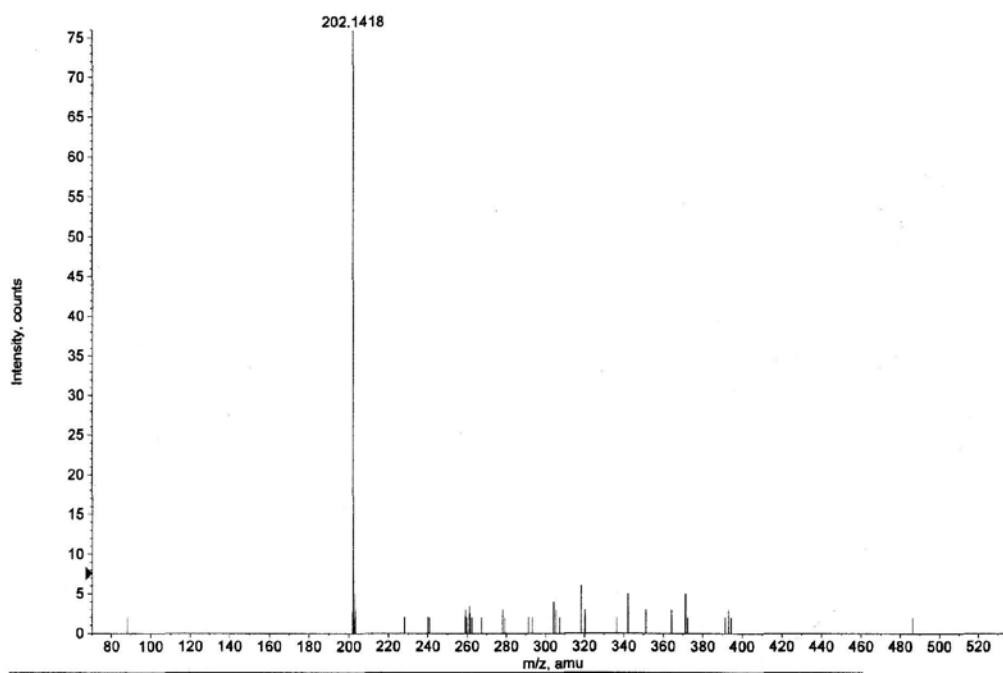
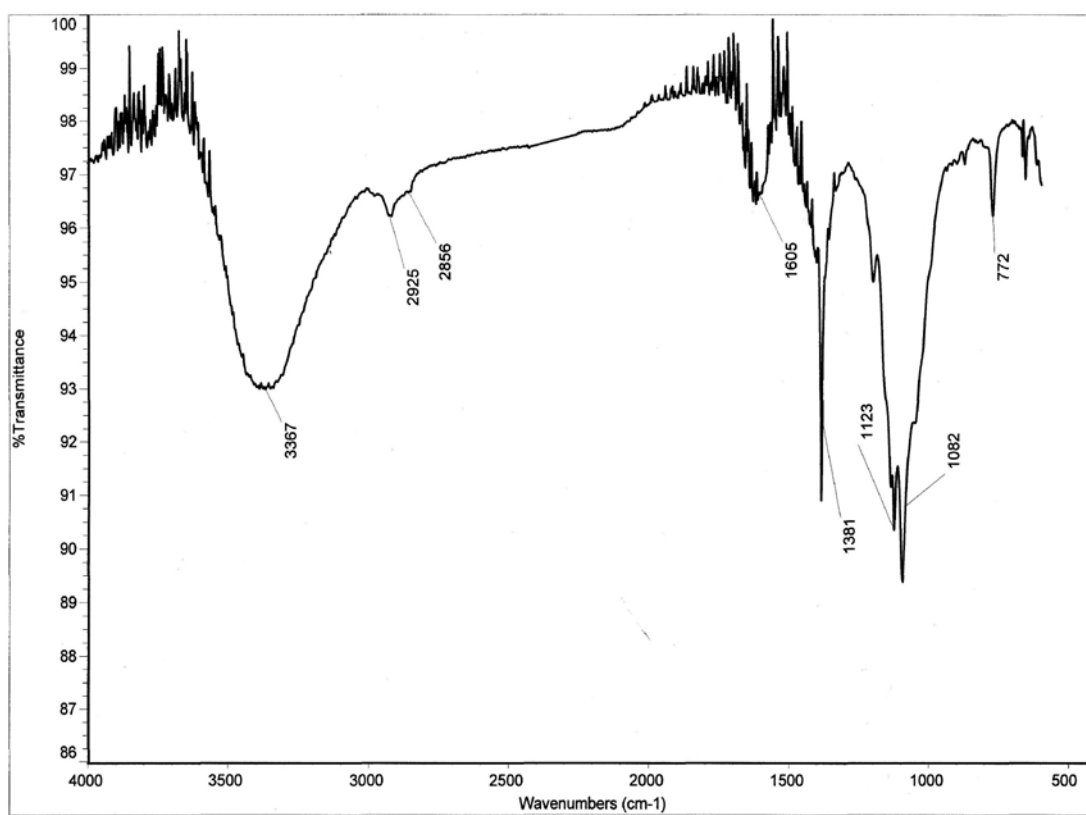
^1H y ^{13}C del compuesto **47**:



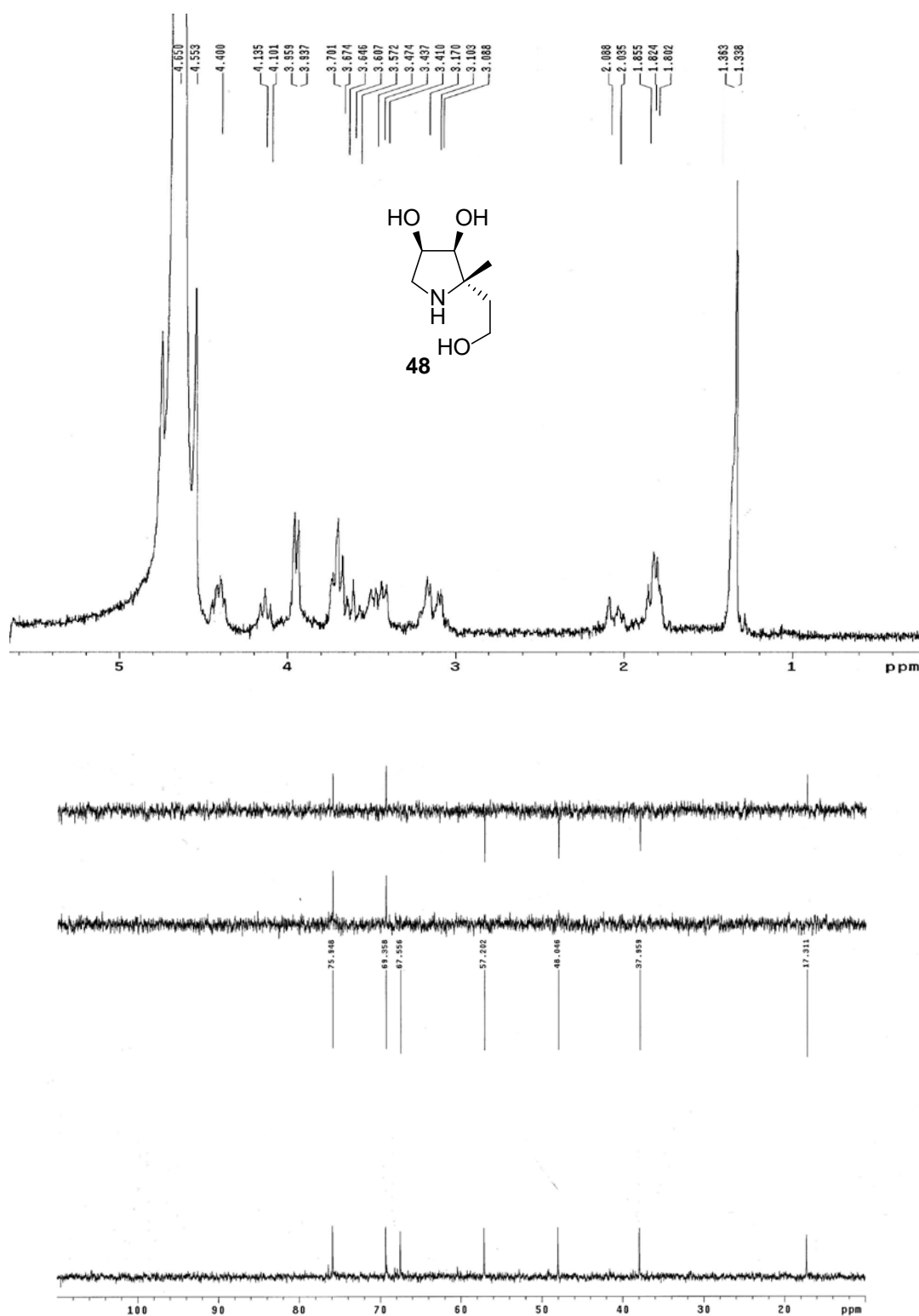
Cosy del compuesto **47**:



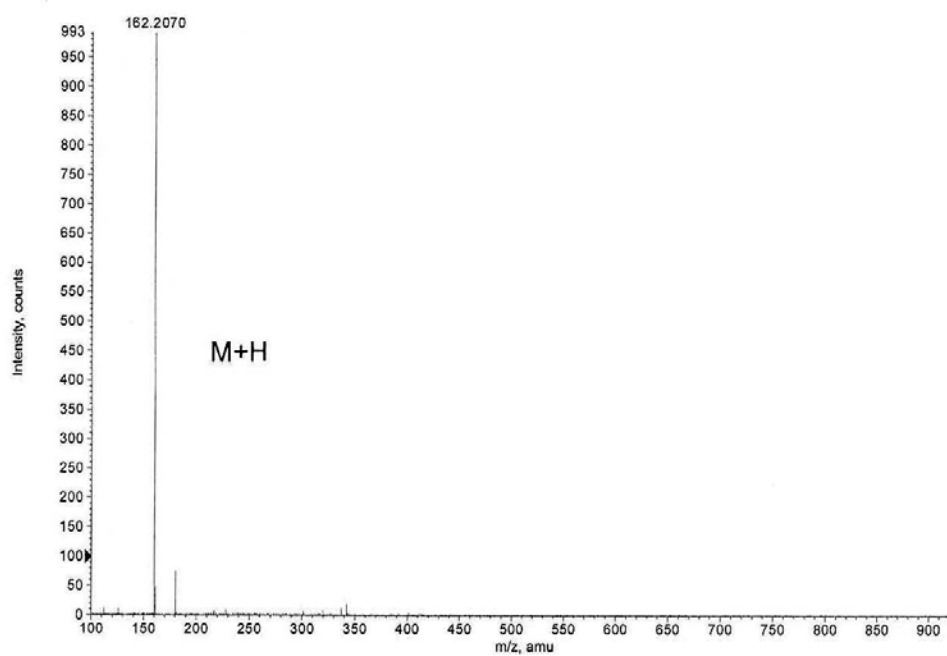
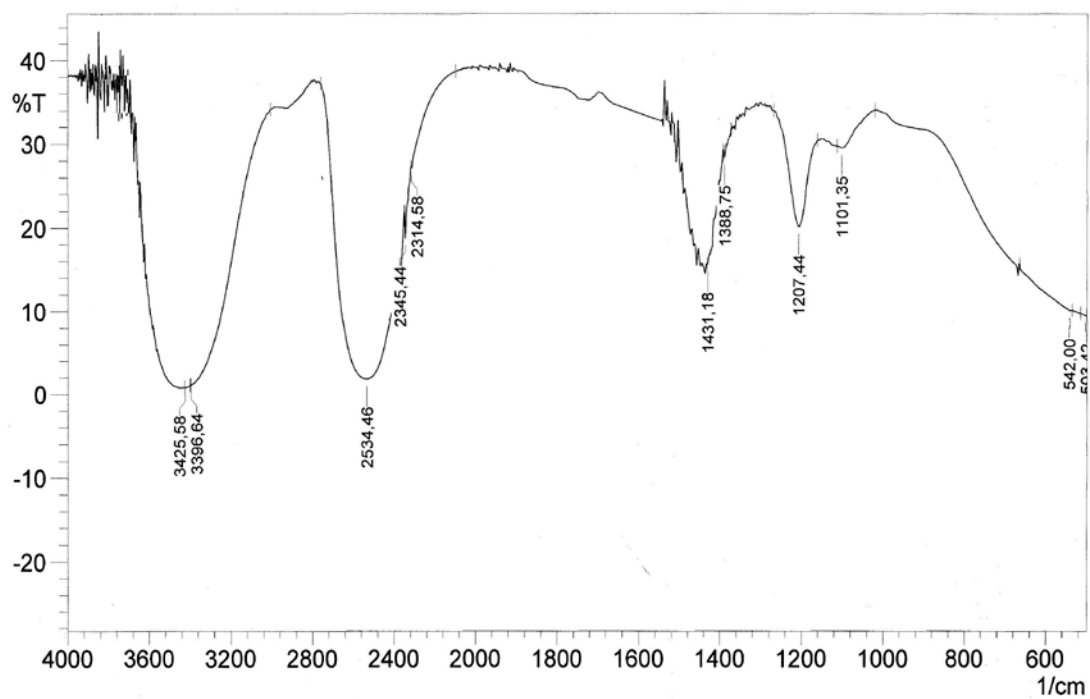
IR y HRMS del compuesto **47**:



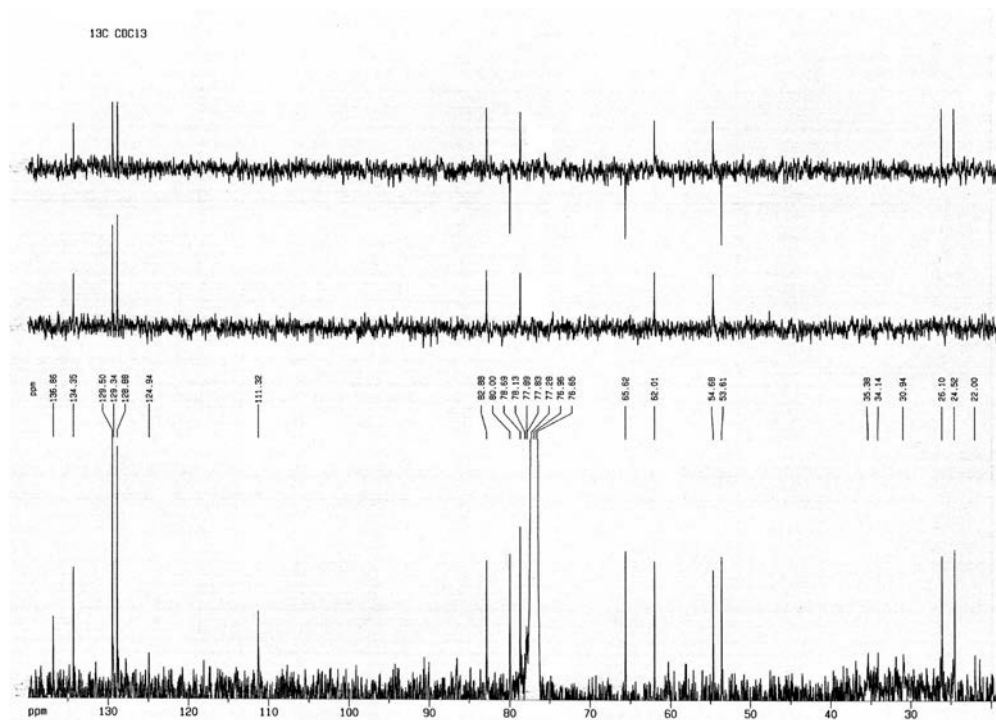
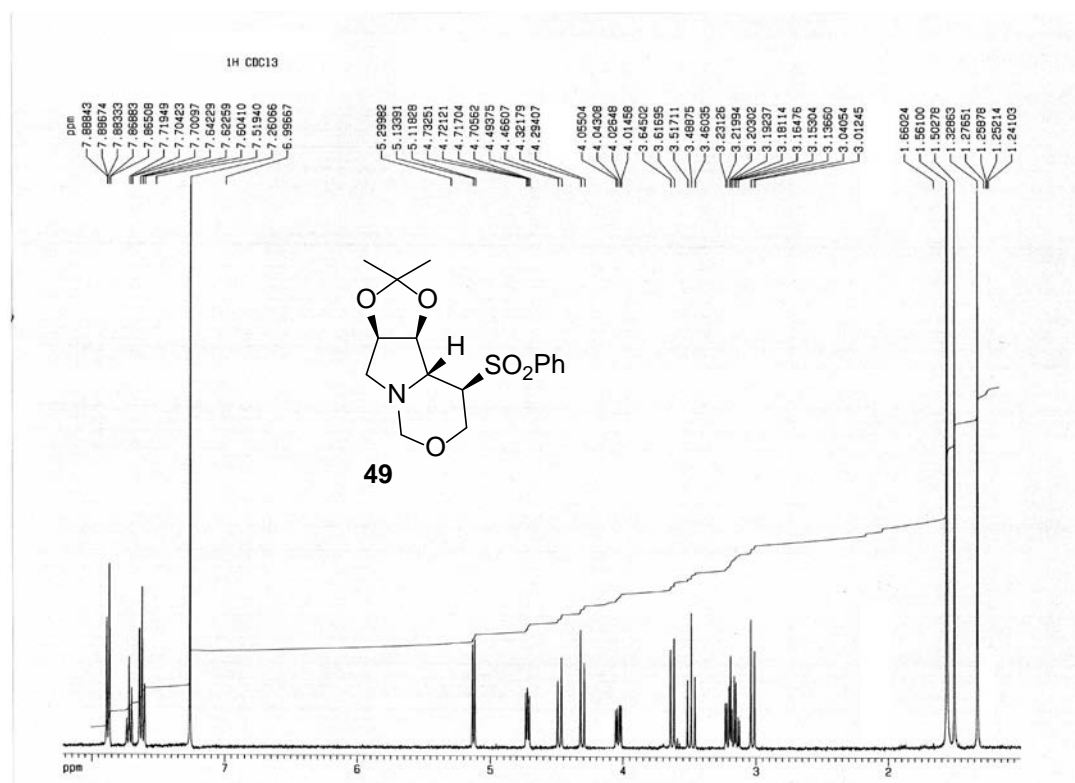
^1H y ^{13}C del compuesto **48**:

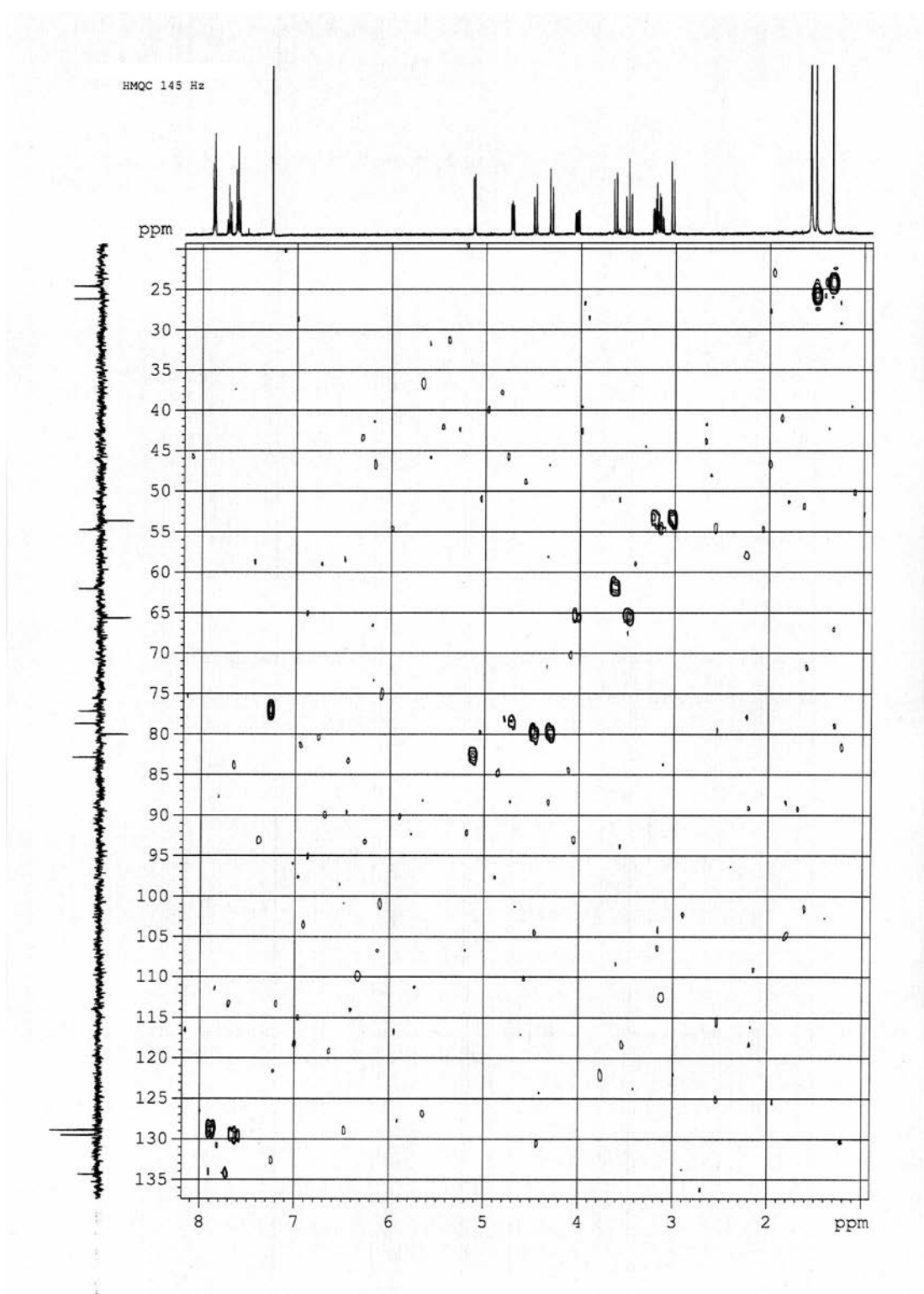


IR y HRMS del compuesto **48**:

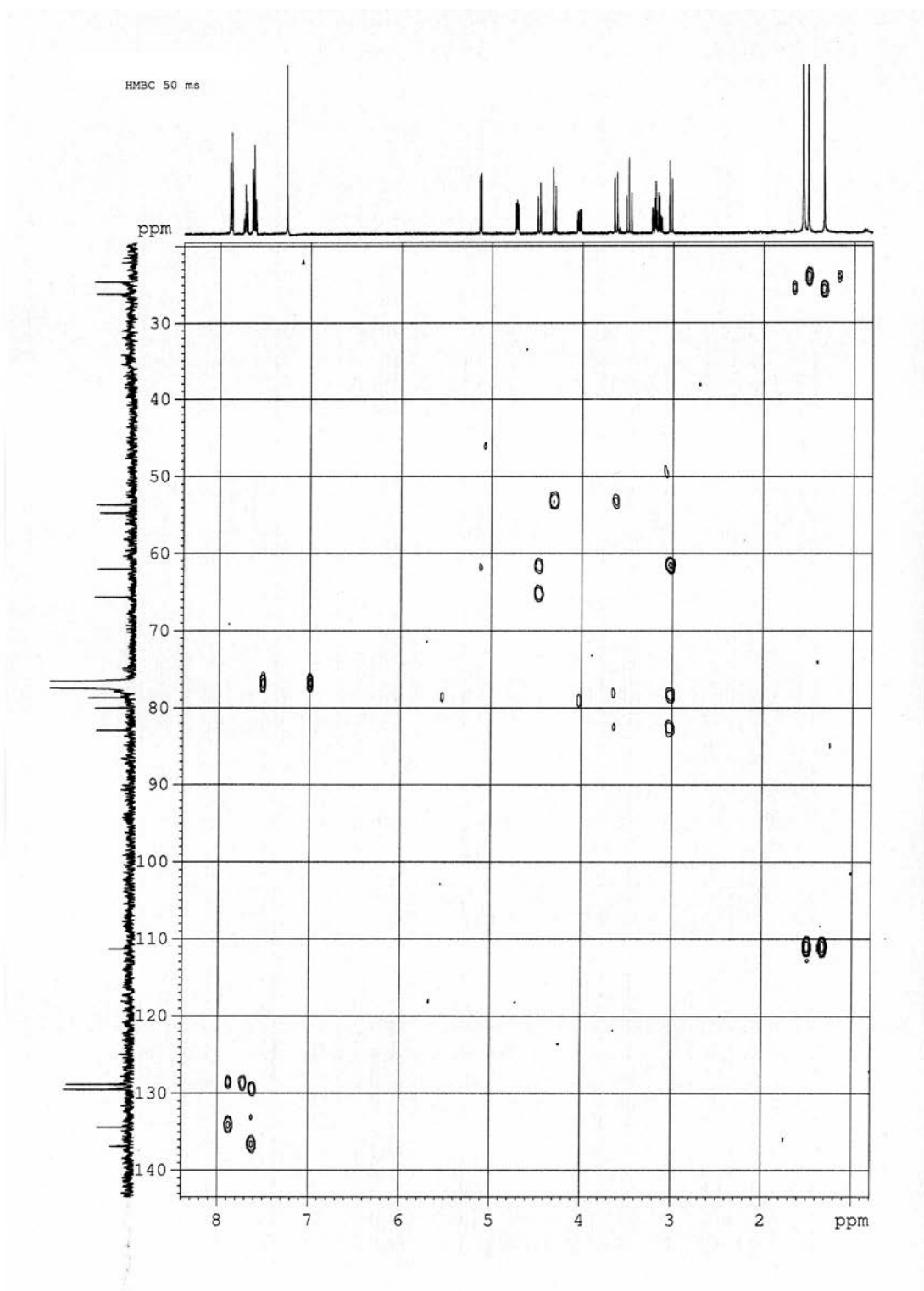


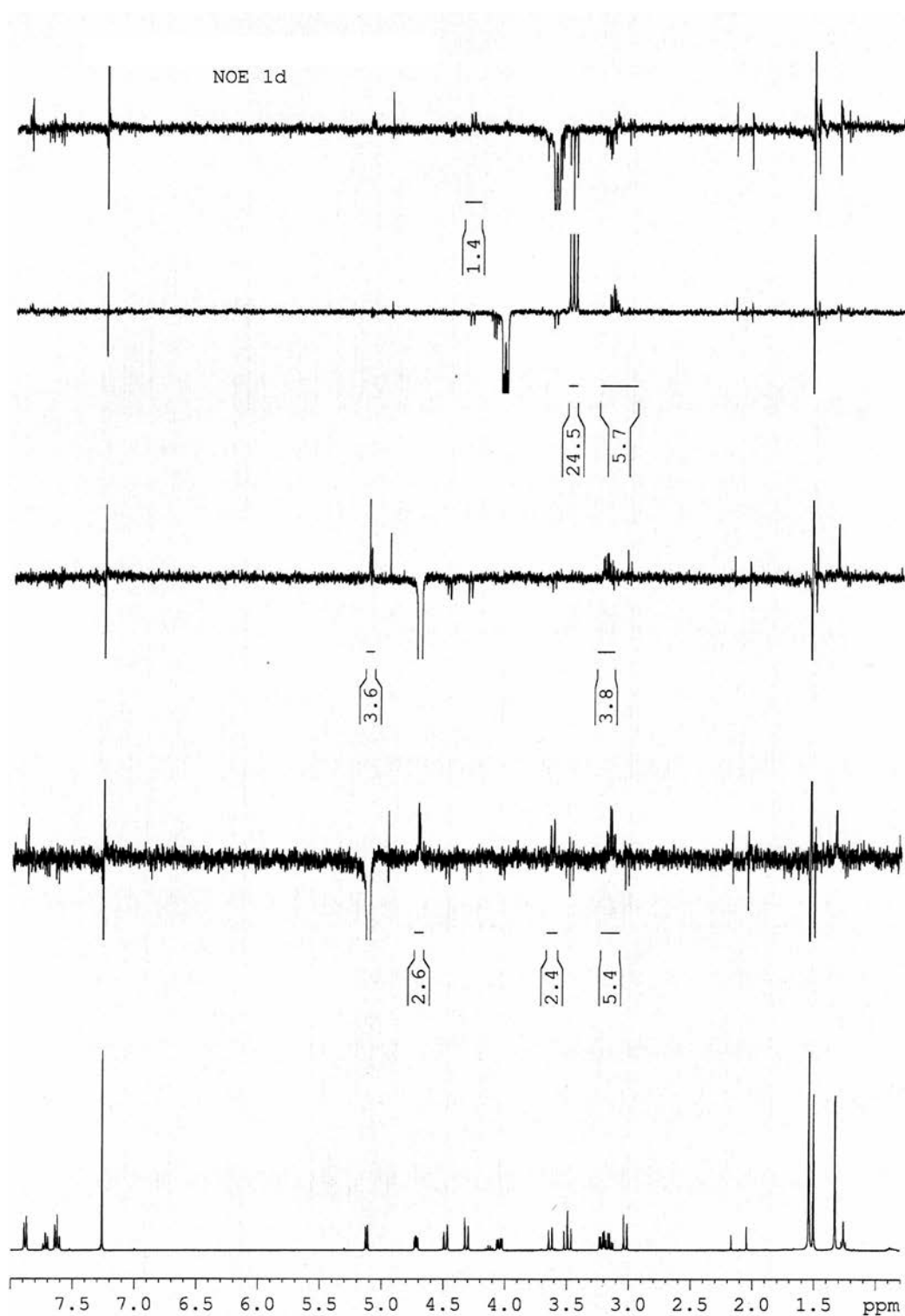
^1H y ^{13}C del compuesto **49**:



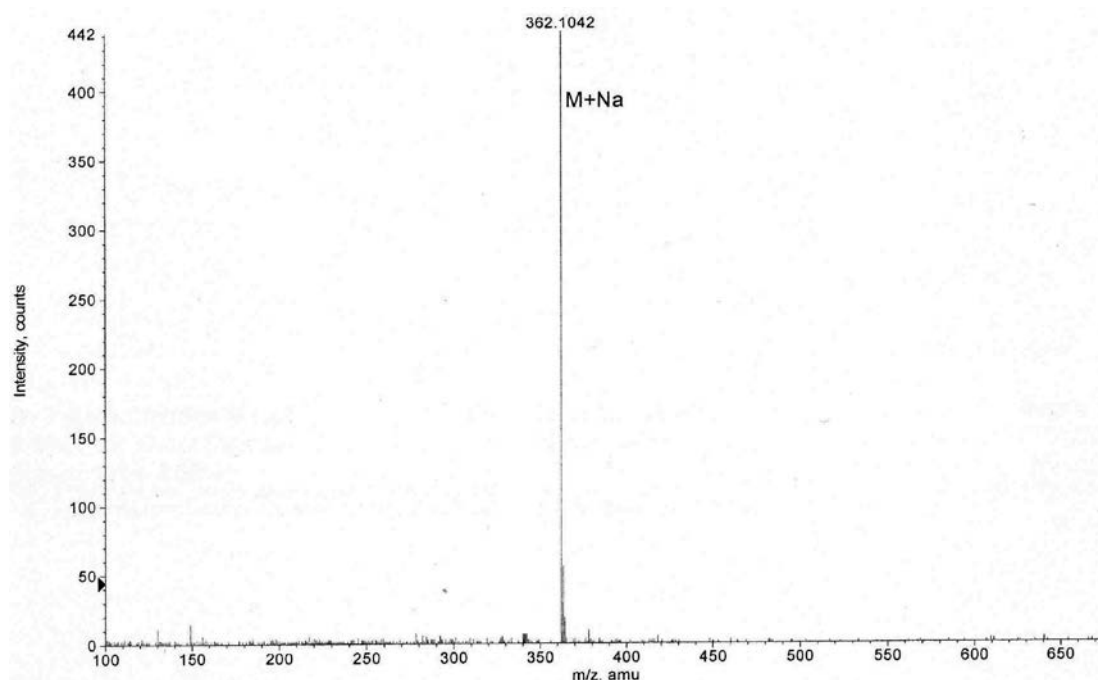
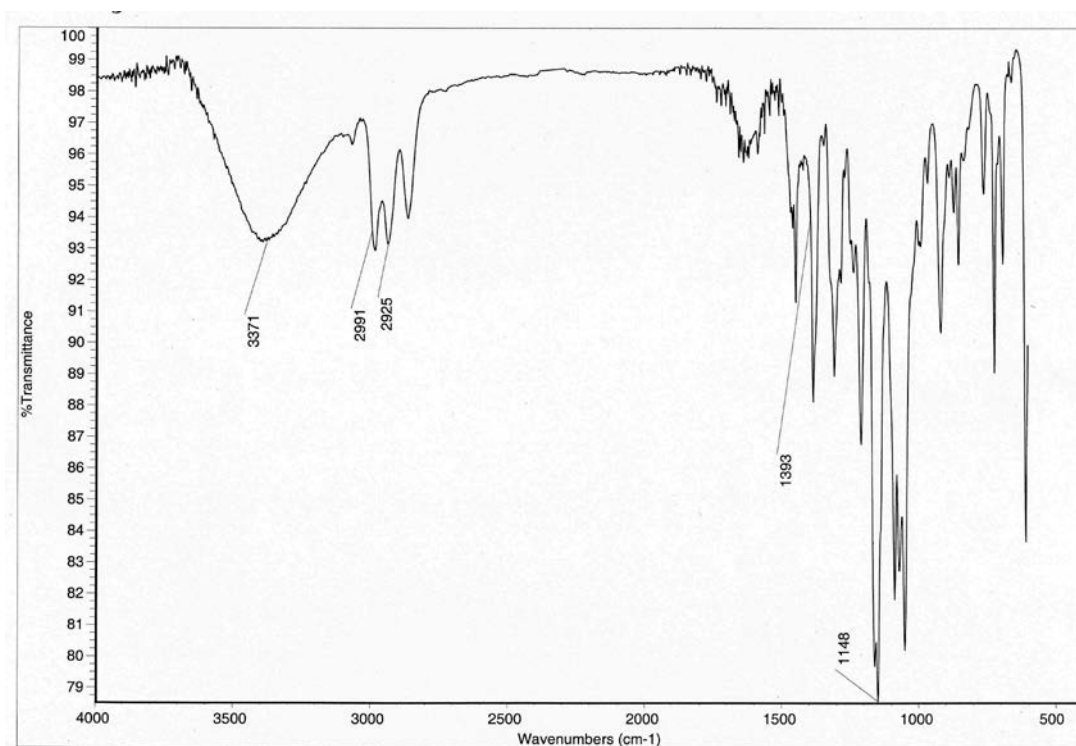
HMQC del compuesto **49**:

HMBC del compuesto 49:

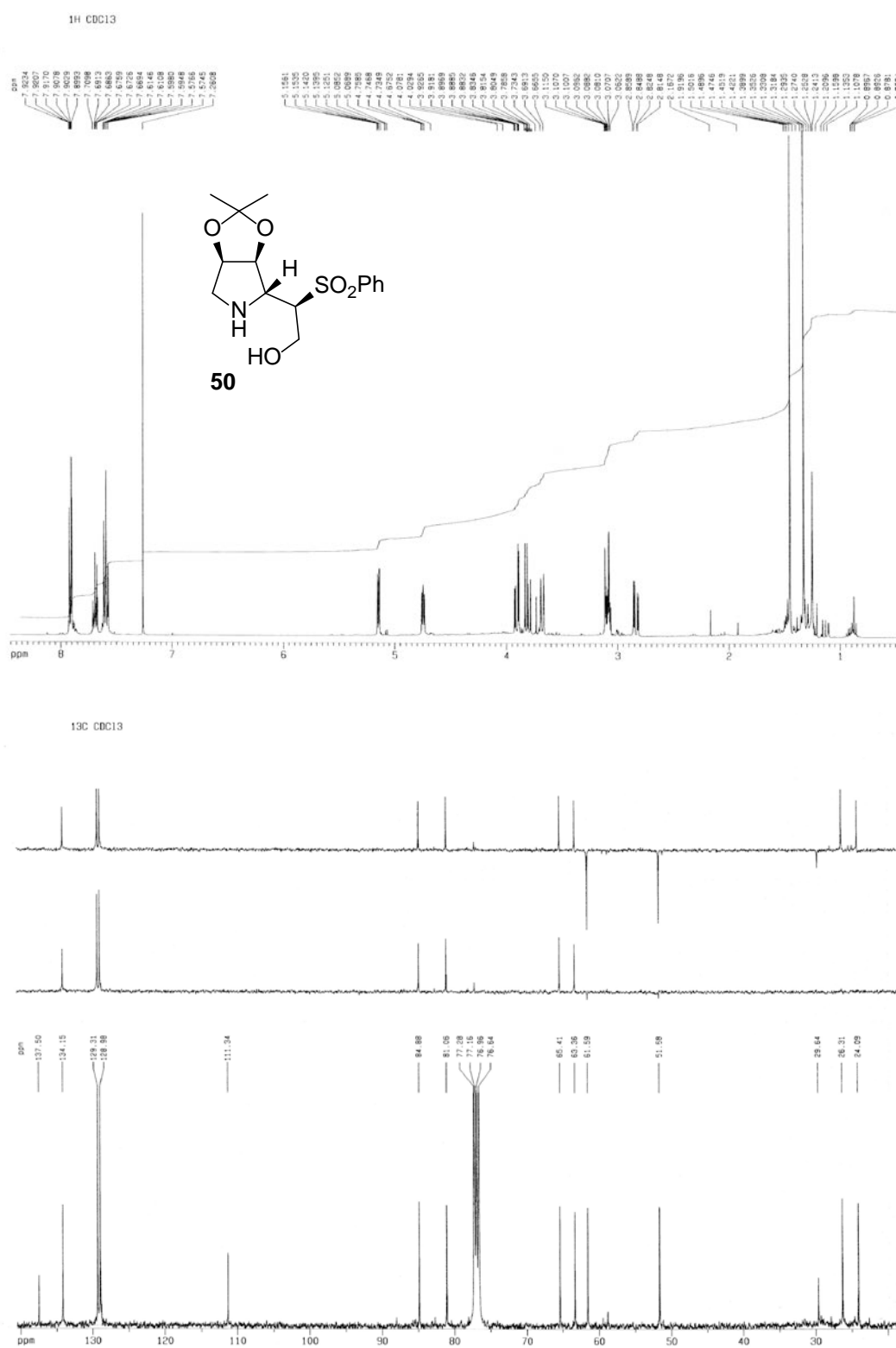


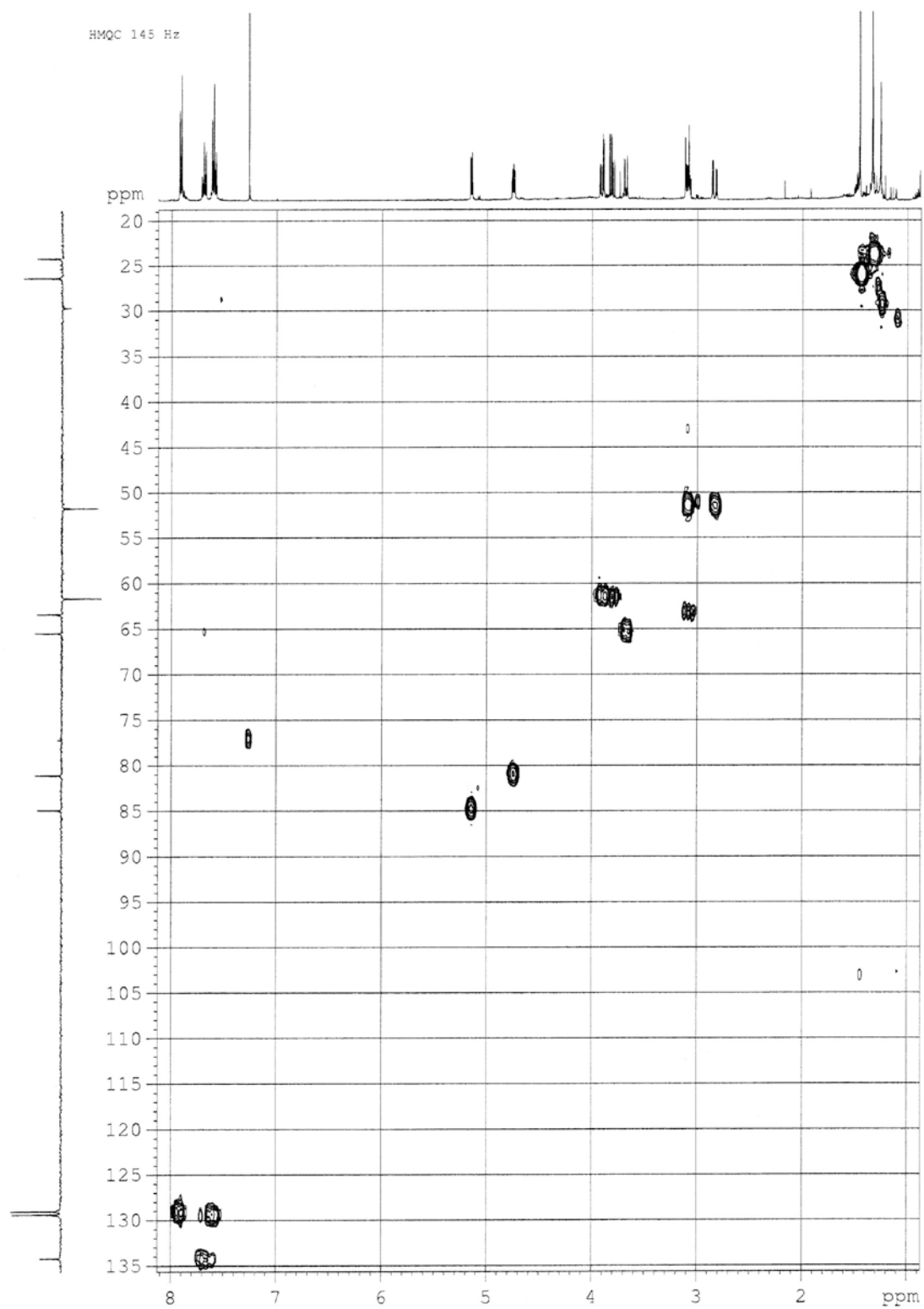
Noe del compuesto **49**:

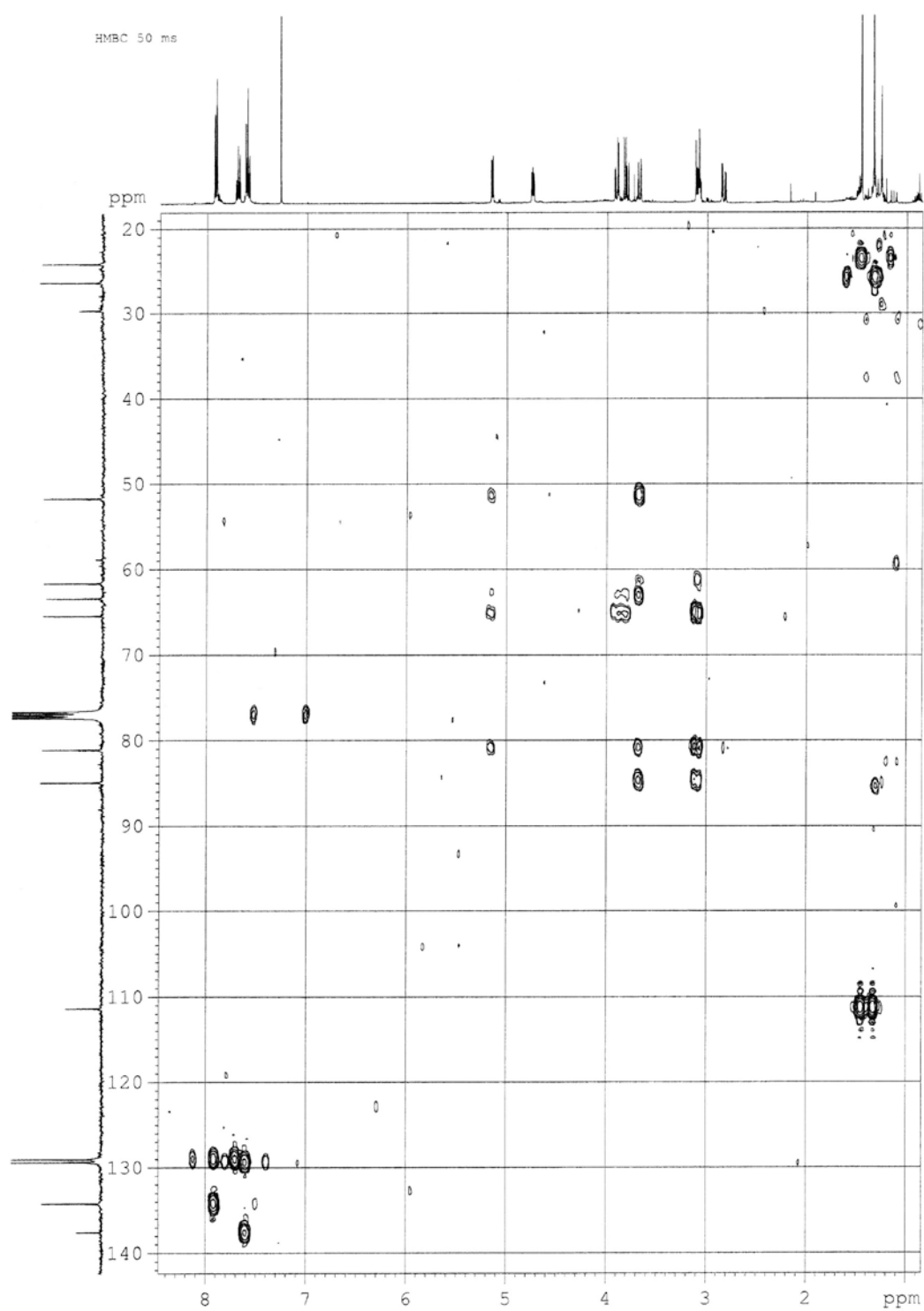
IR y HRMS del compuesto **49**:



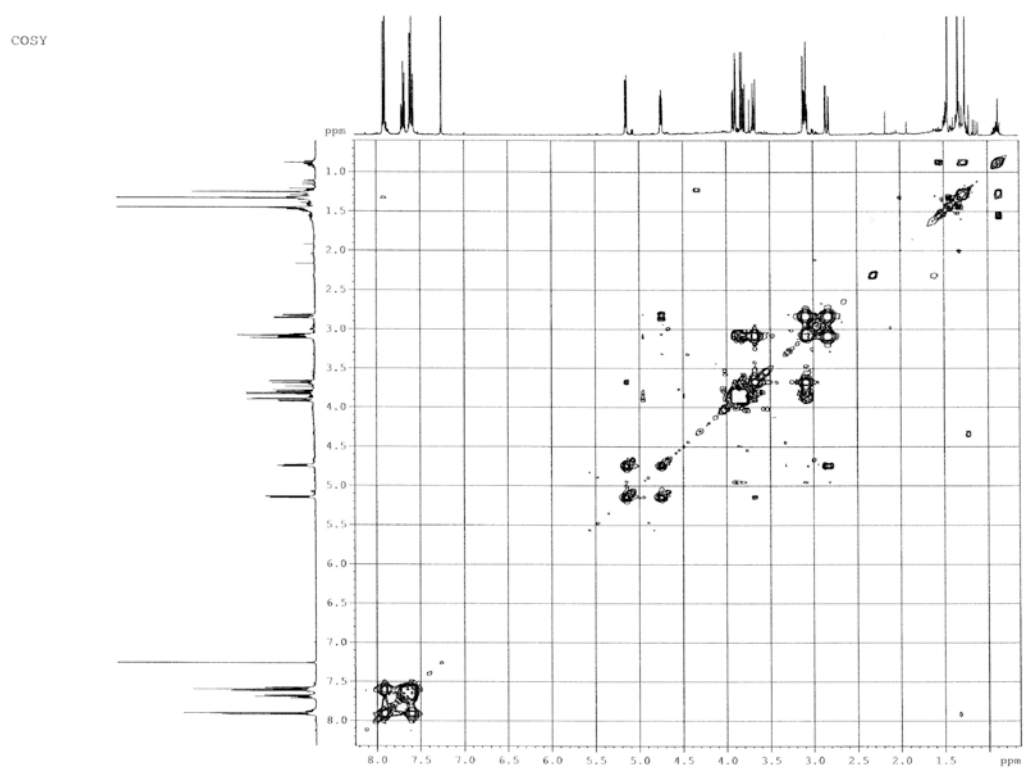
^1H y ^{13}C del compuesto **50**:



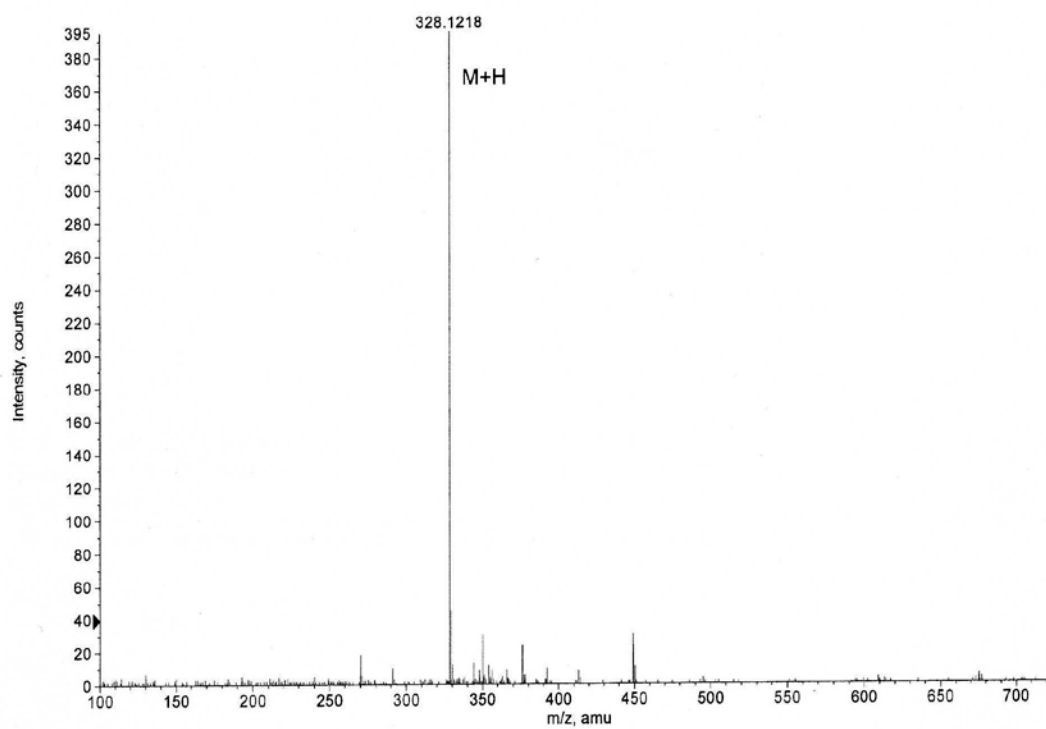
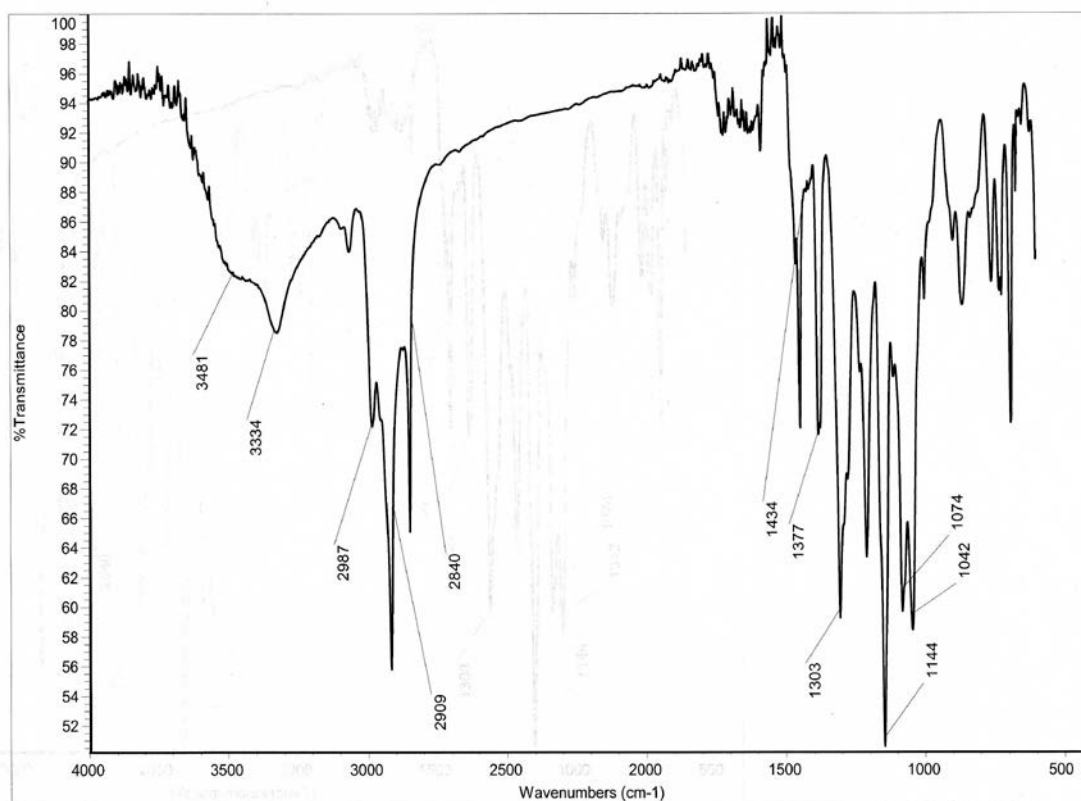
HMQC del compuesto **50**:

HMBC del compuesto **50**:

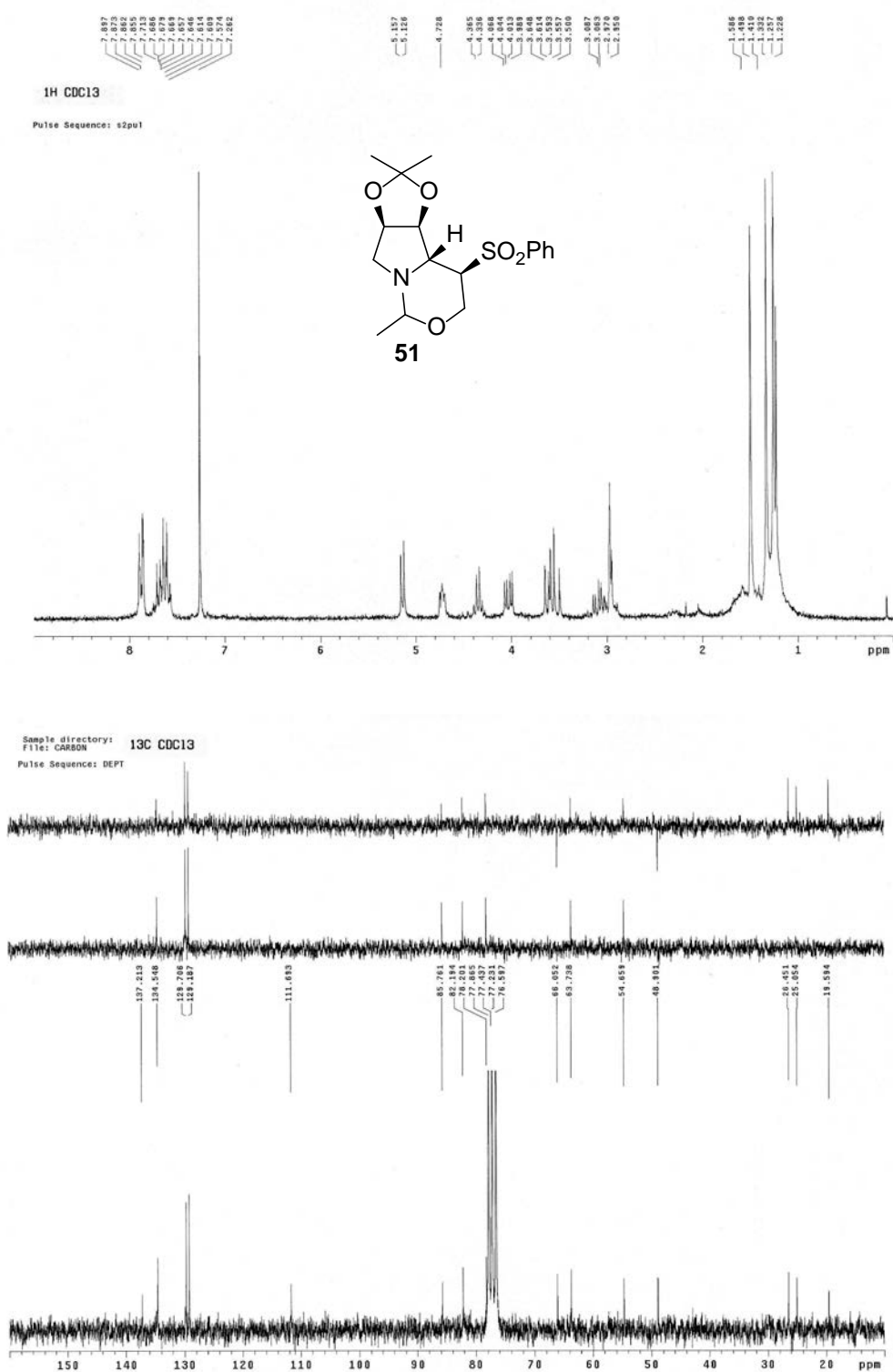
Cosy del compuesto **50**:



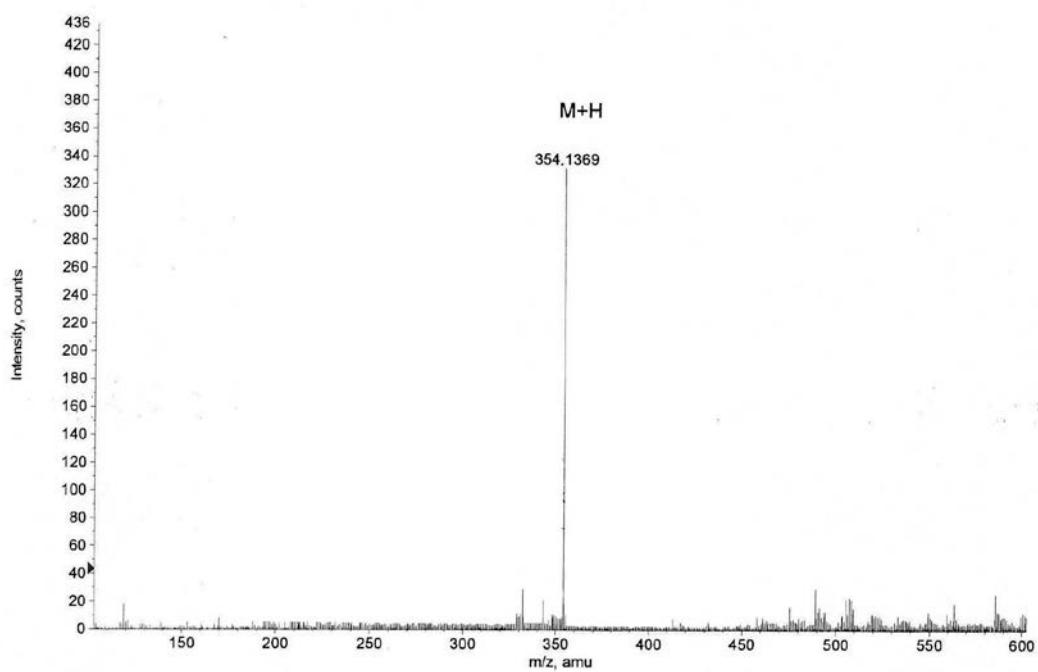
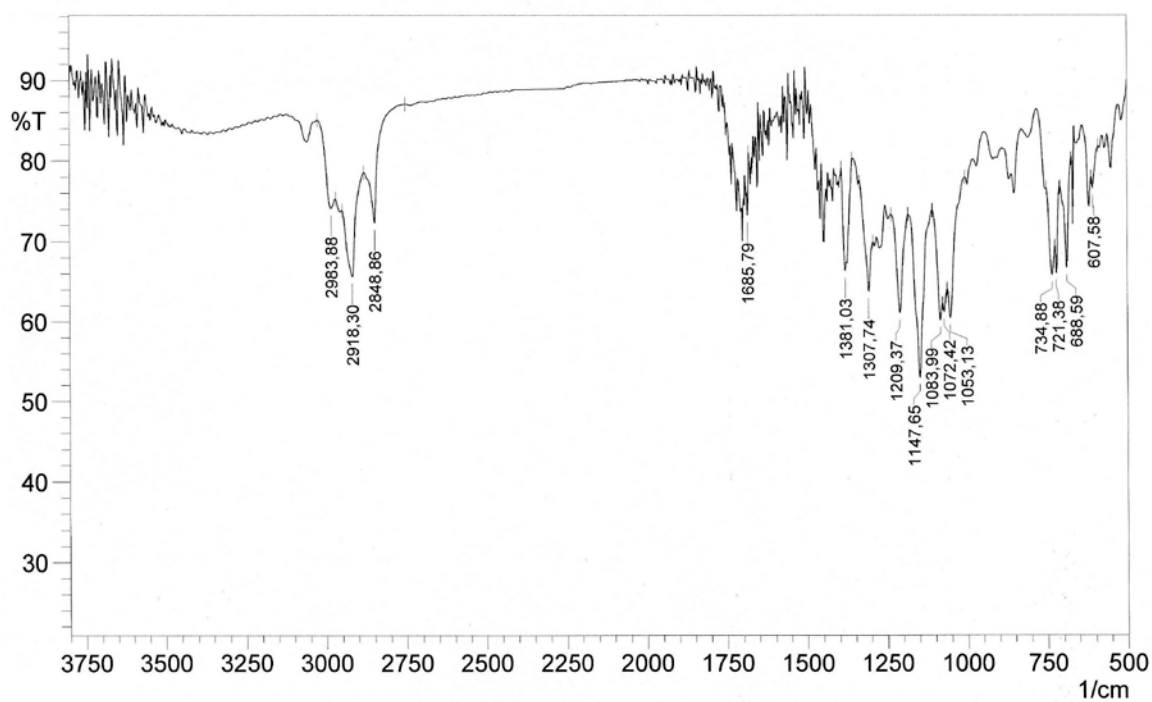
IR y HRMS del compuesto **50**:



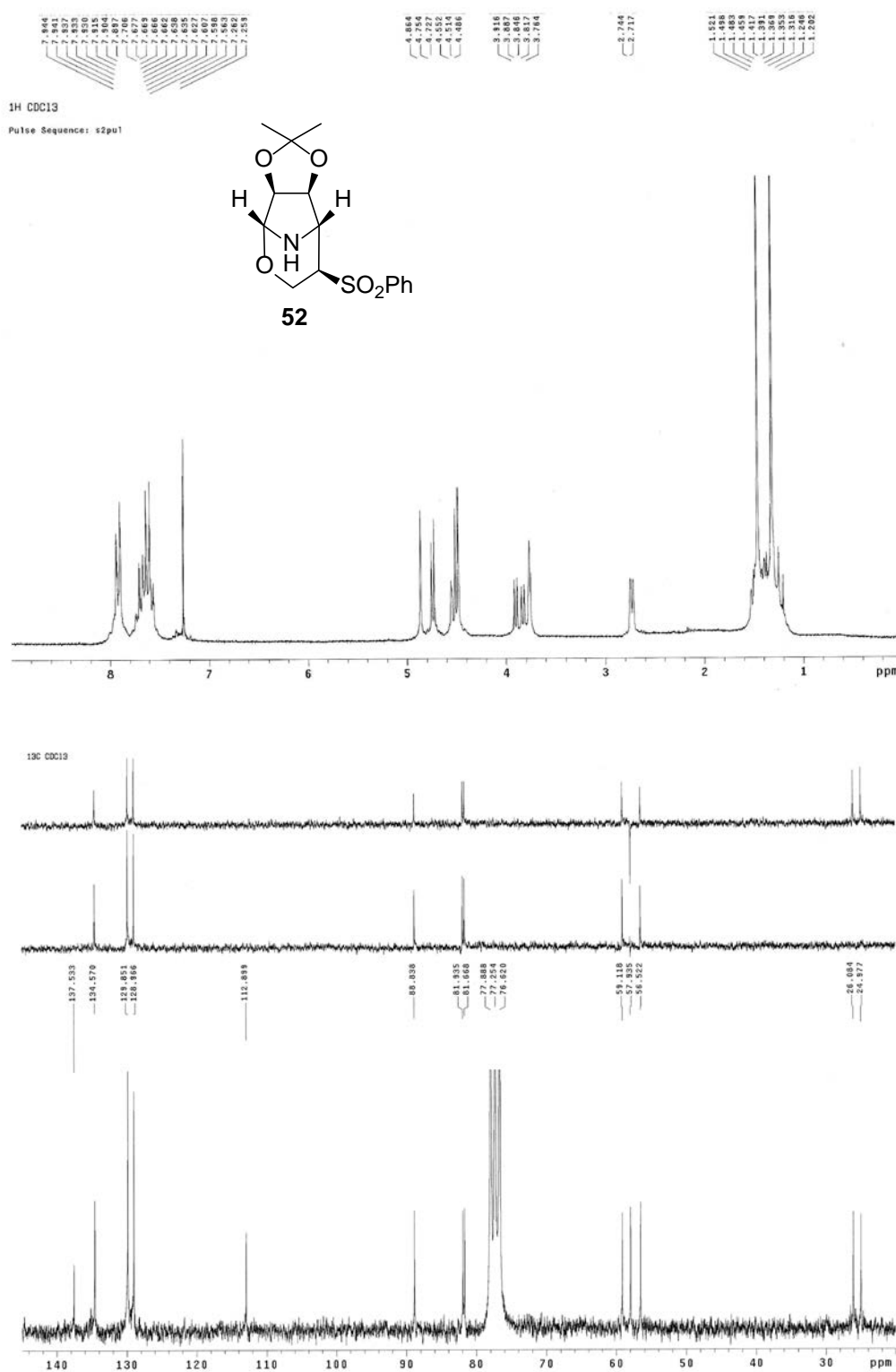
^1H y ^{13}C del compuesto **51**:



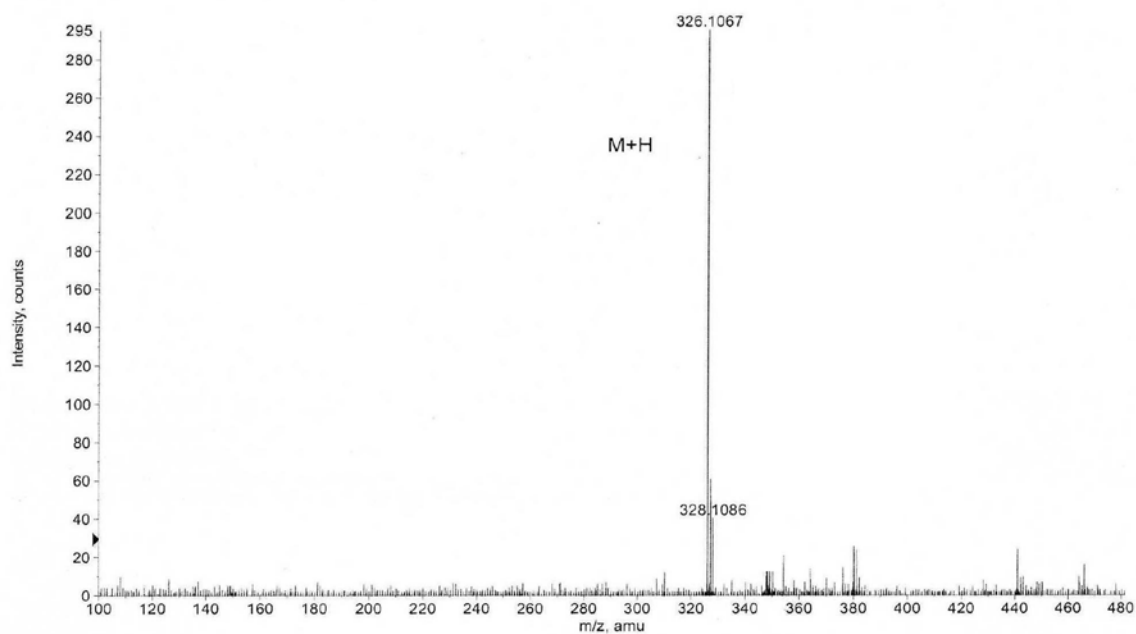
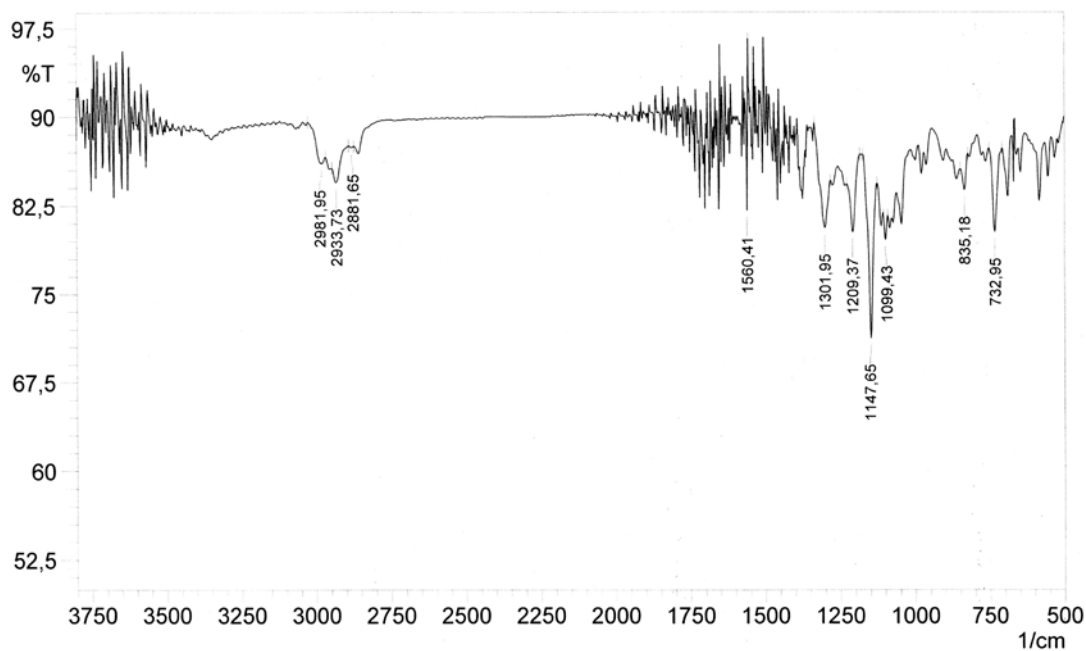
IR y HRMS del compuesto **51**:



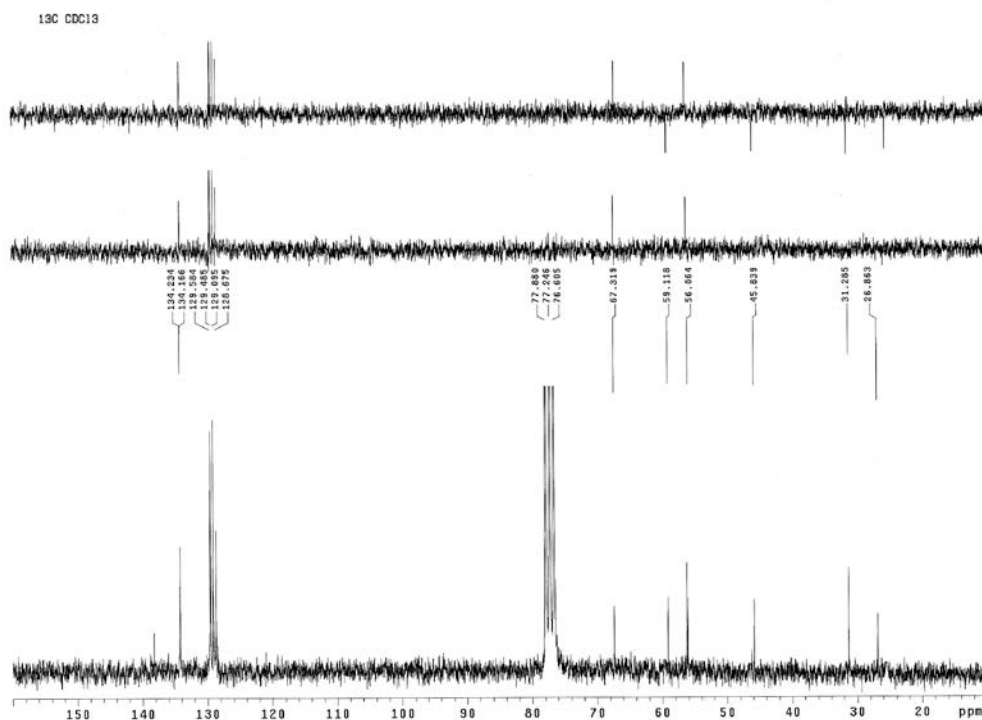
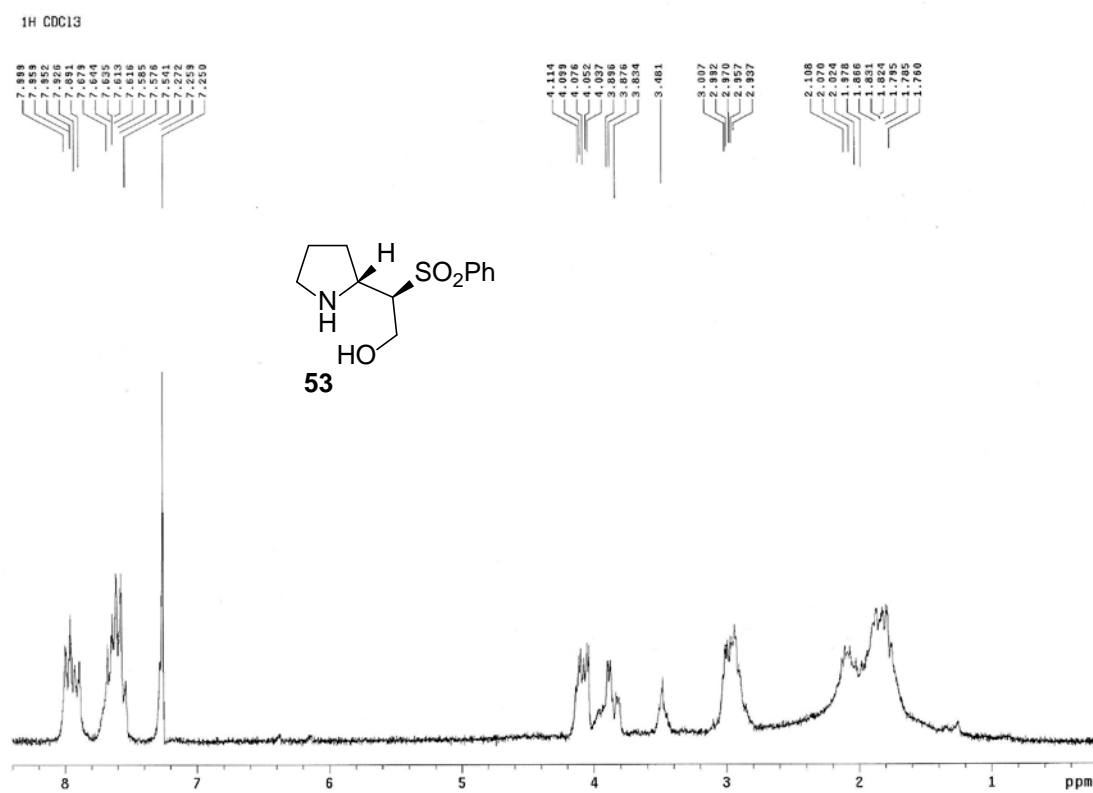
^1H y ^{13}C del compuesto **52**:



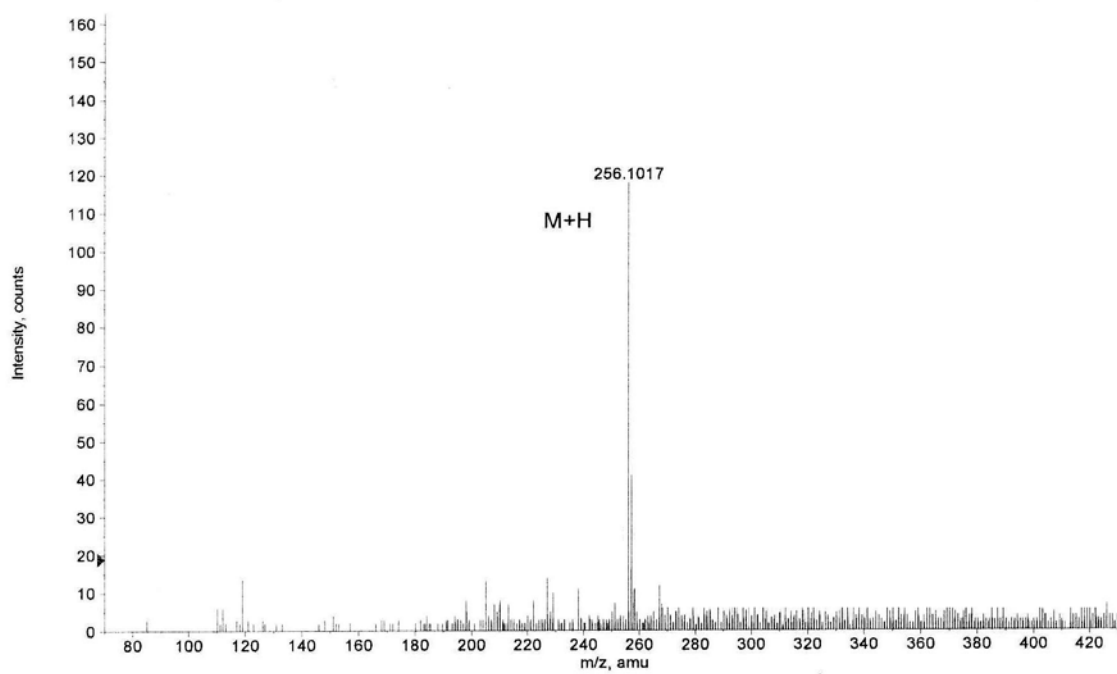
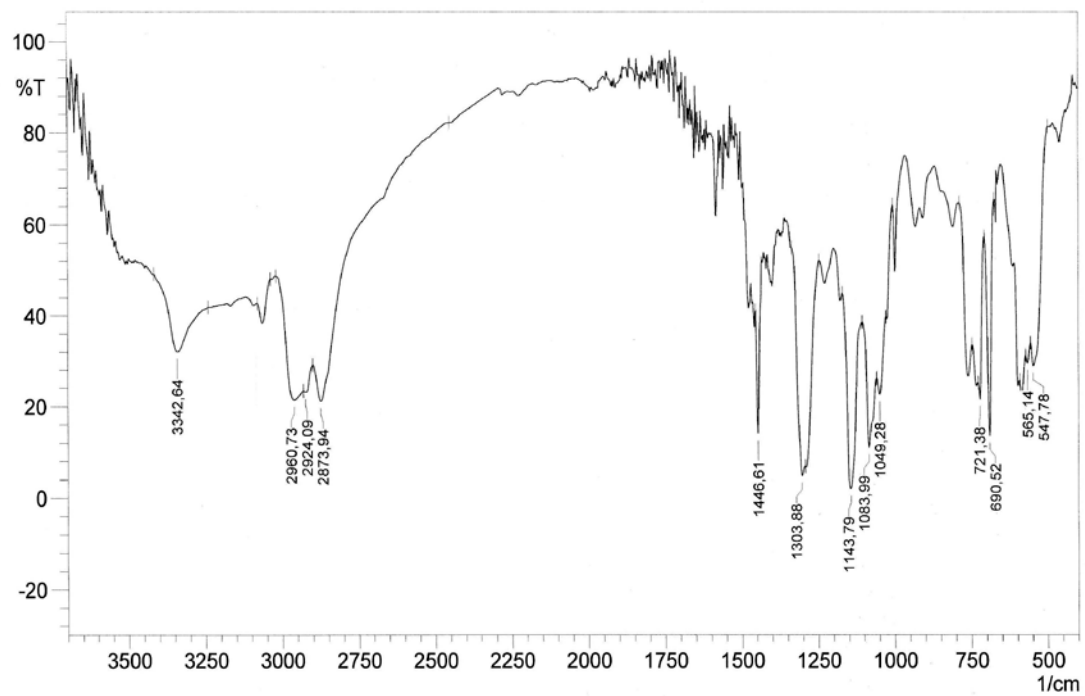
IR y HRMS del compuesto **52**:

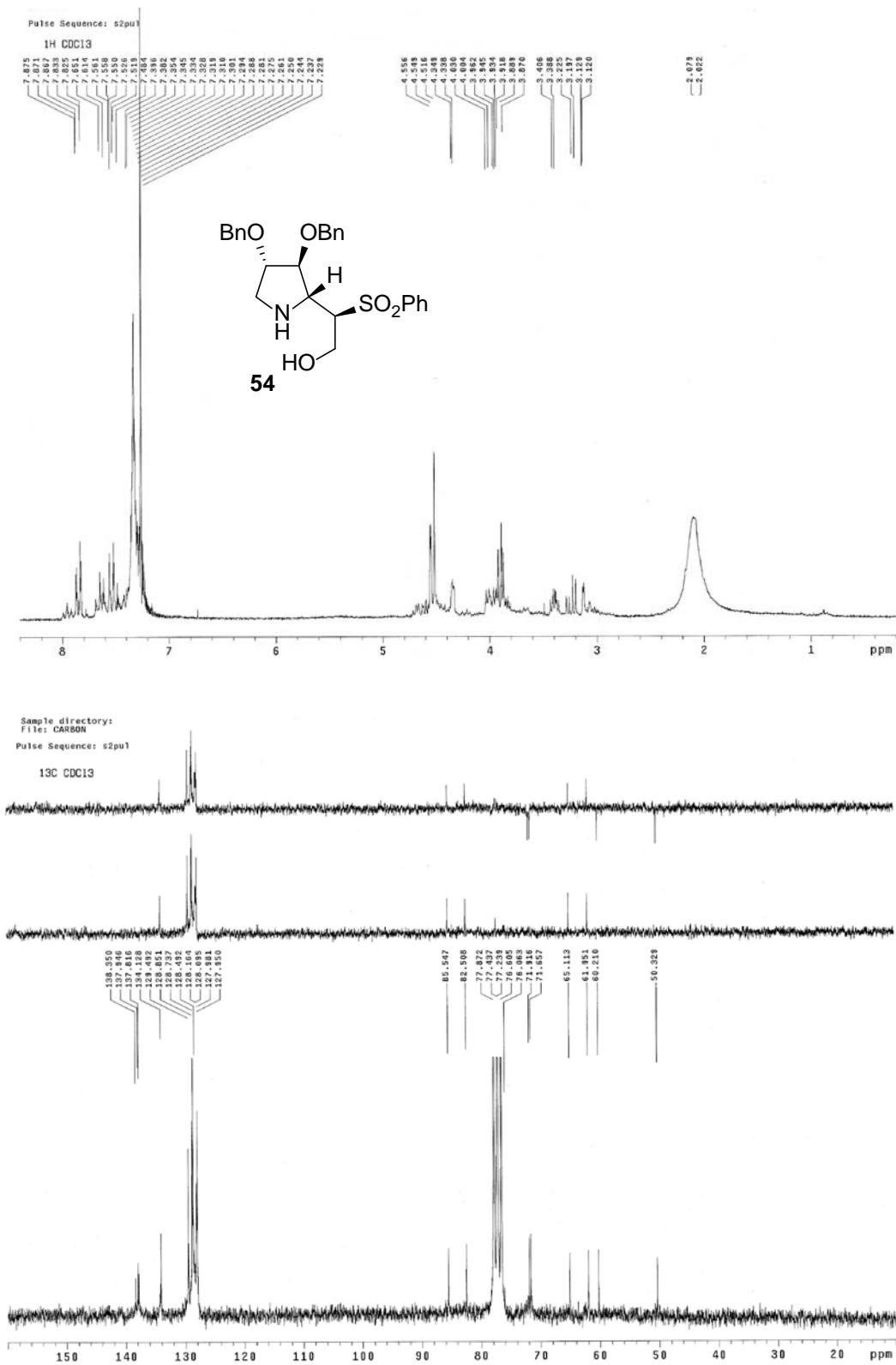


^1H y ^{13}C del compuesto **53**:

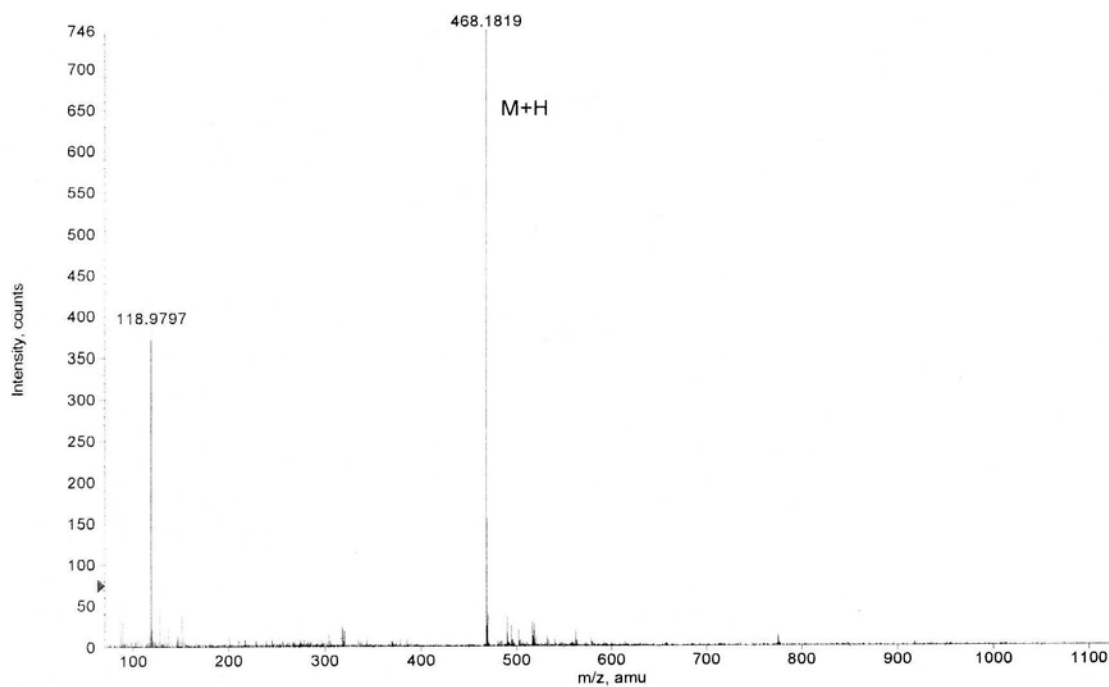
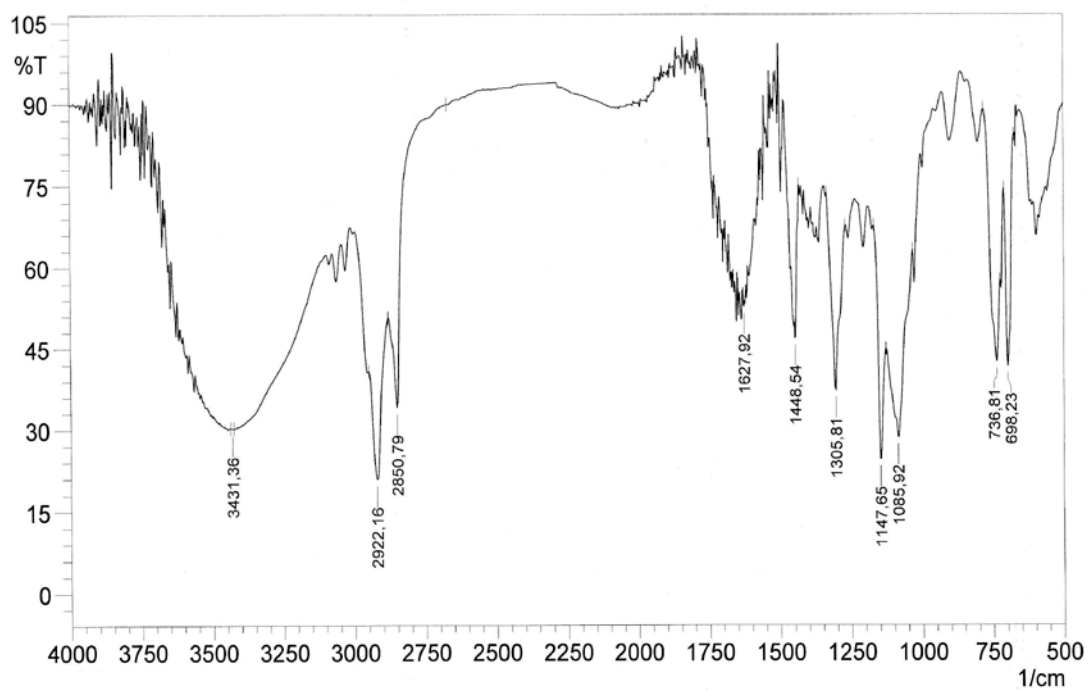


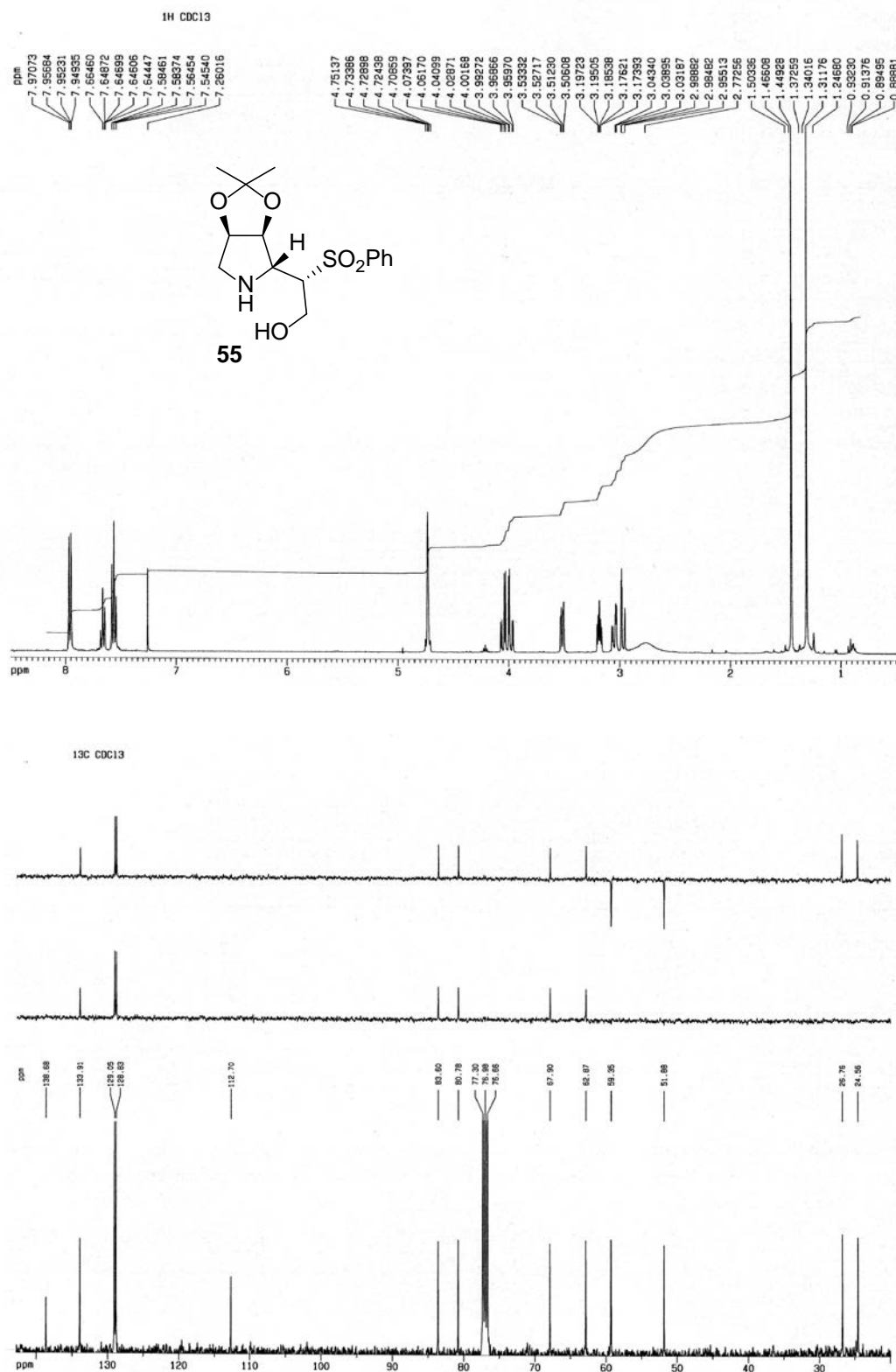
IR y HRMS del compuesto **53**:

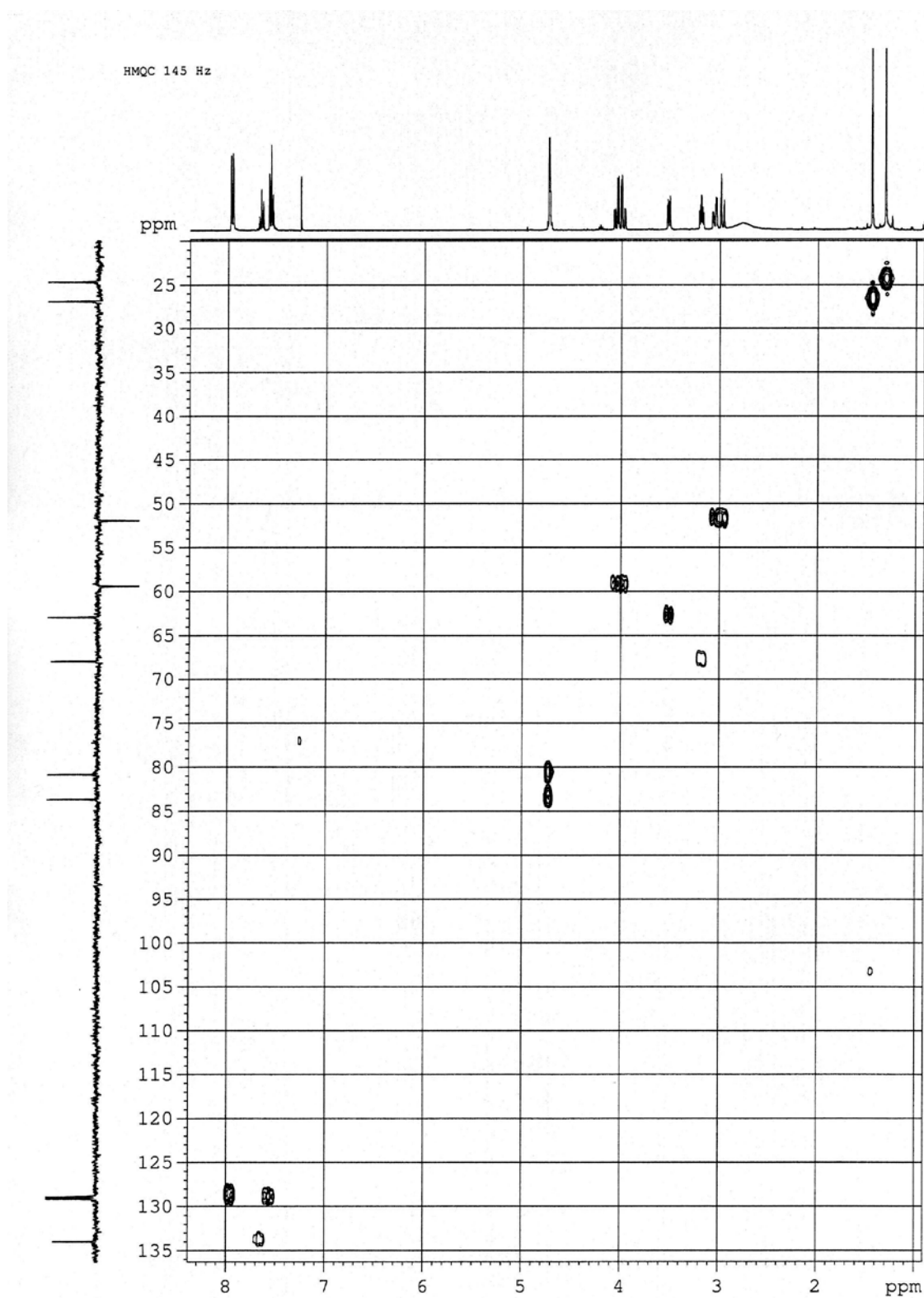


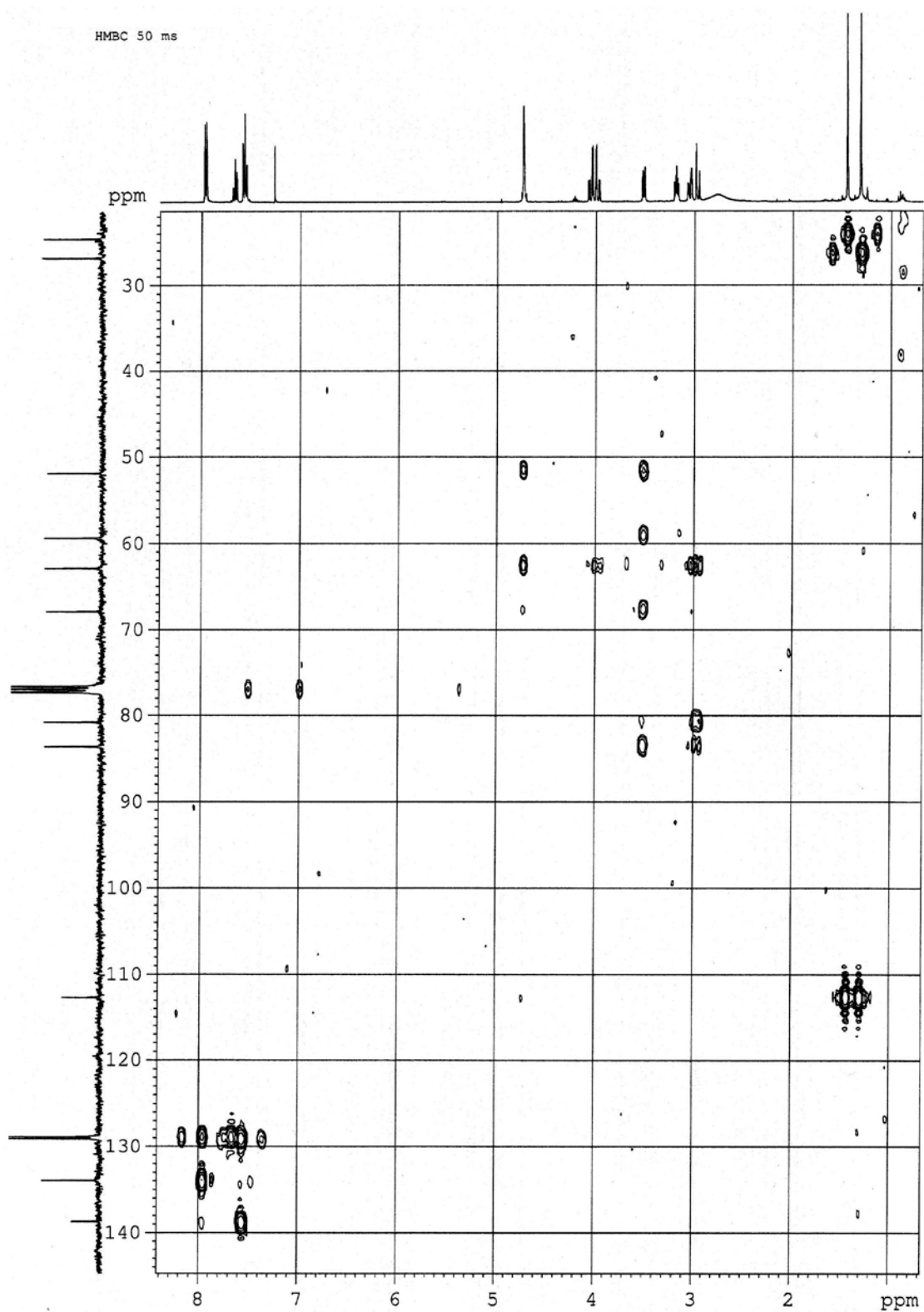
^1H y ^{13}C del compuesto **54**:

IR y HRMS del compuesto **54**:

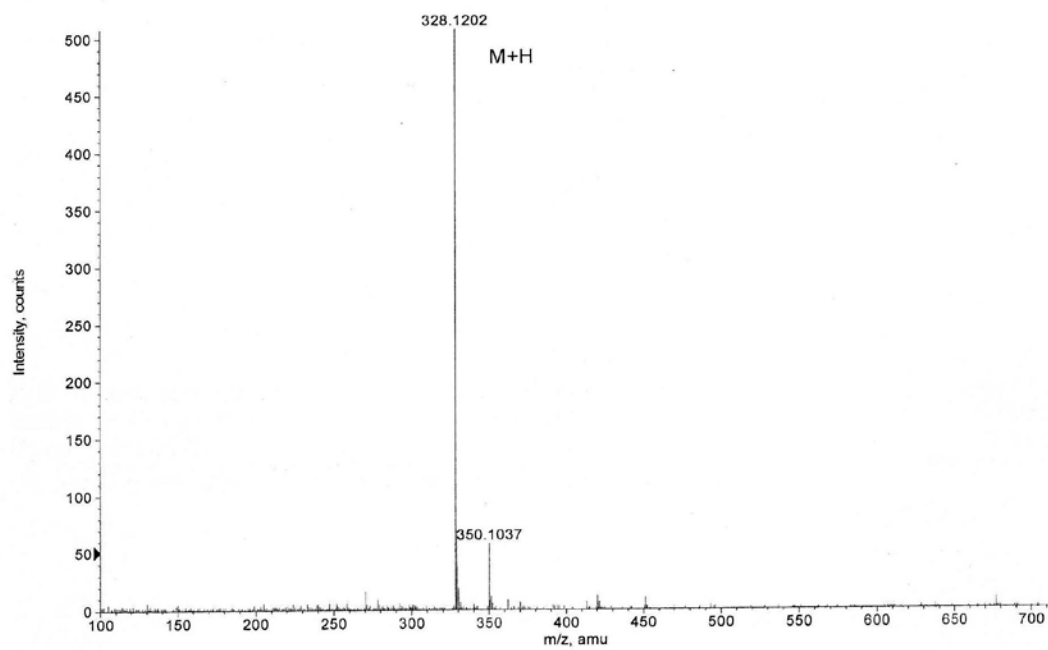
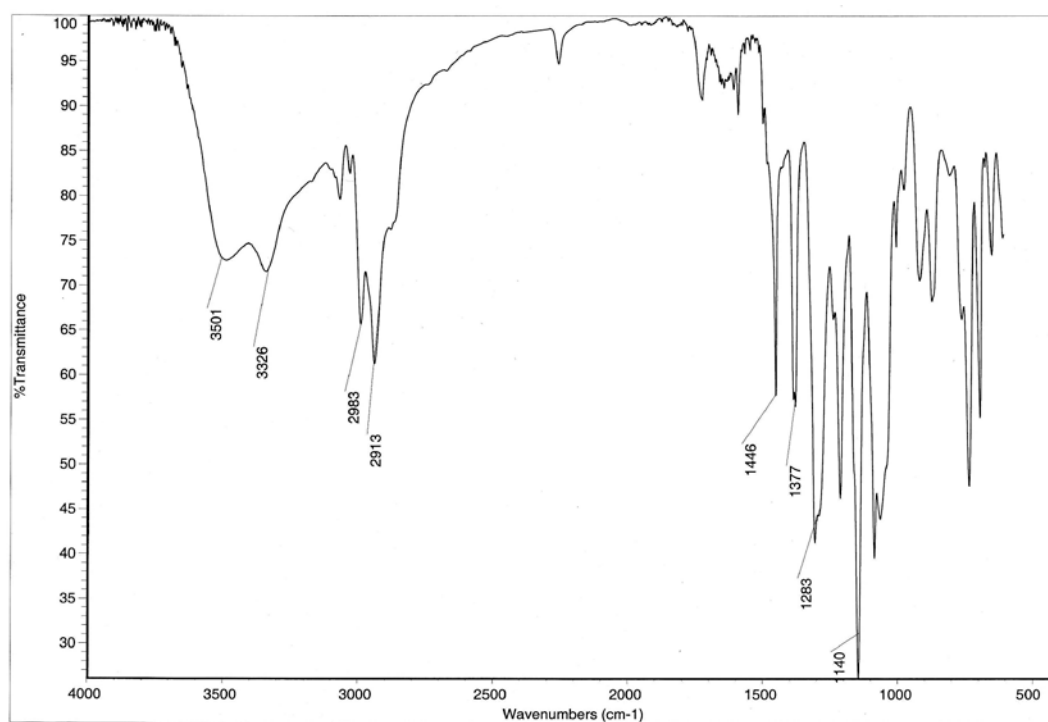


^1H y ^{13}C del compuesto **55**:

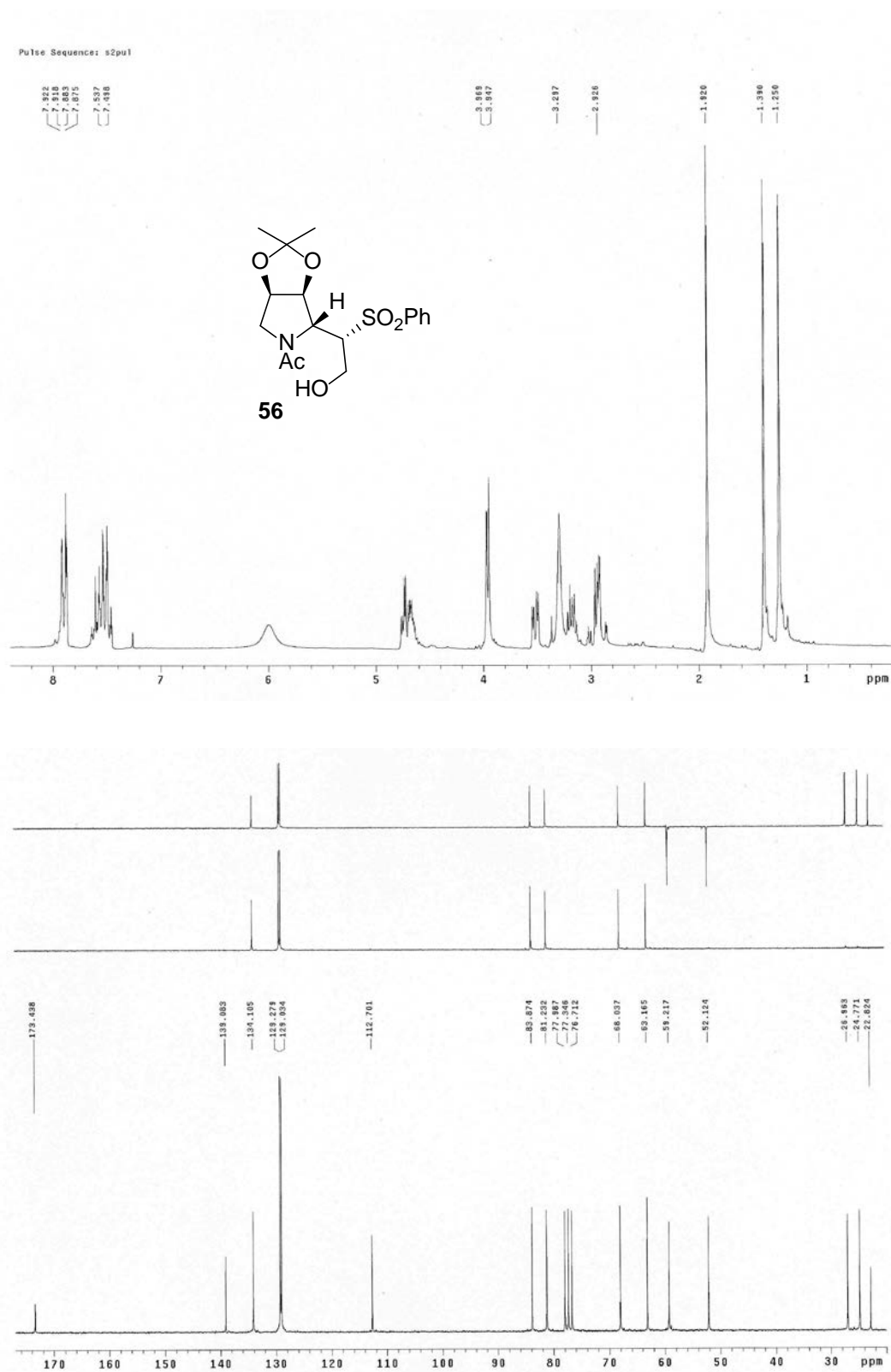
HMQC del compuesto **55**:

HMBC del compuesto **55**:

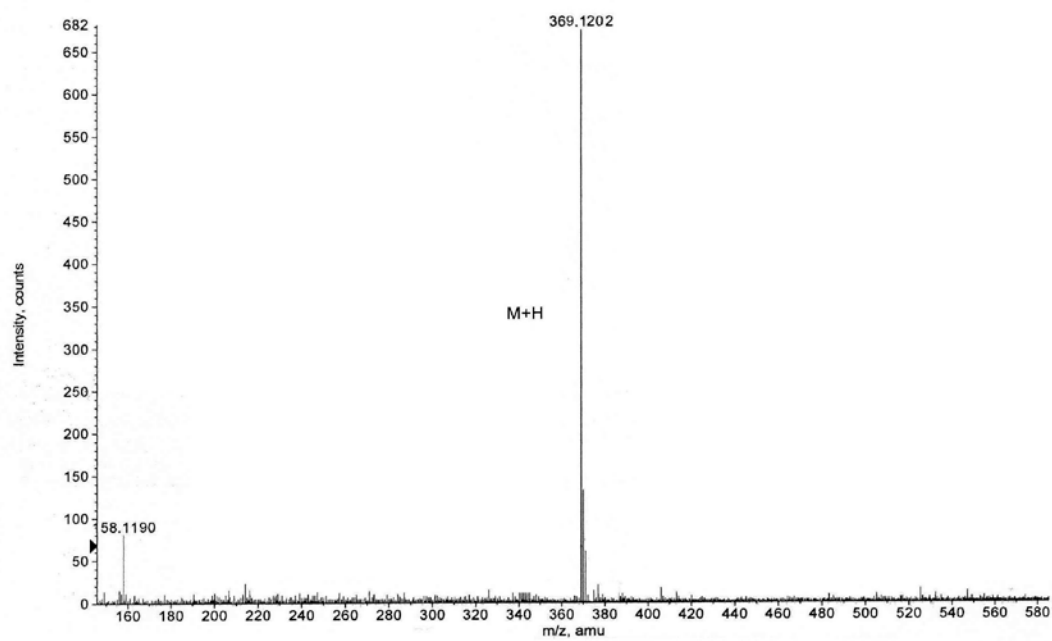
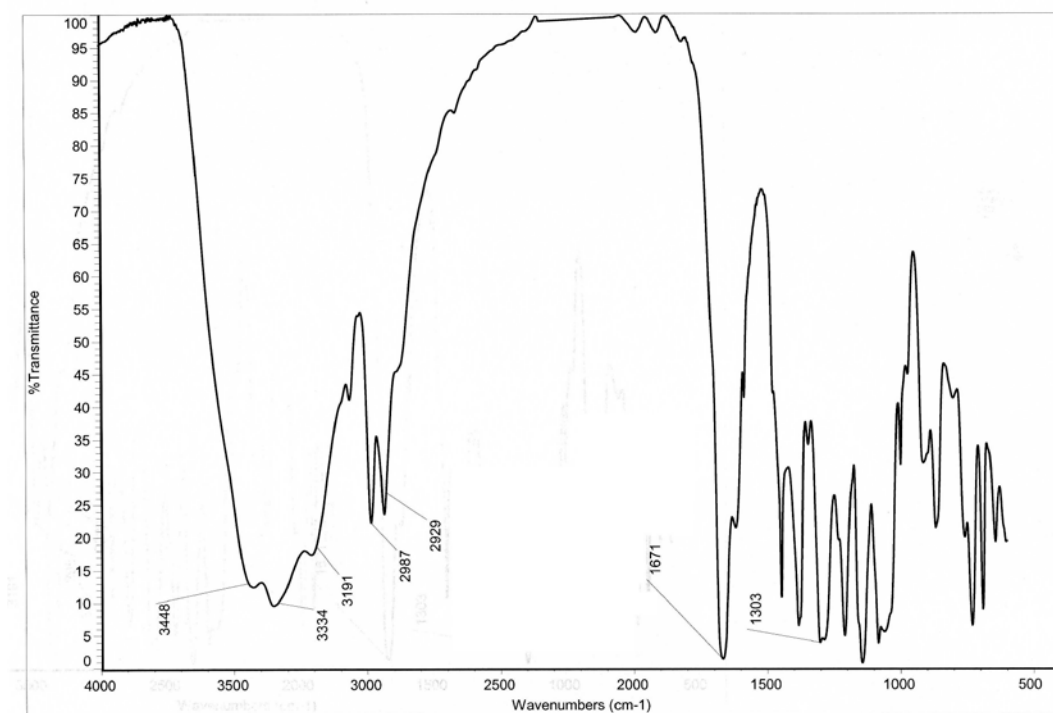
IR y HRMS del compuesto **55**:



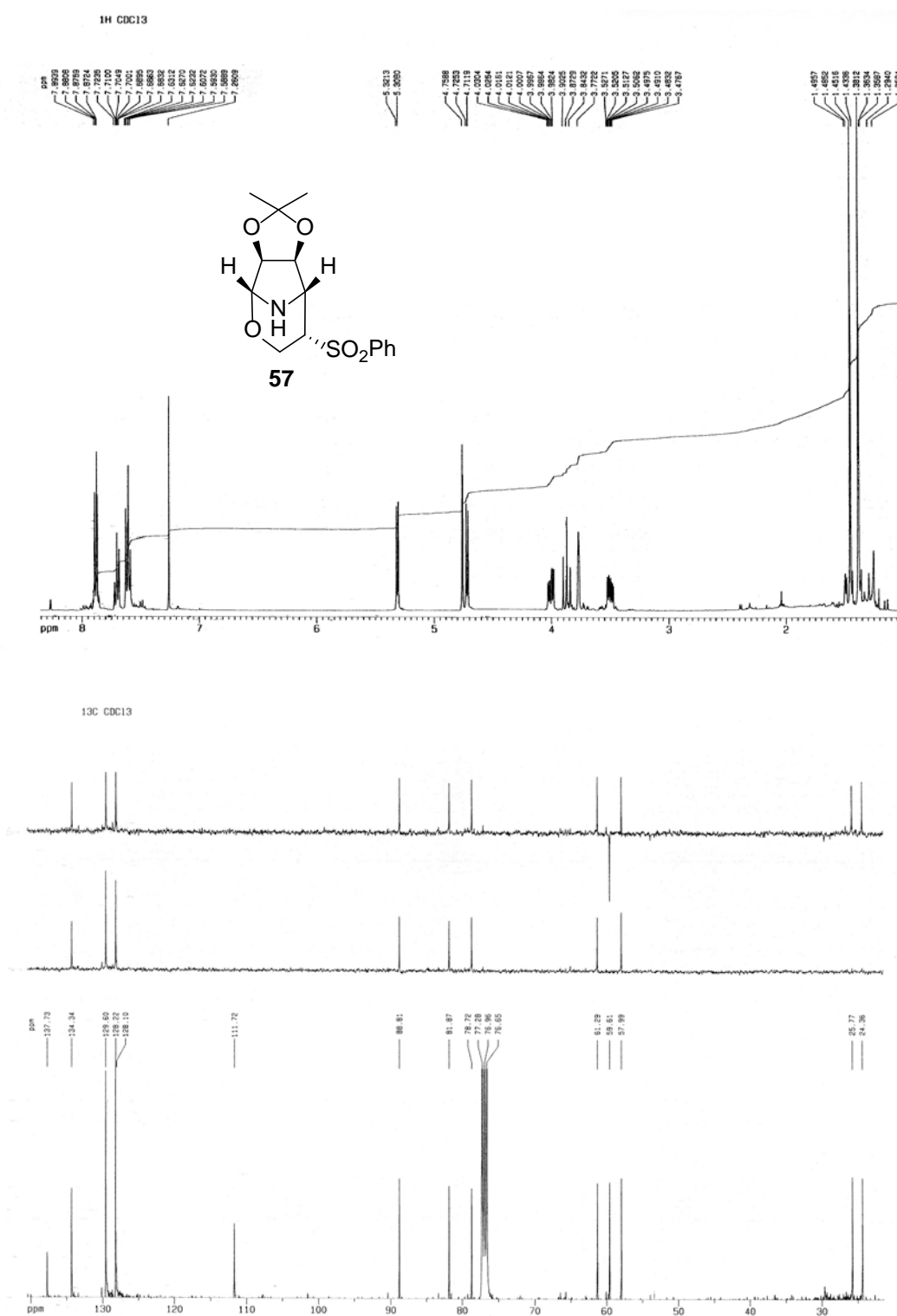
^1H y ^{13}C del compuesto **56**:

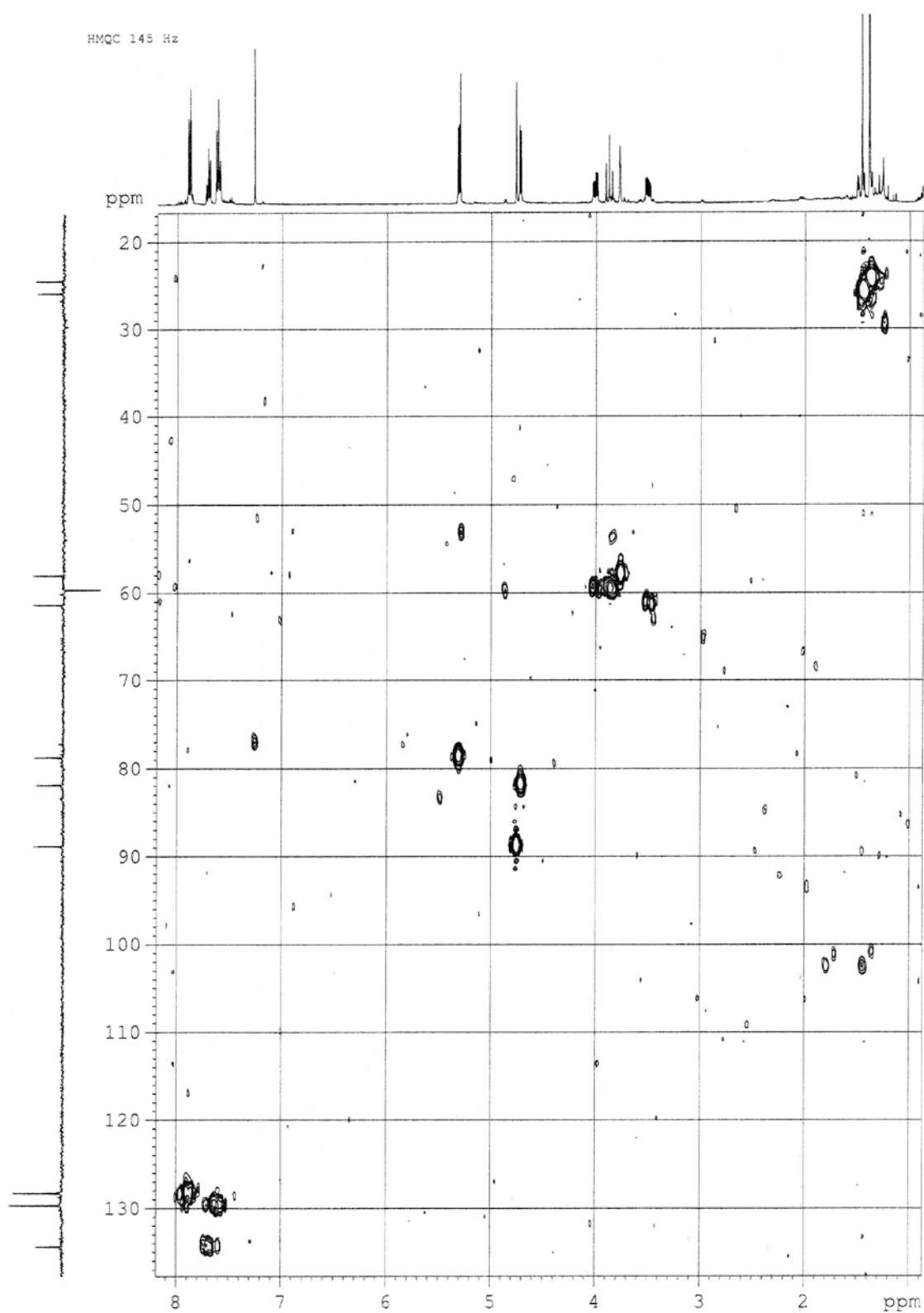


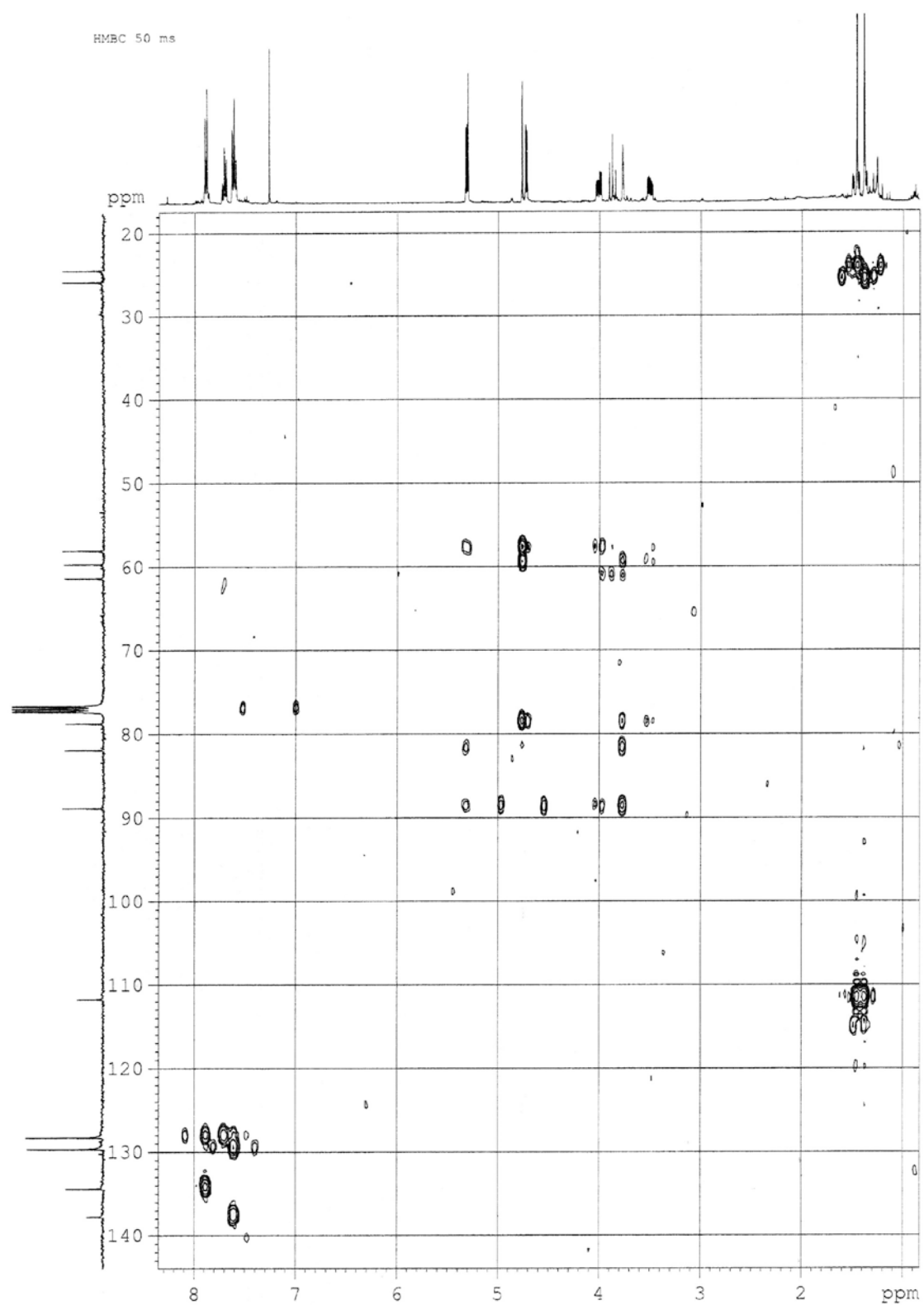
IR y HRMS del compuesto **56**:



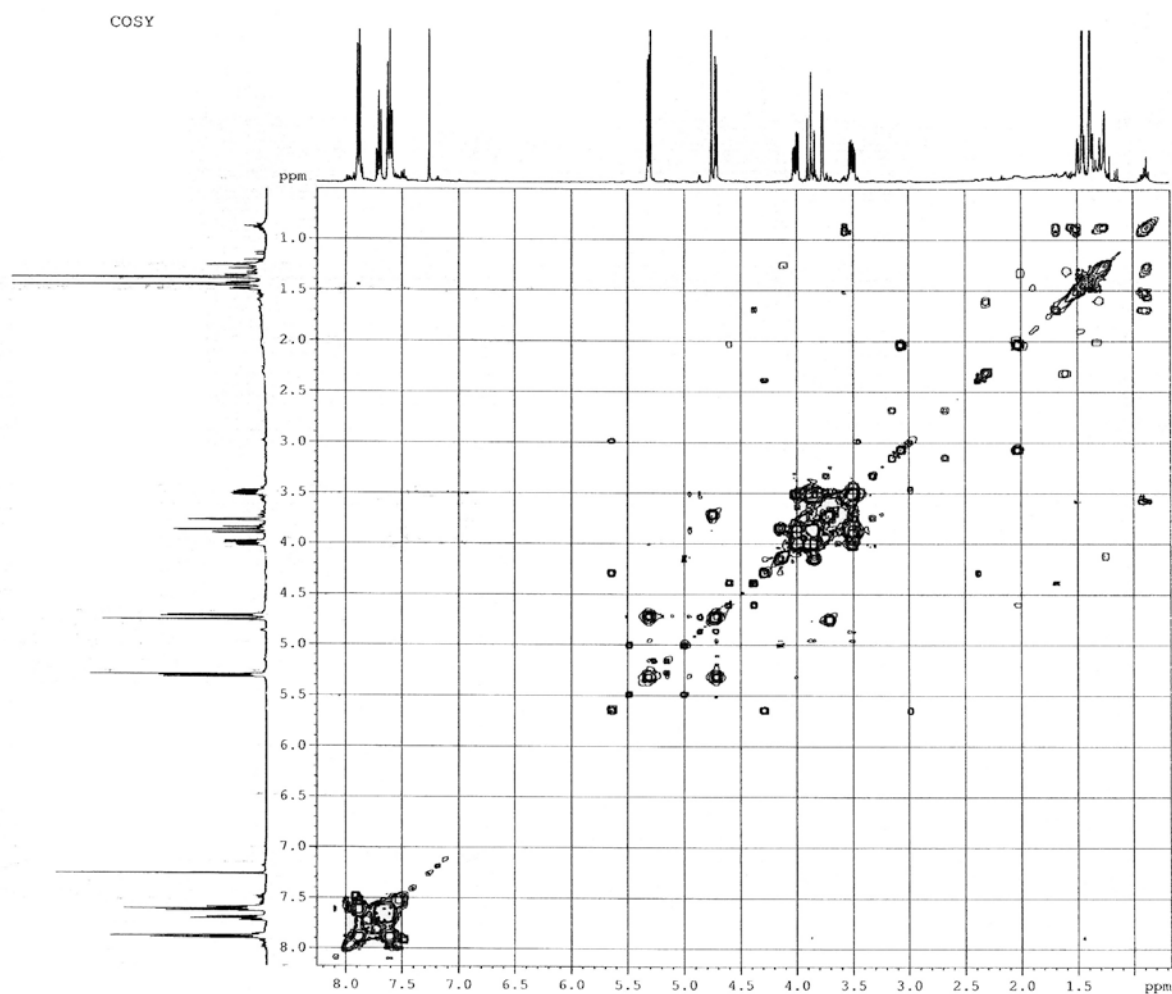
^1H y ^{13}C del compuesto **57**:



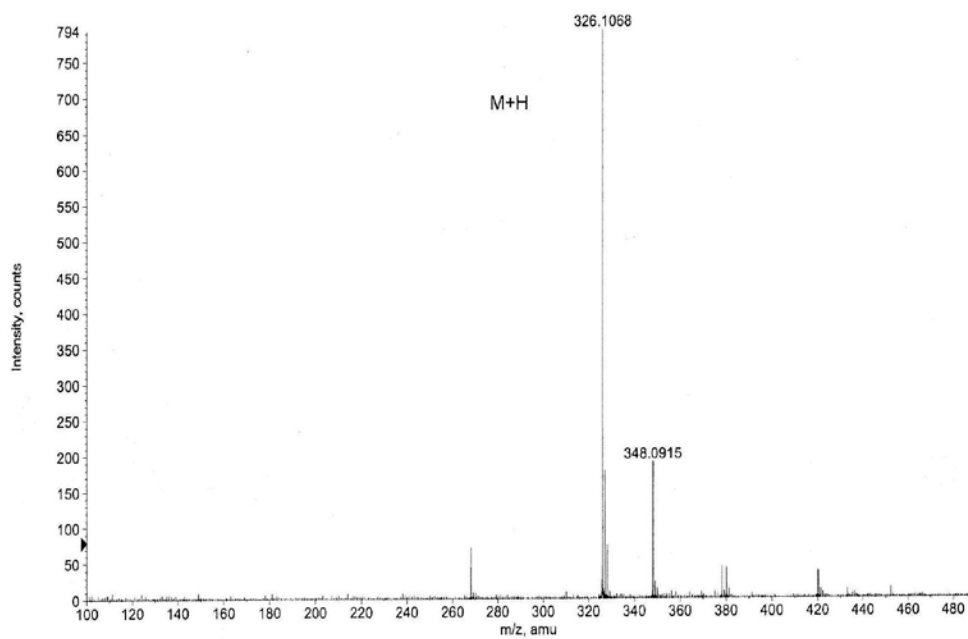
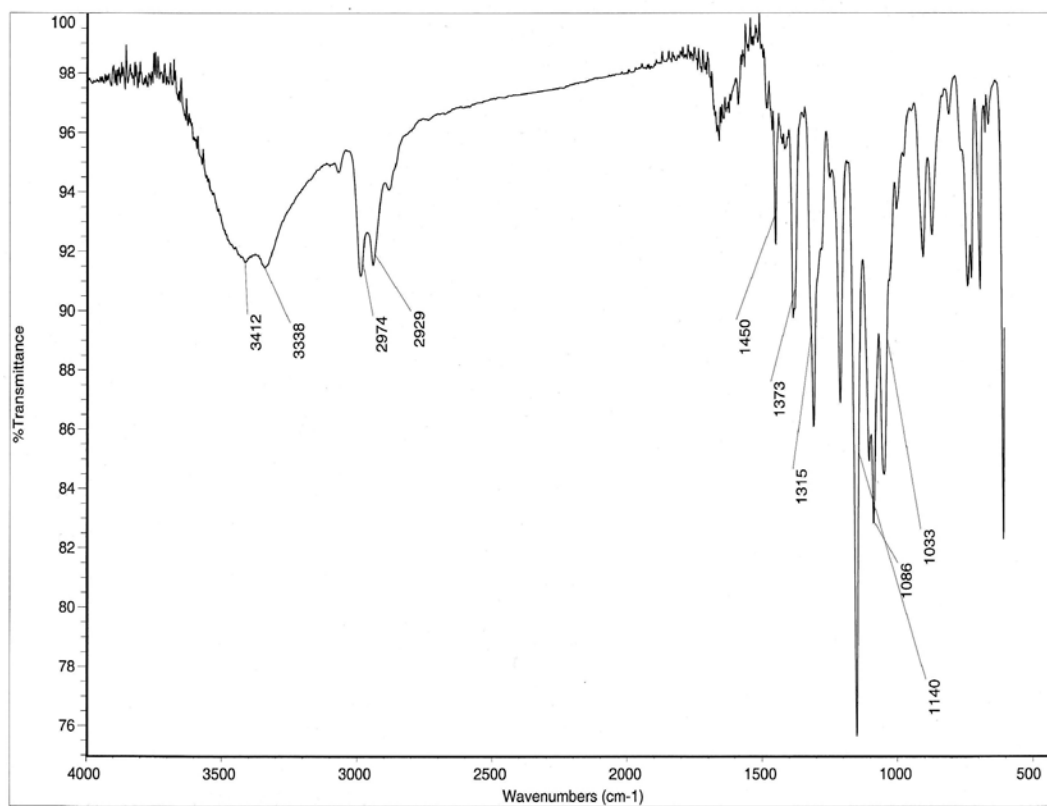
HMQC del compuesto **57**:

HMBC del compuesto **57**:

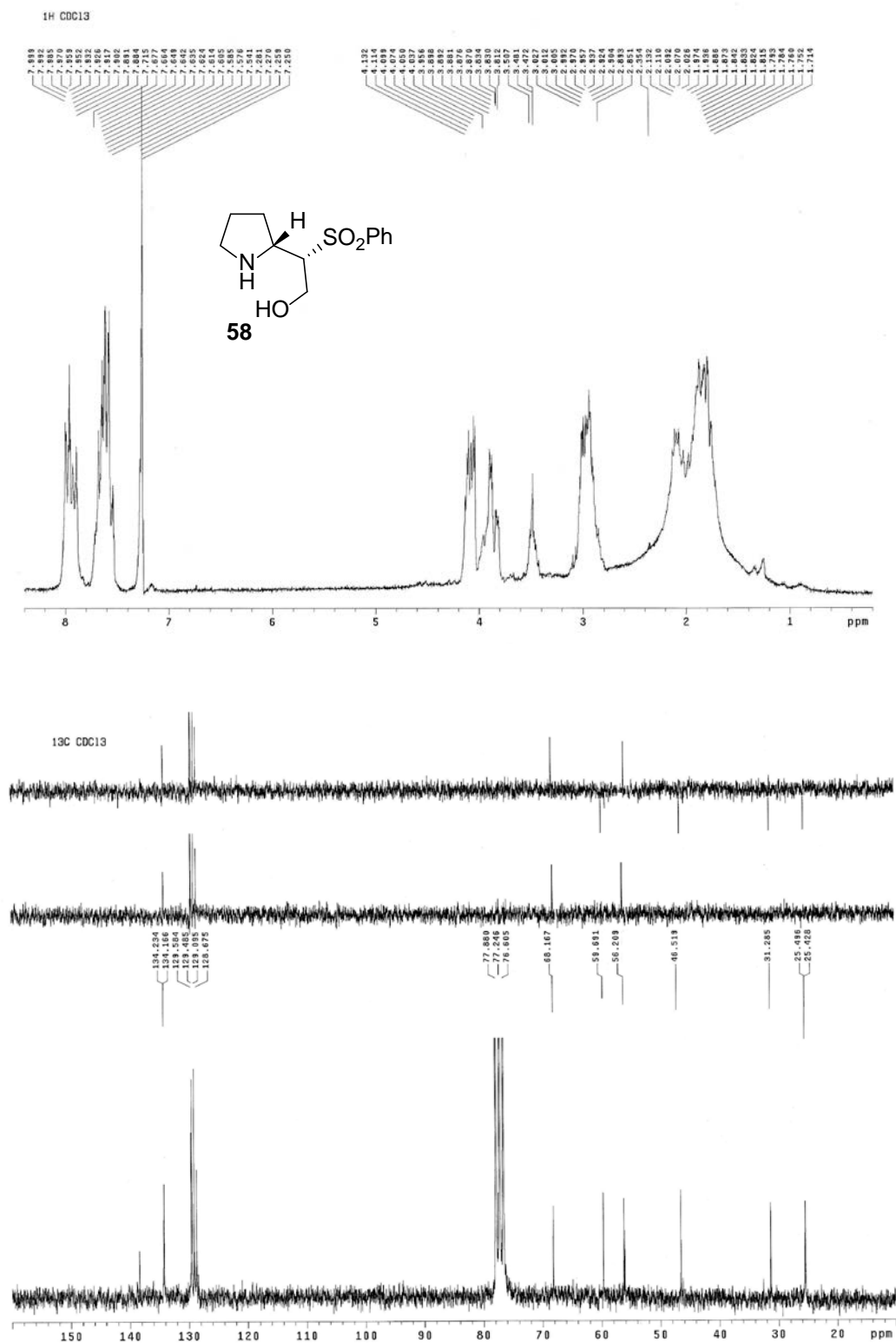
Cosy del compuesto **57**:



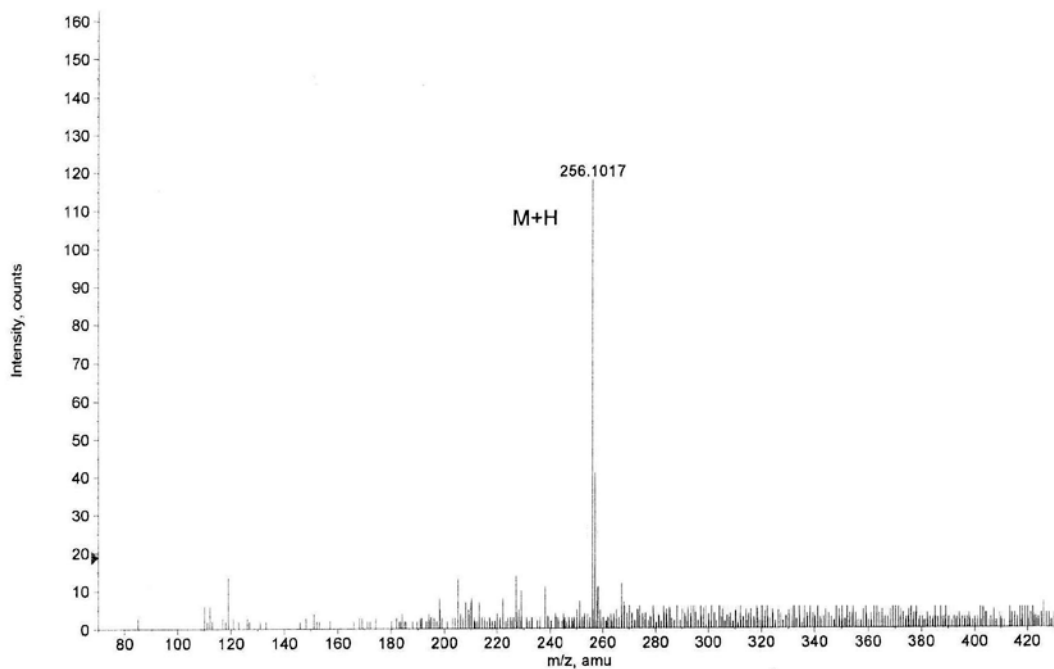
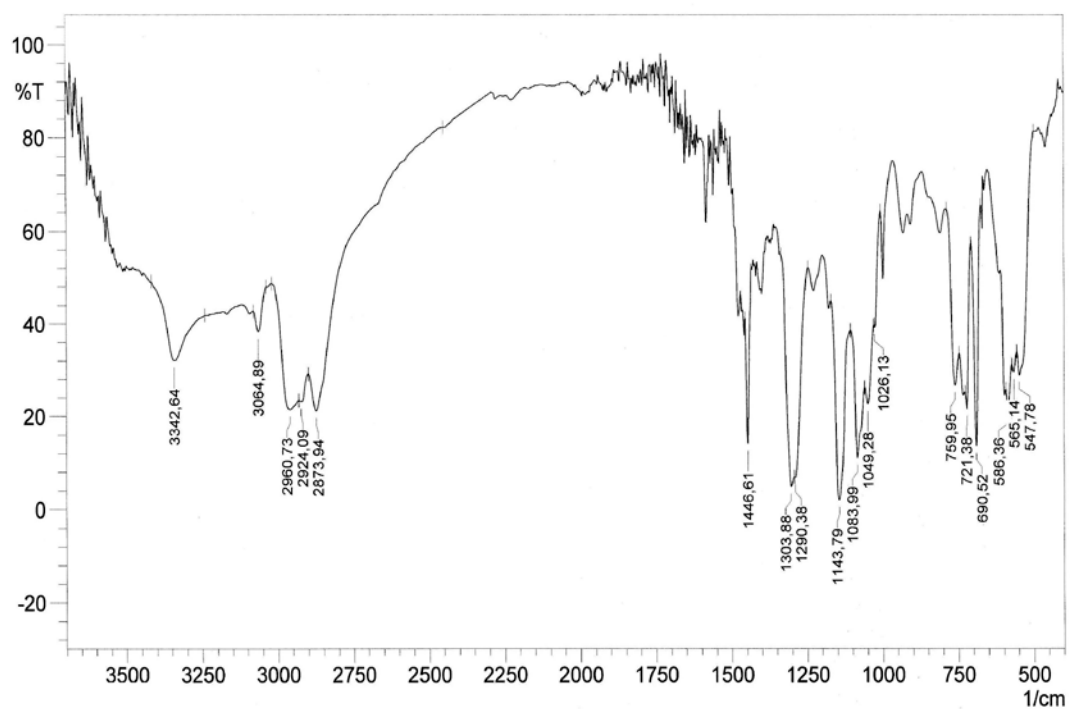
IR y HRMS del compuesto **57**:



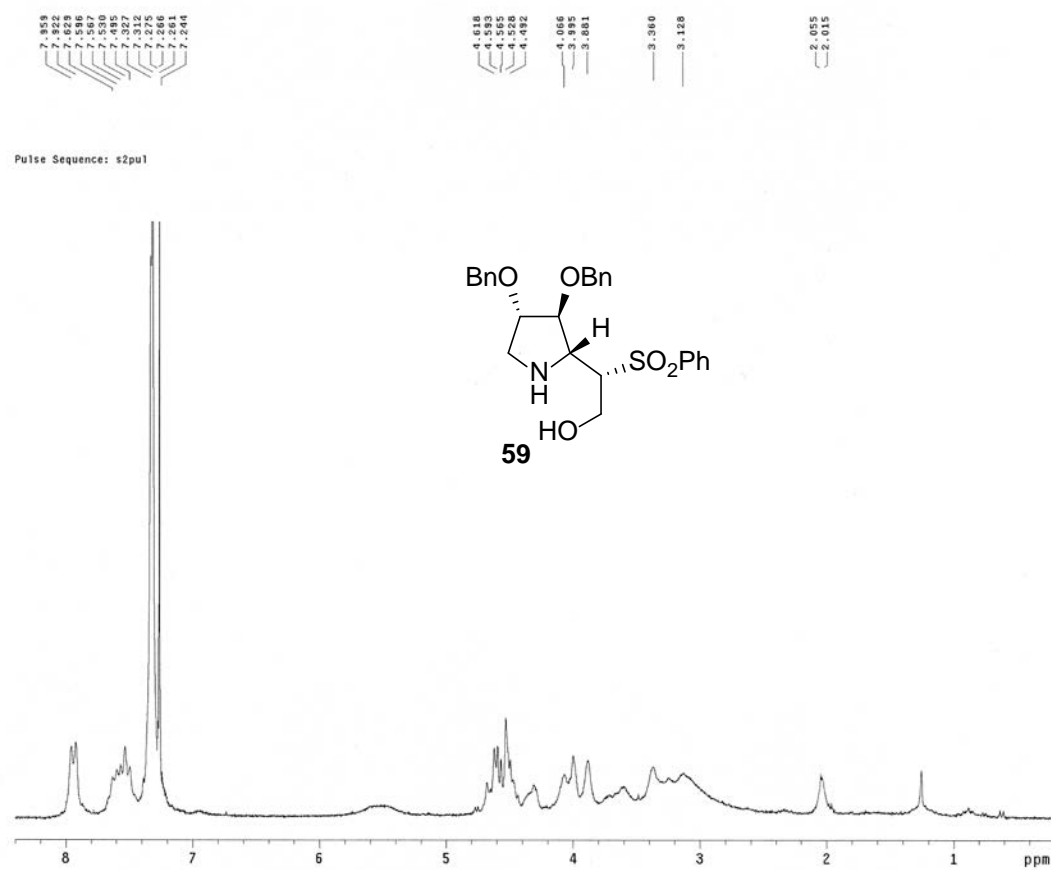
^1H y ^{13}C del compuesto **58**:



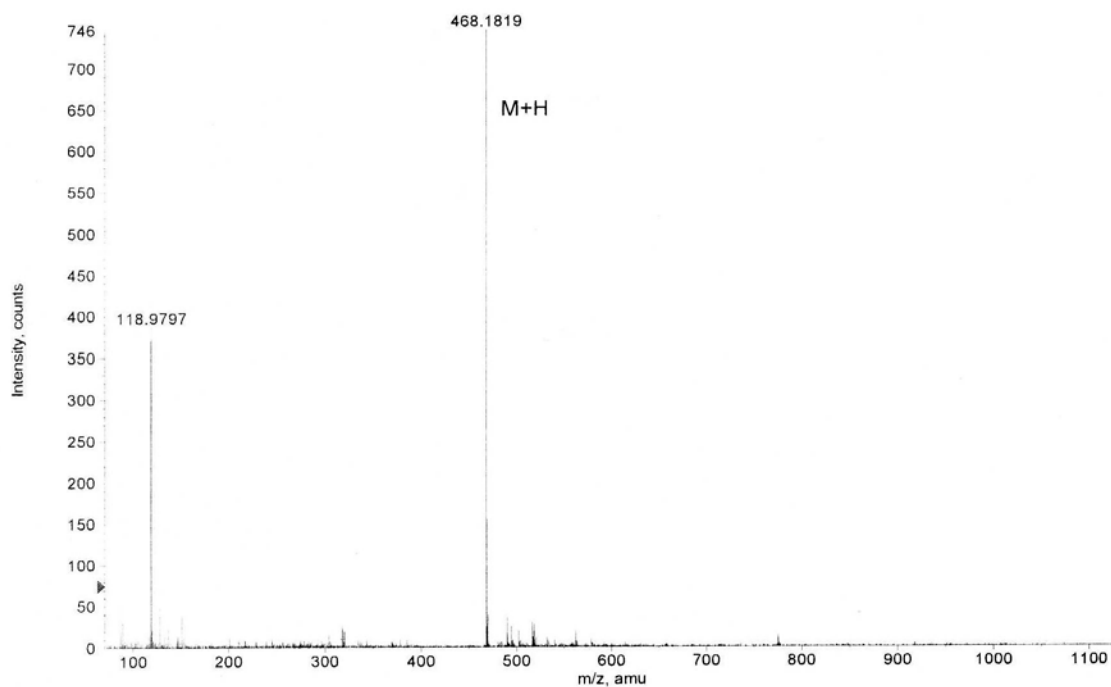
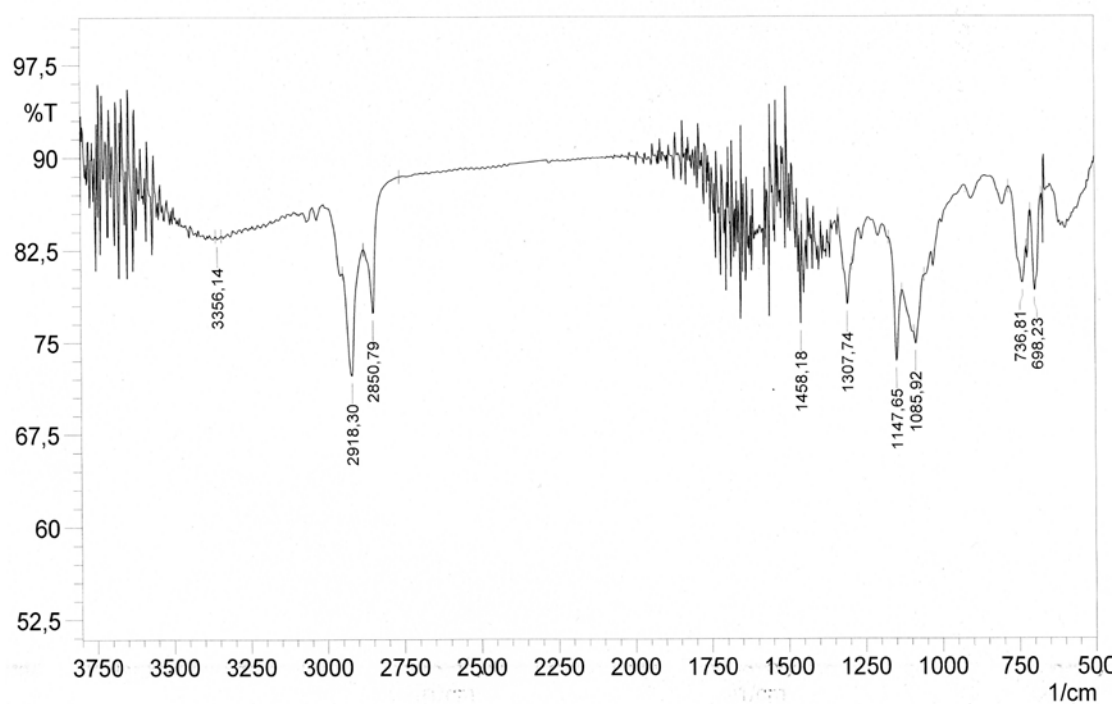
IR y HRMS del compuesto **58**:



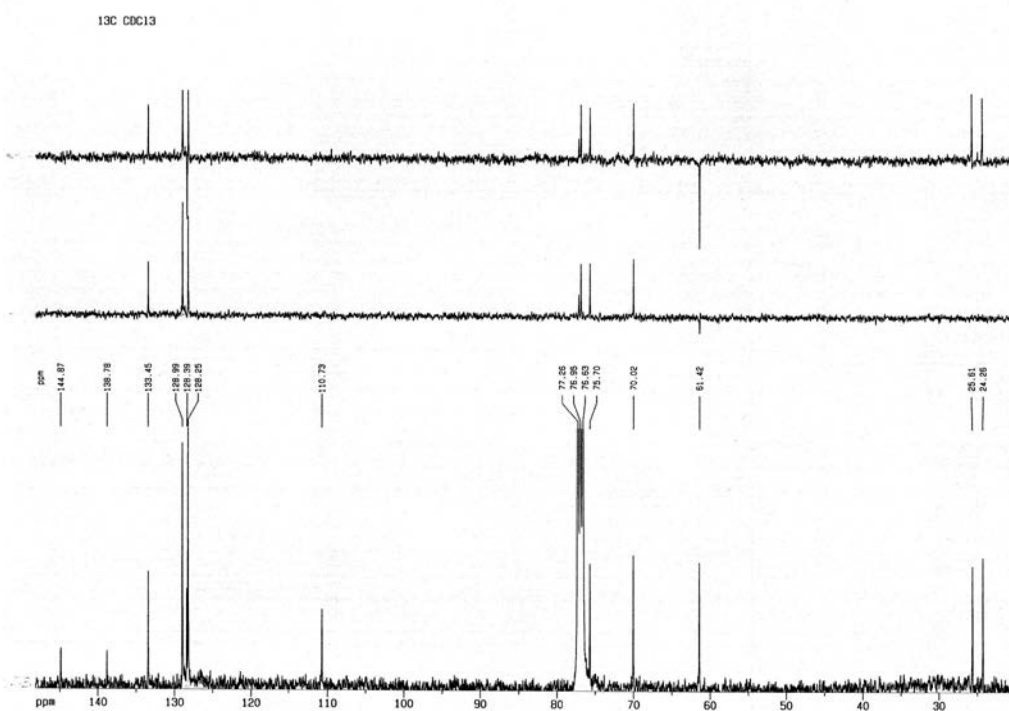
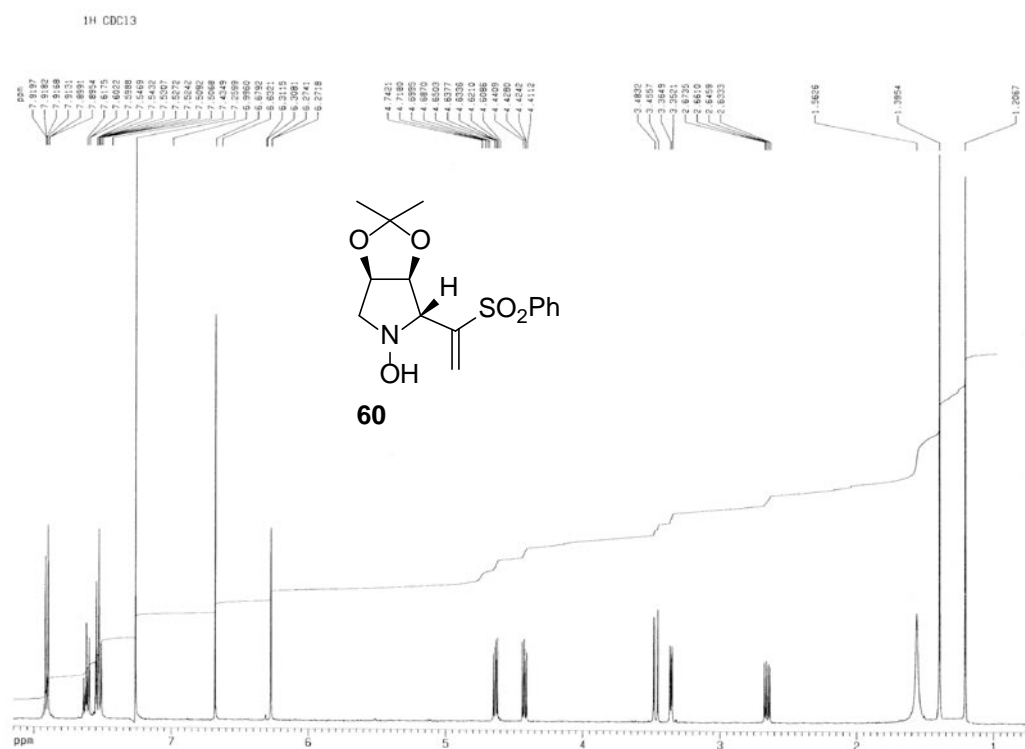
^1H del compuesto **59**:

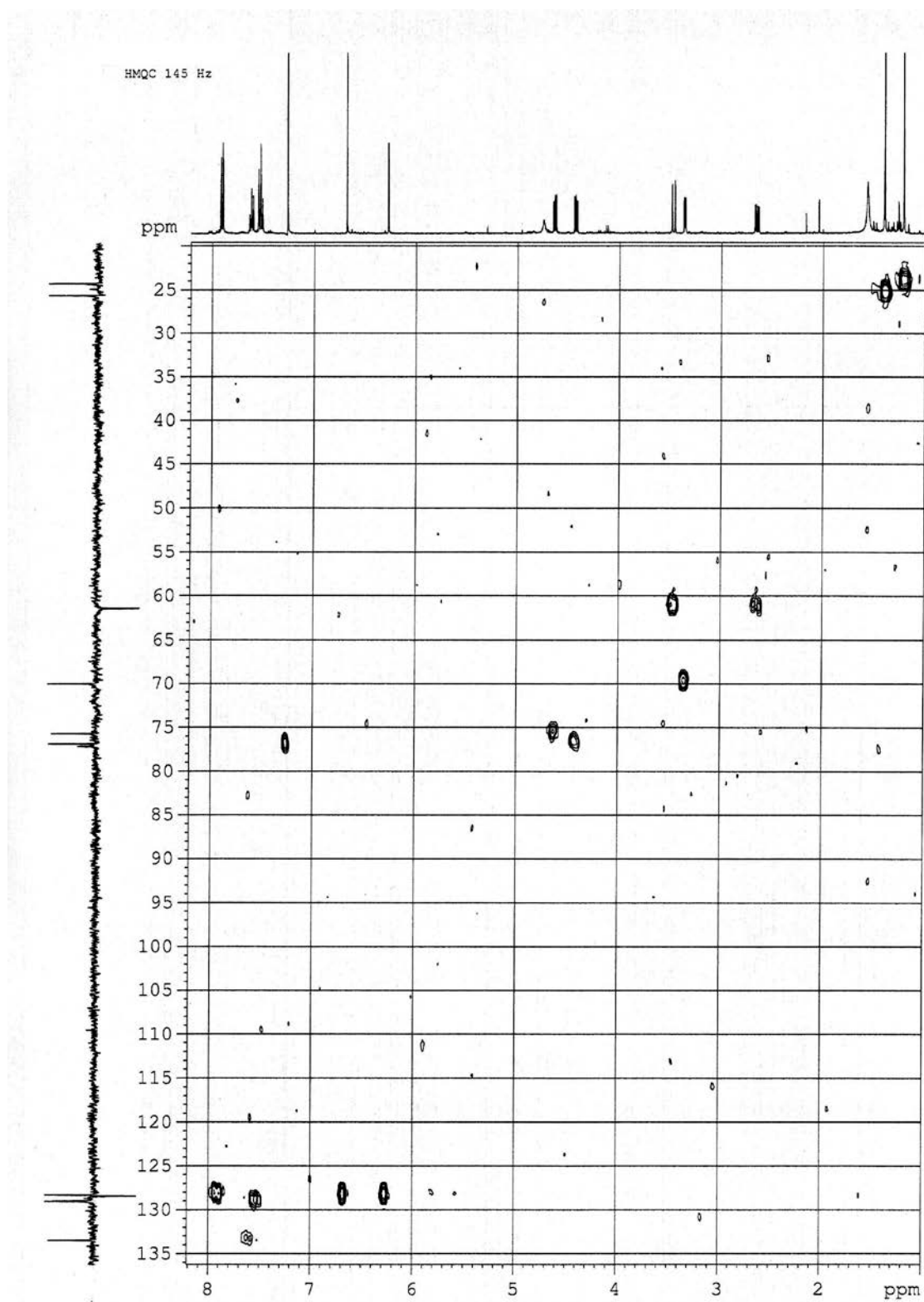


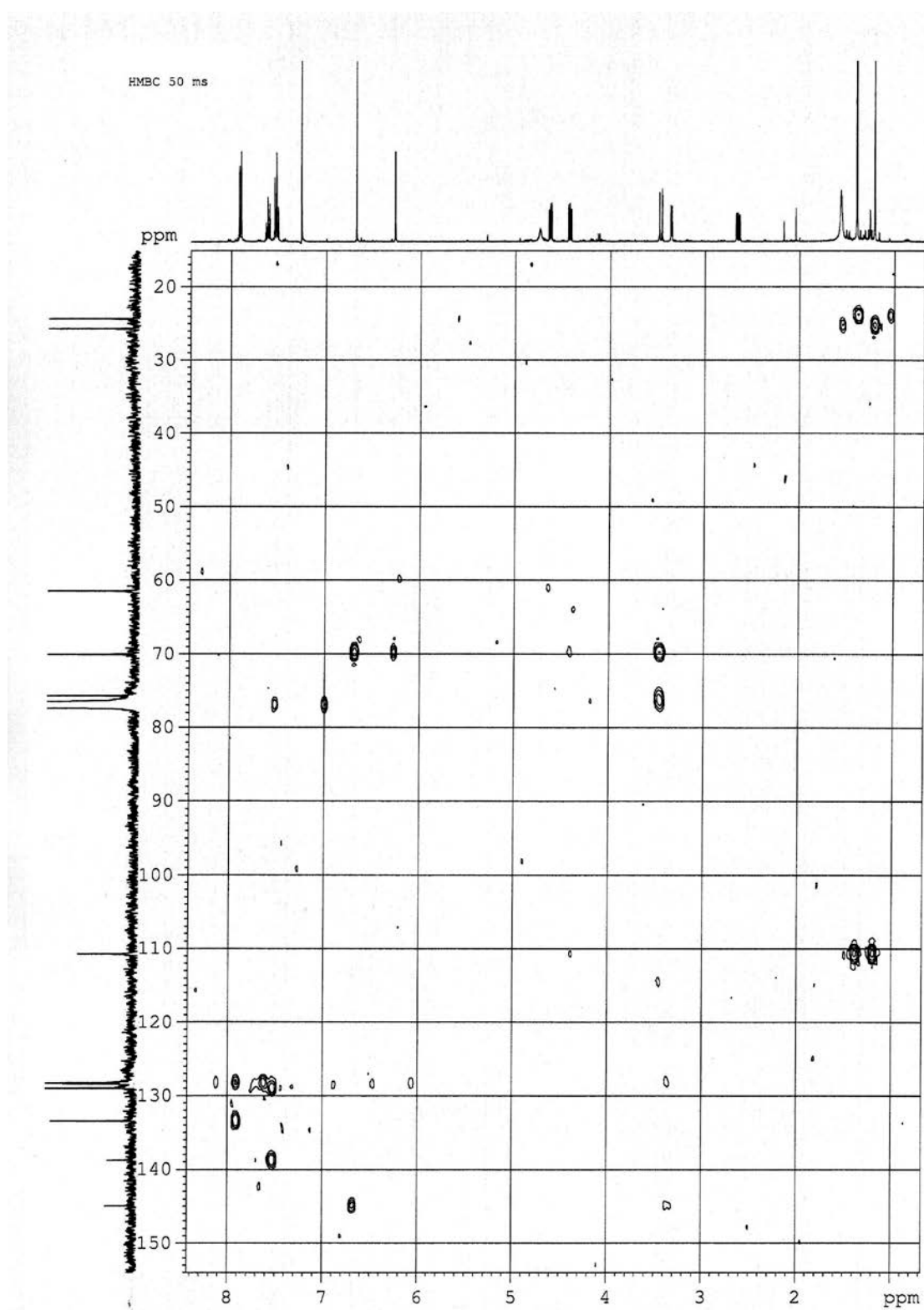
IR y HRMS del compuesto **59**:



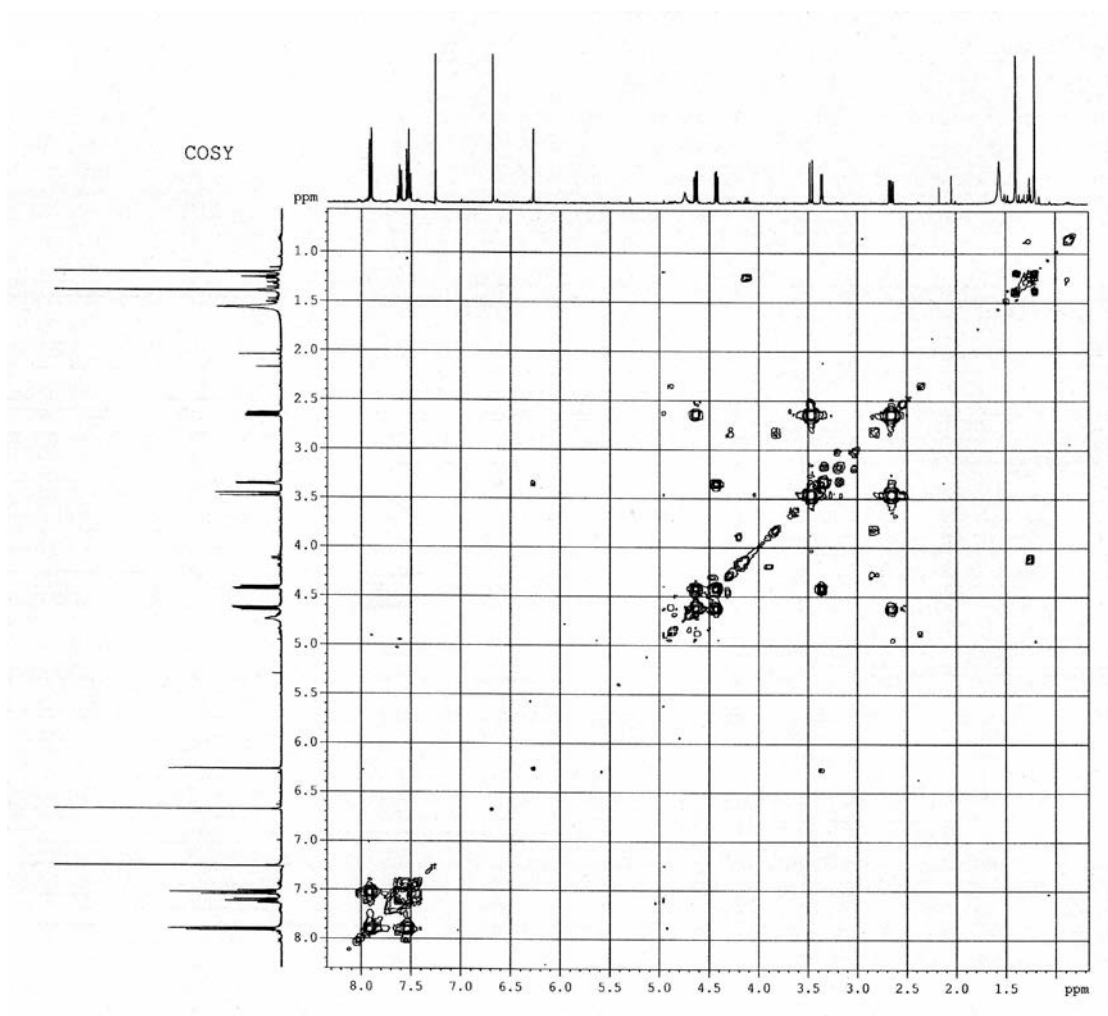
^1H y ^{13}C del compuesto **60**:



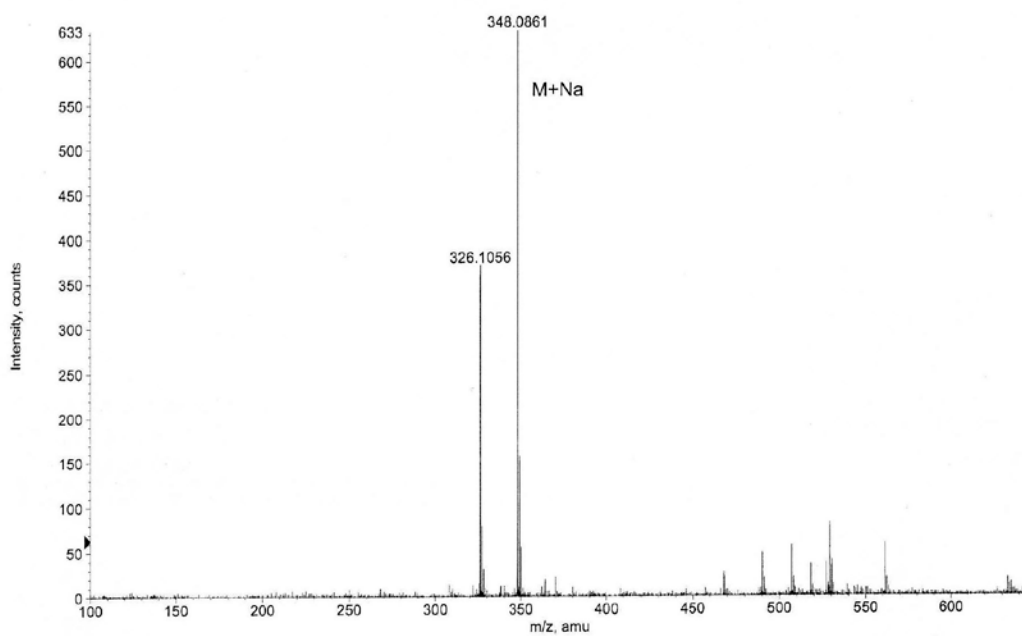
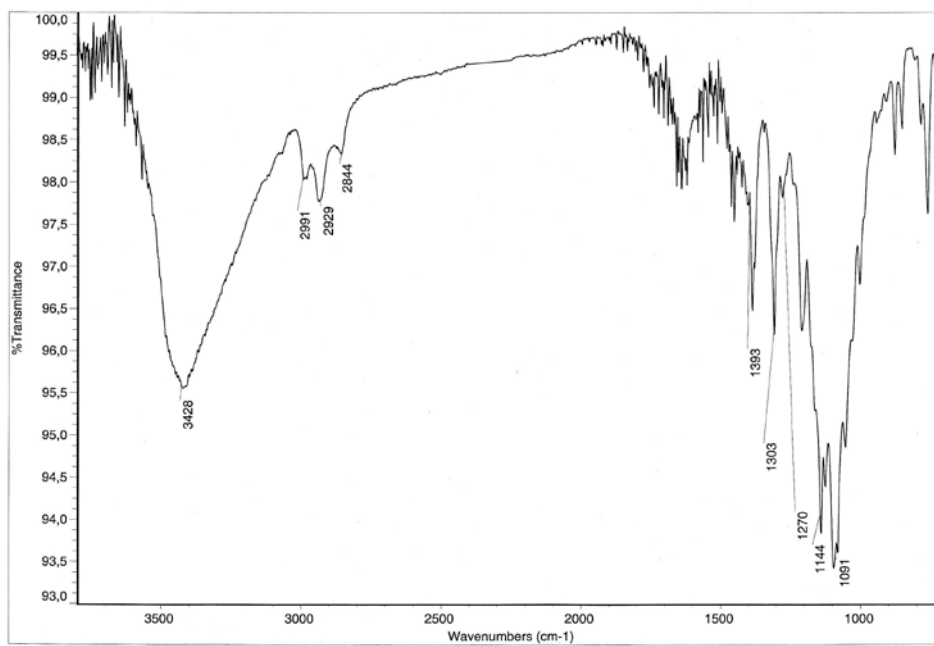
HMQC del compuesto **60**:

HMBC del compuesto **60**:

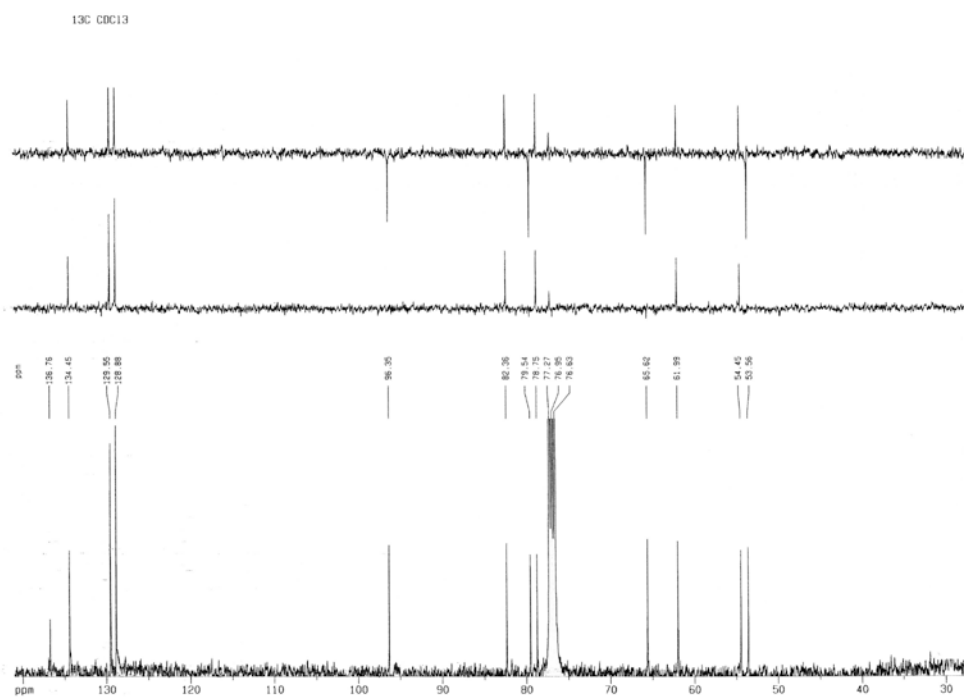
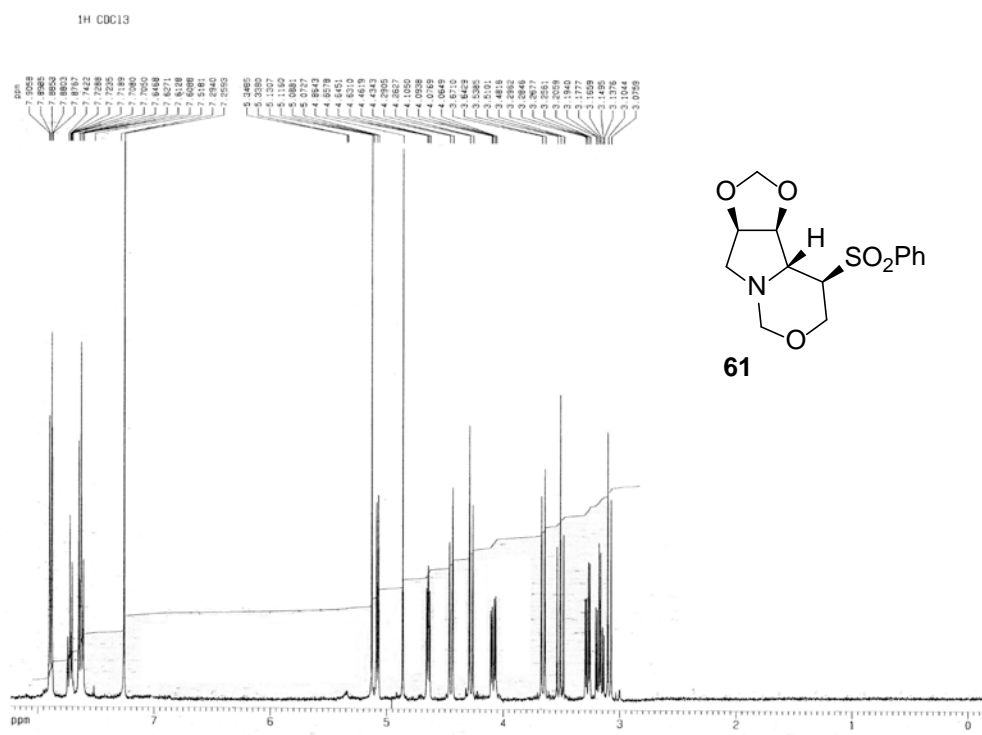
Cosy del compuesto **60**:

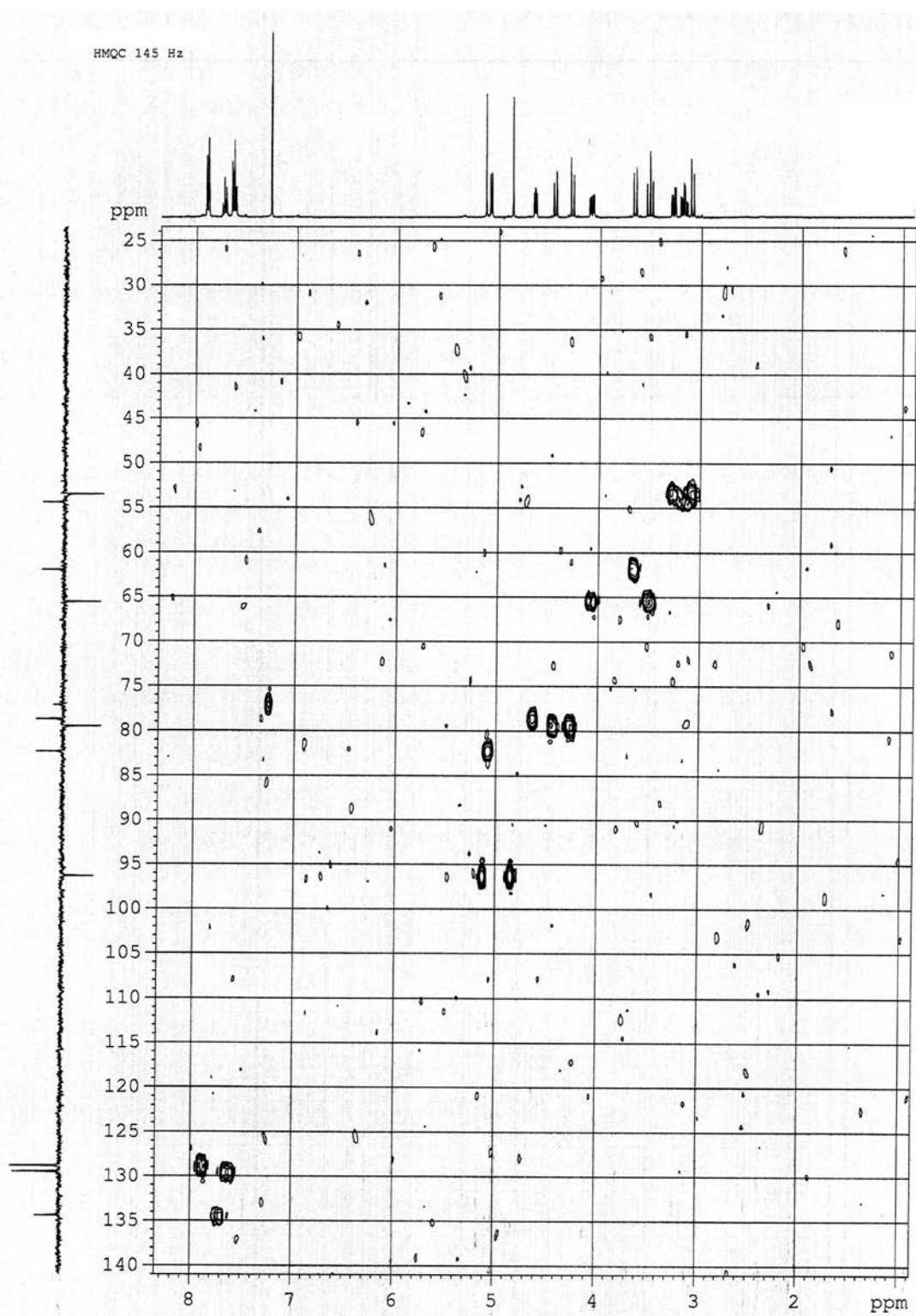


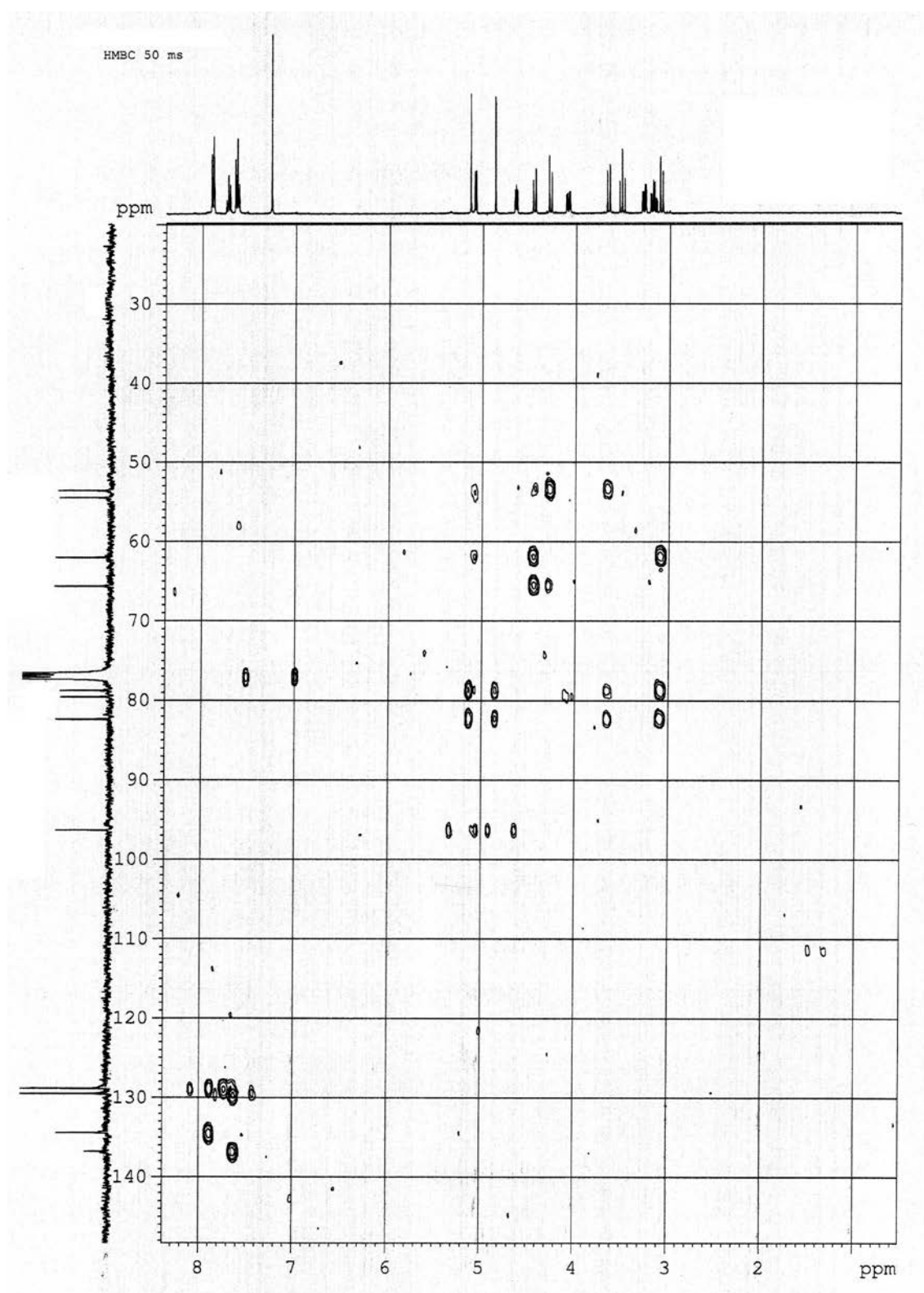
IR y HRMS del compuesto **60**:



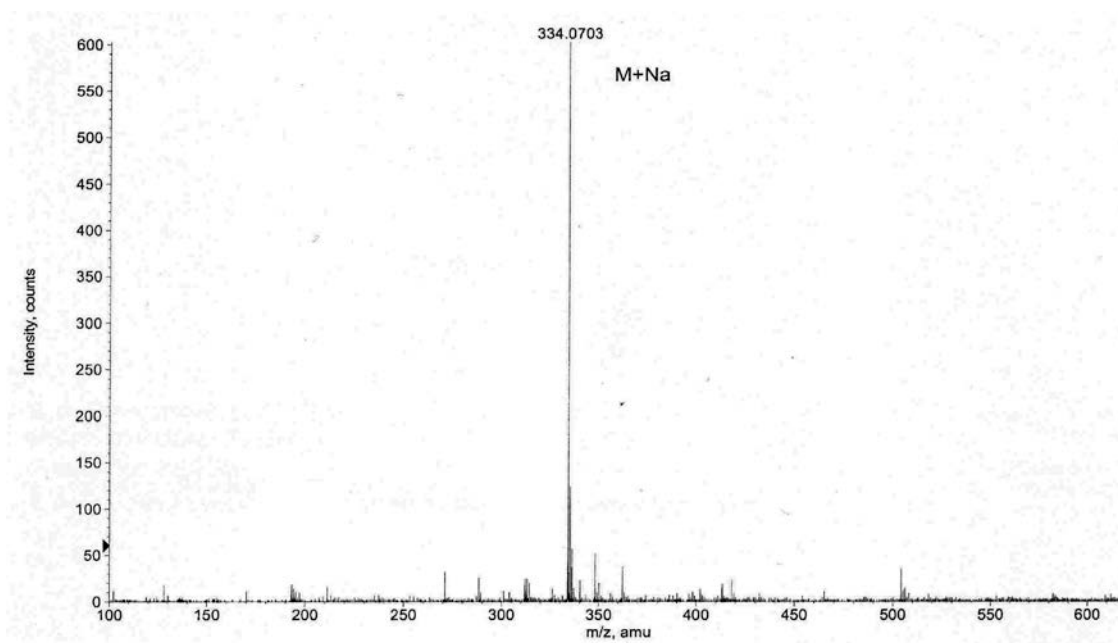
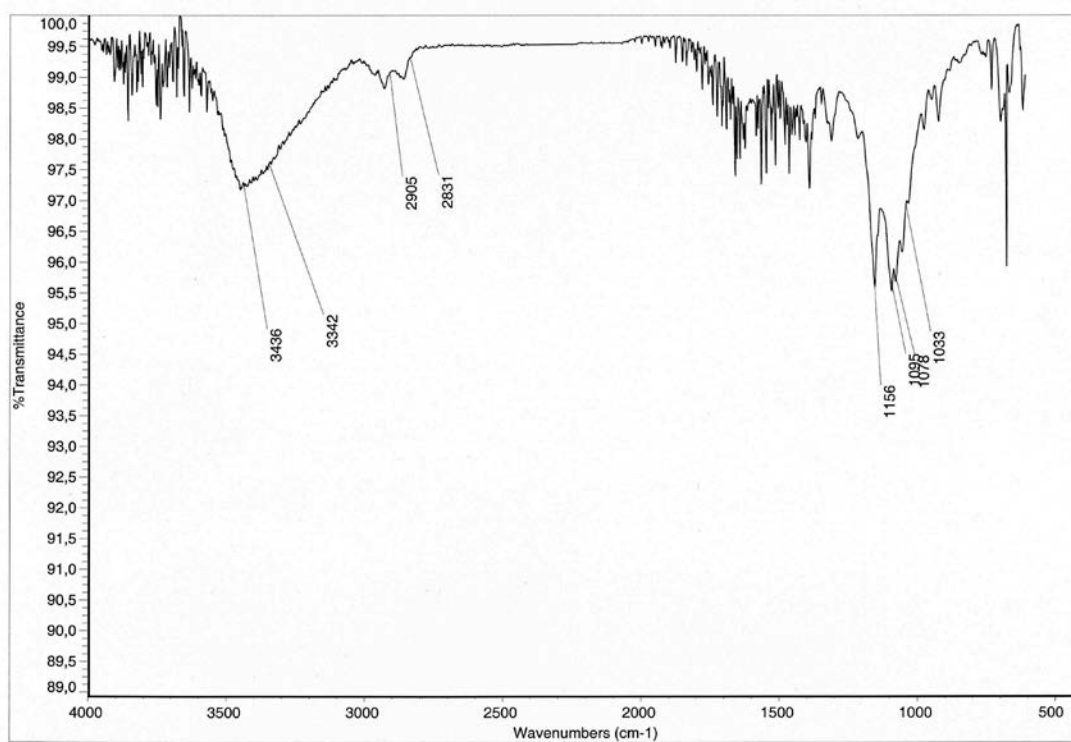
^1H y ^{13}C del compuesto **61**:



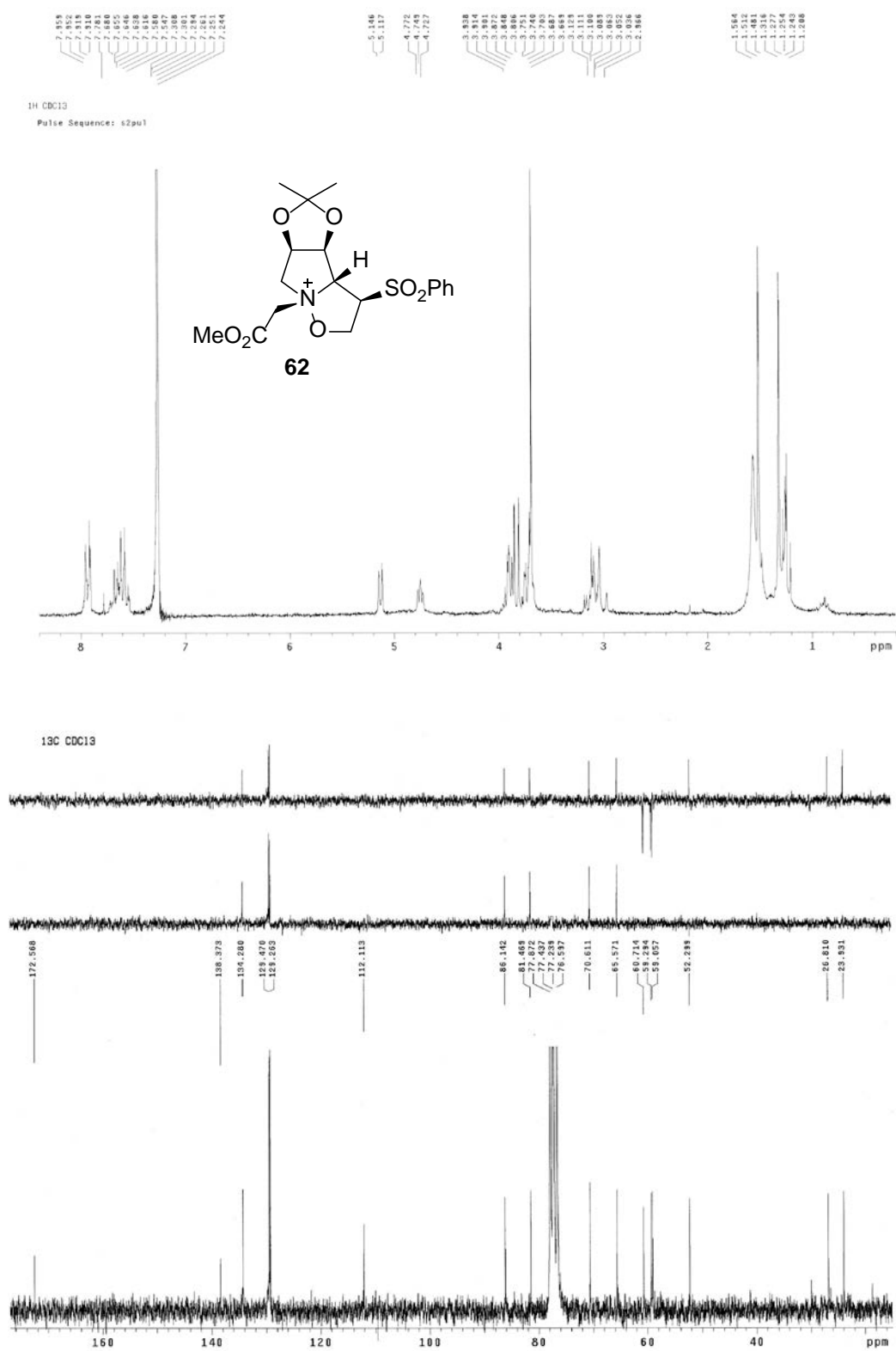
HMQC del compuesto **61**:

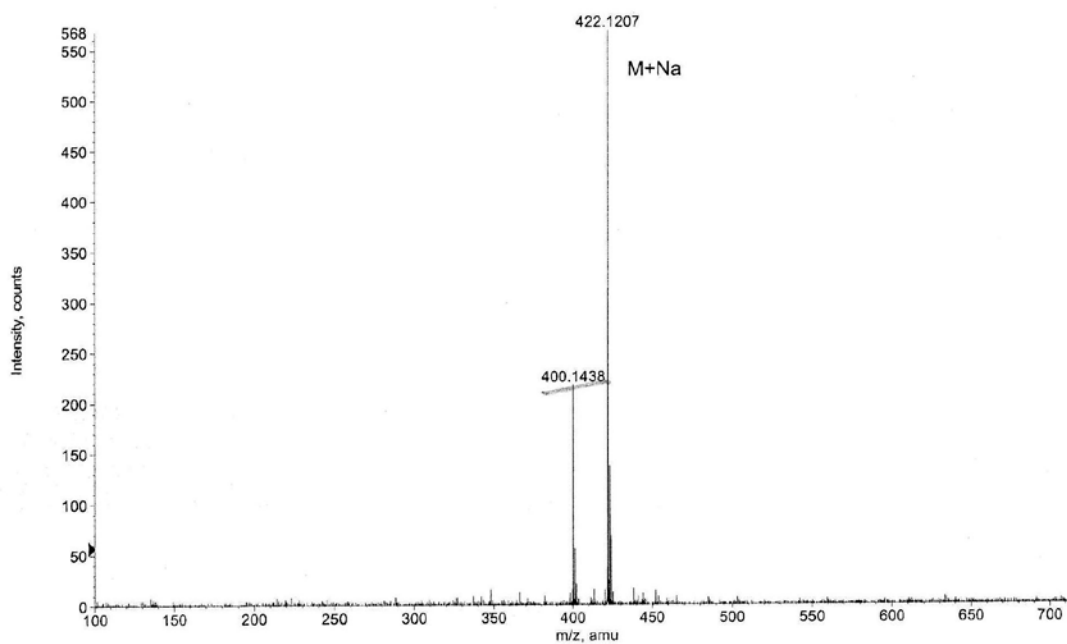
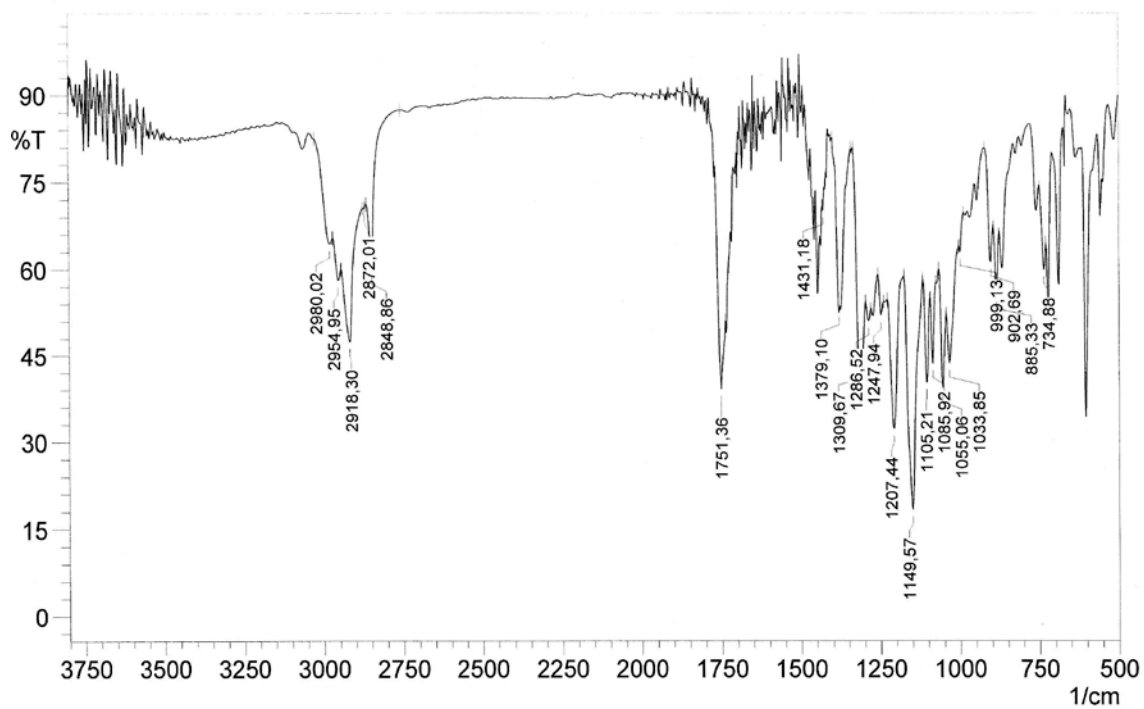
HMBC del compuesto **61**:

IR y HRMS del compuesto **61**:

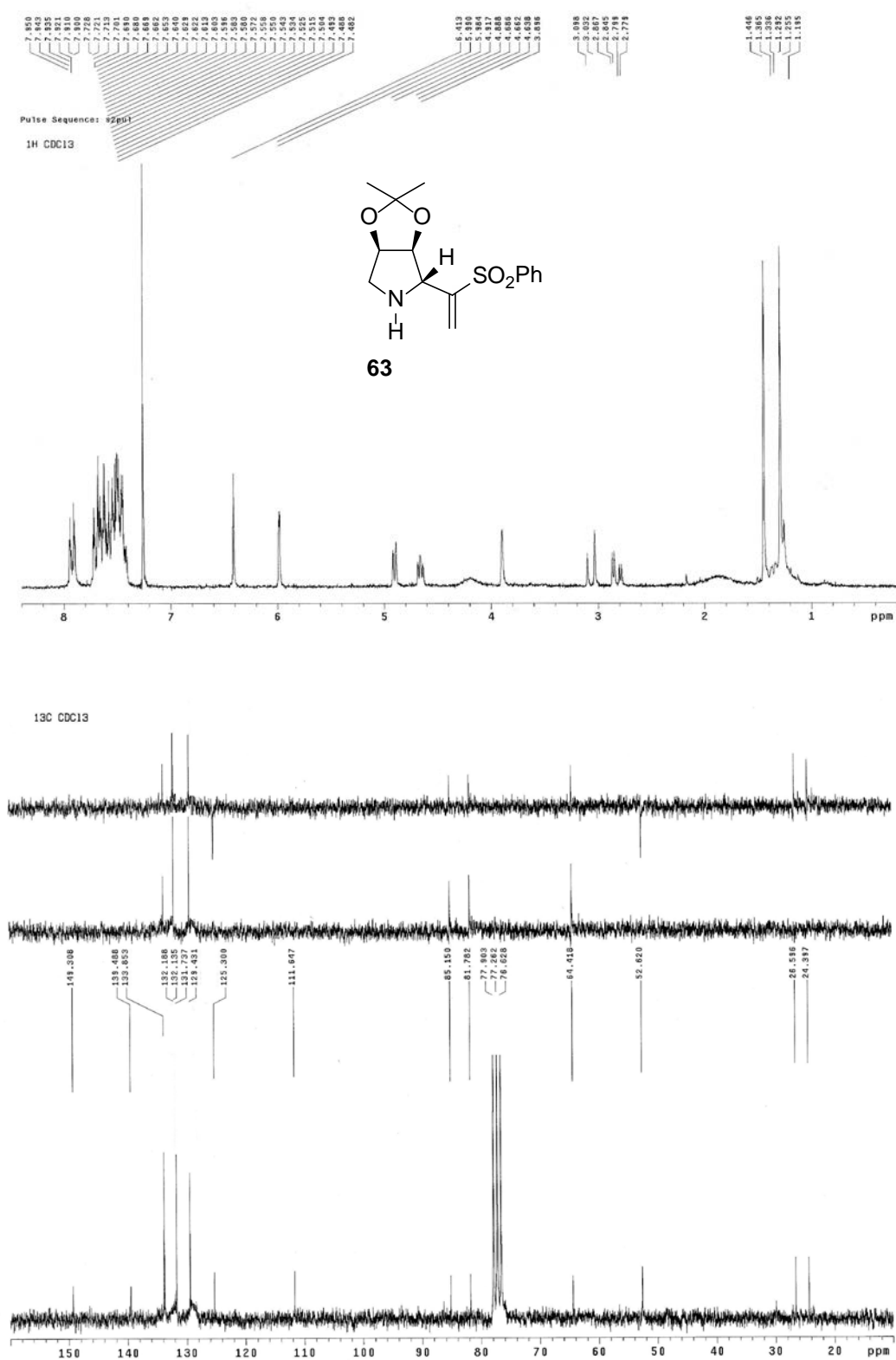


^1H y ^{13}C del compuesto **62**:

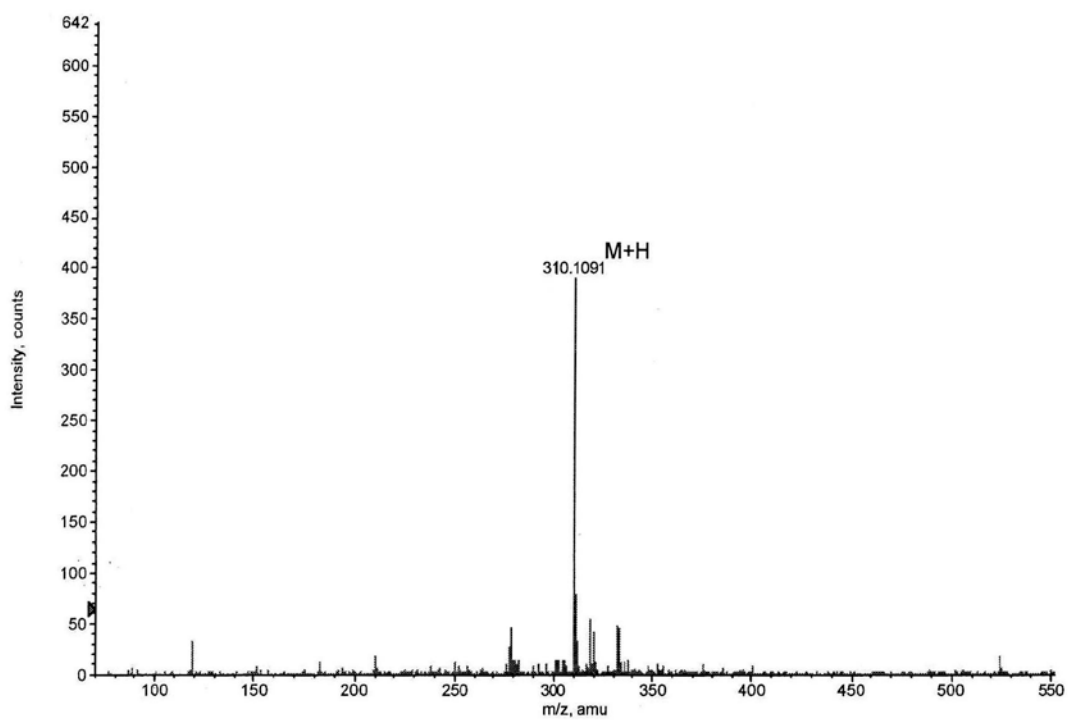
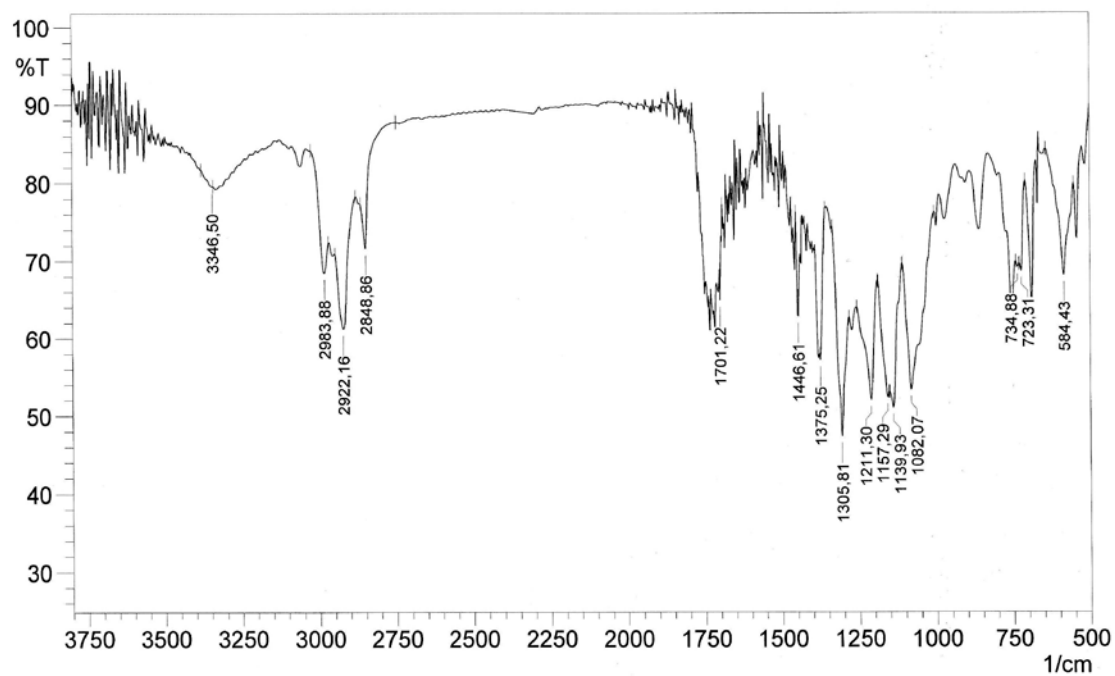


IR y HRMS del compuesto **62**:

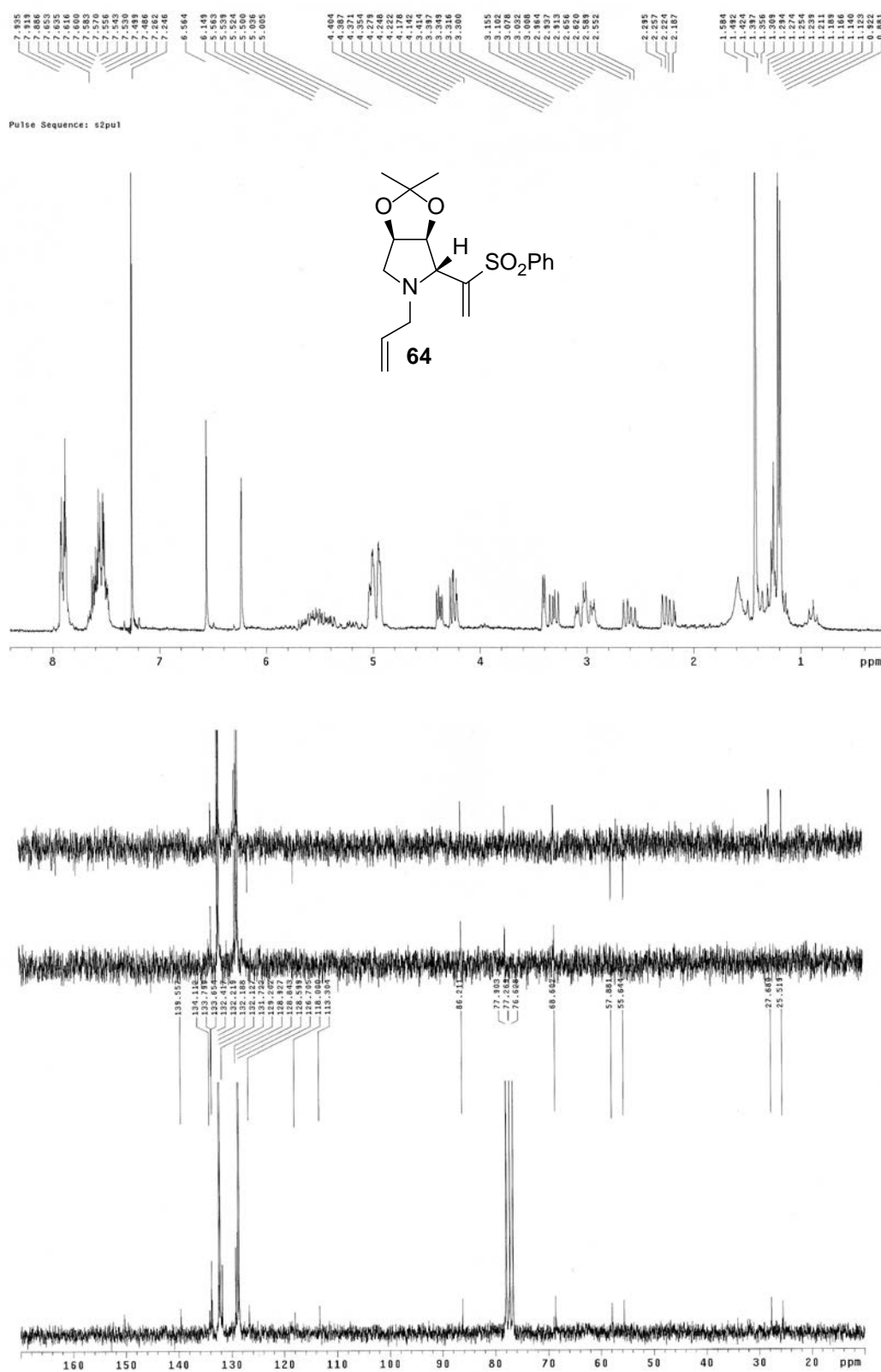
^1H y ^{13}C del compuesto **63**:

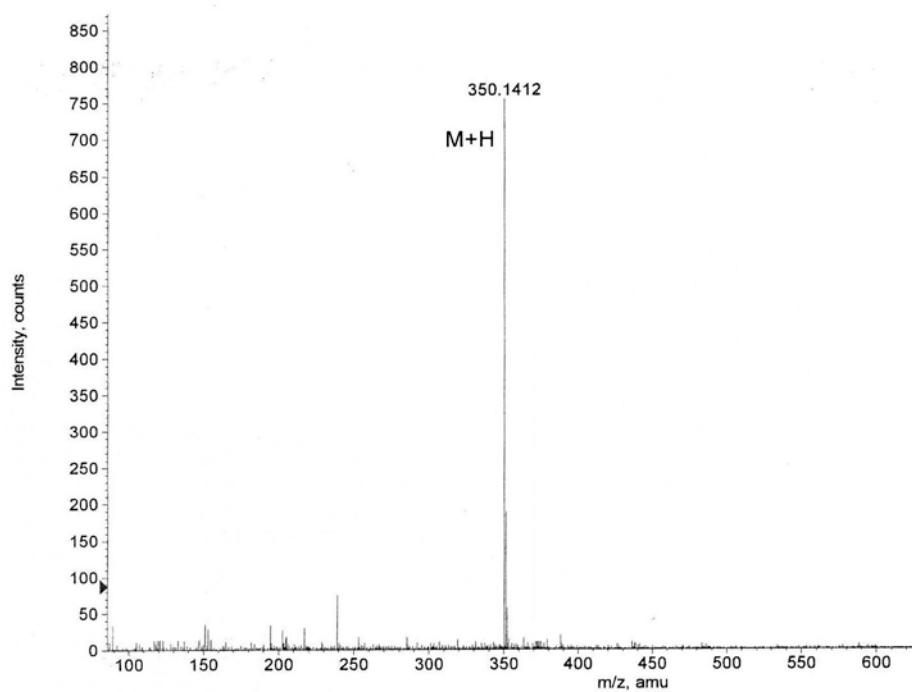
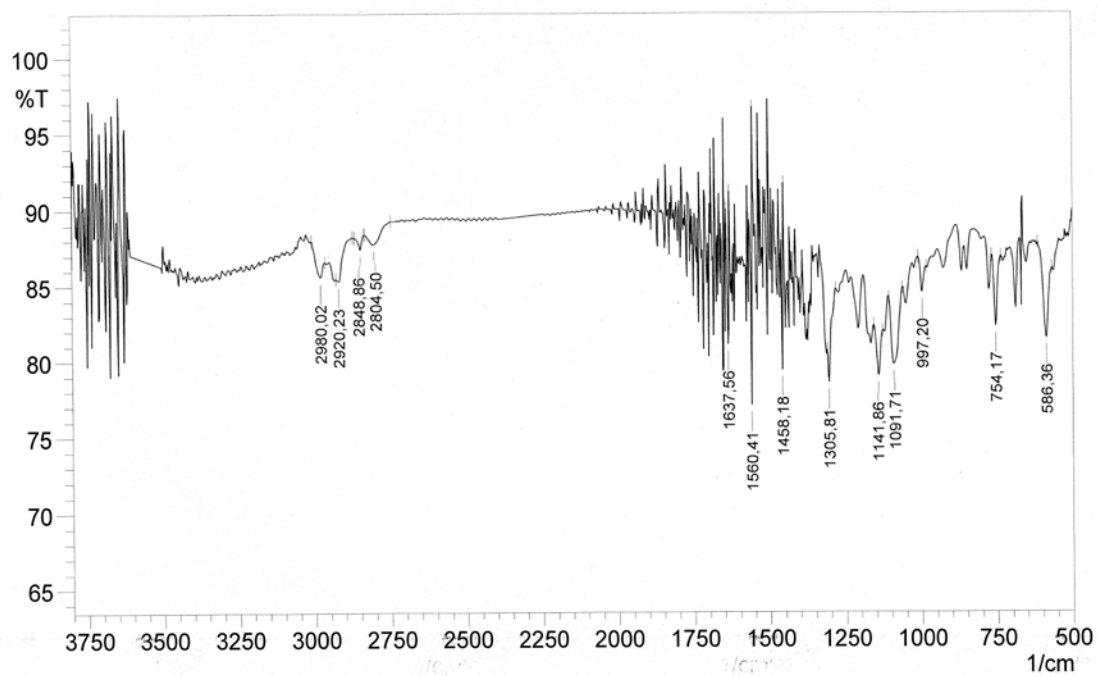


IR y HRMS del compuesto **63**:

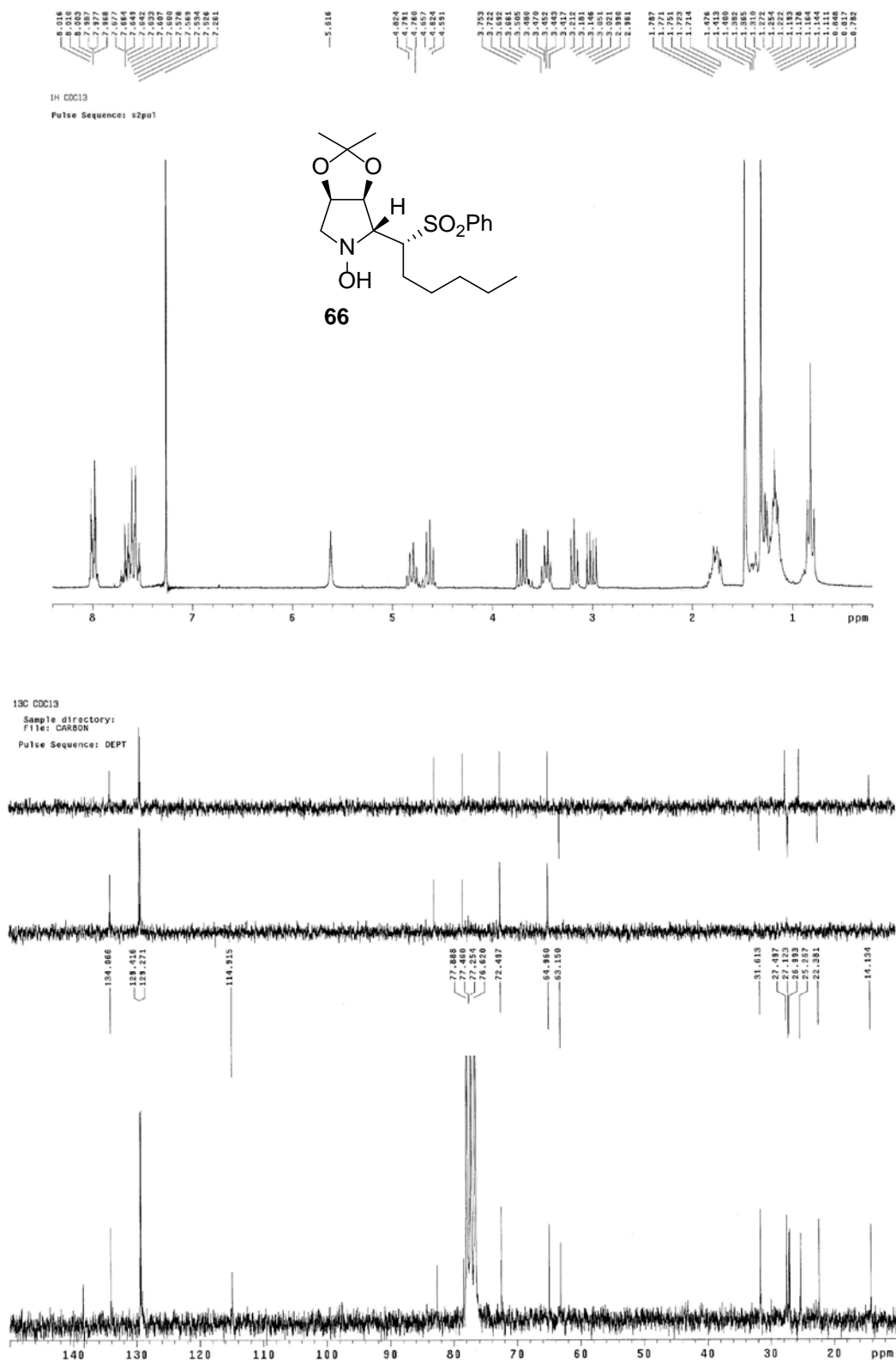


^1H y ^{13}C del compuesto **64**:

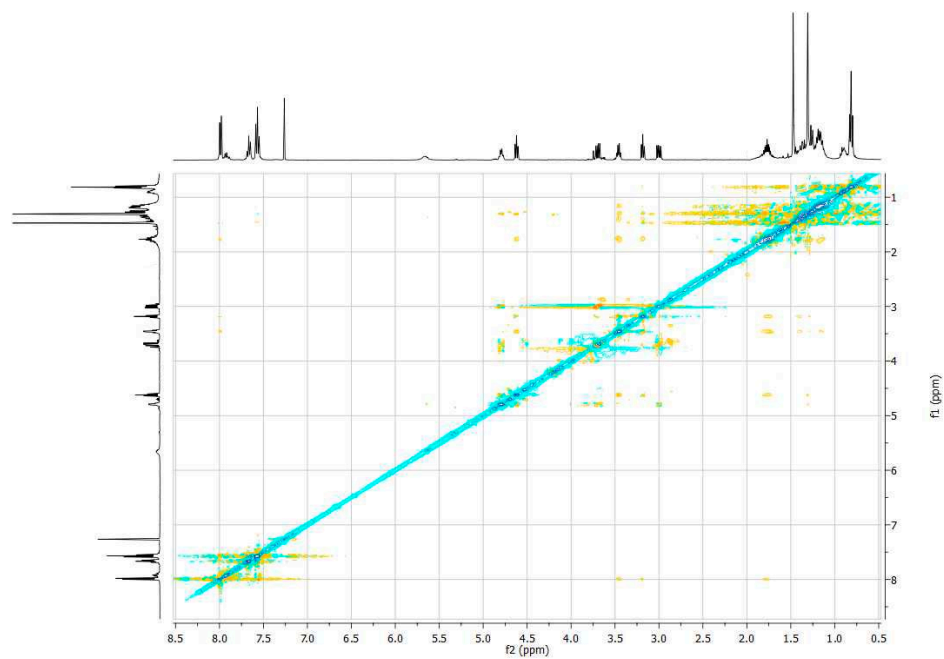
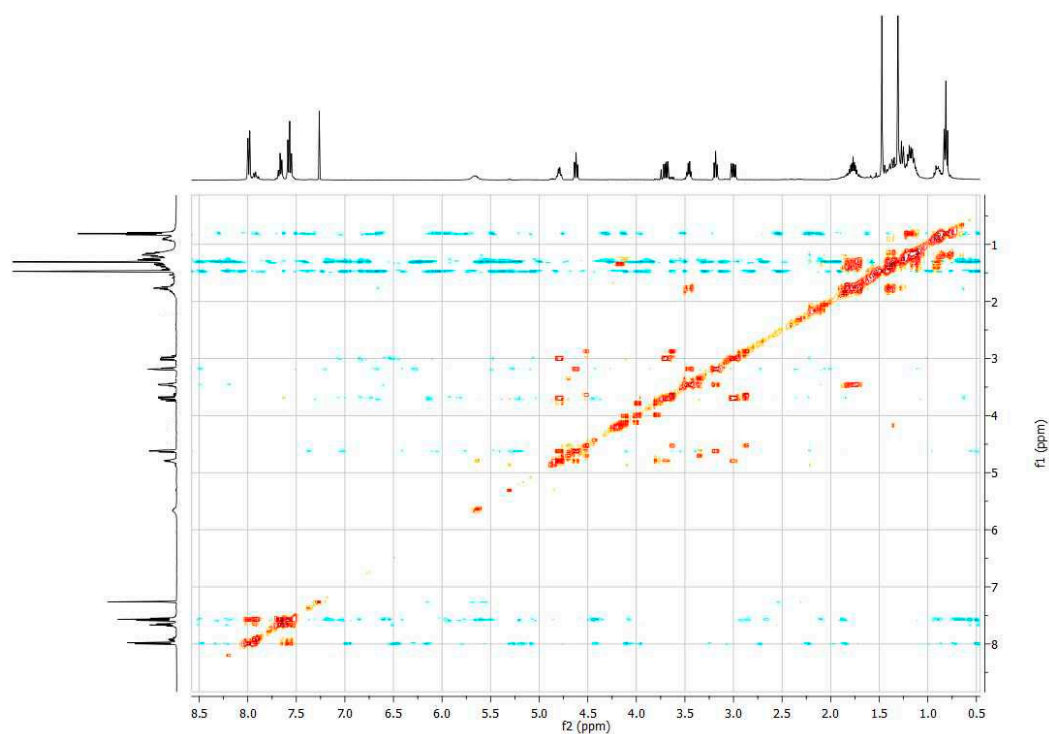


IR y HRMS del compuesto **64**:

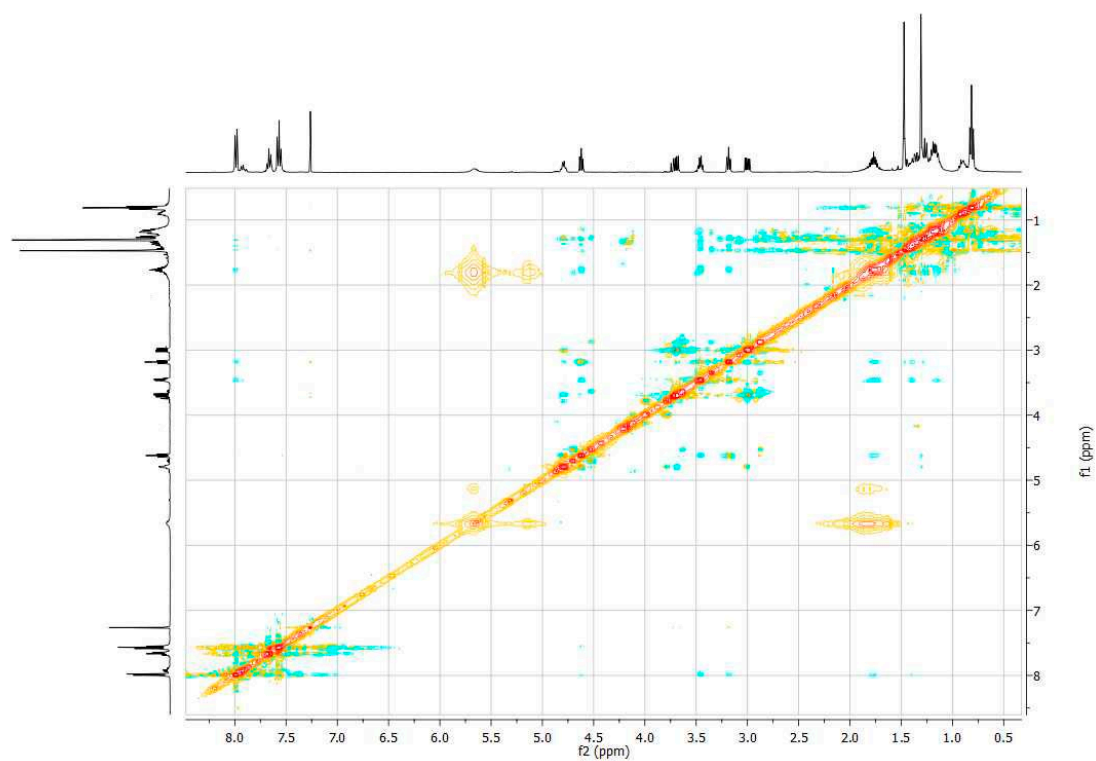
^1H y ^{13}C del compuesto **66**:



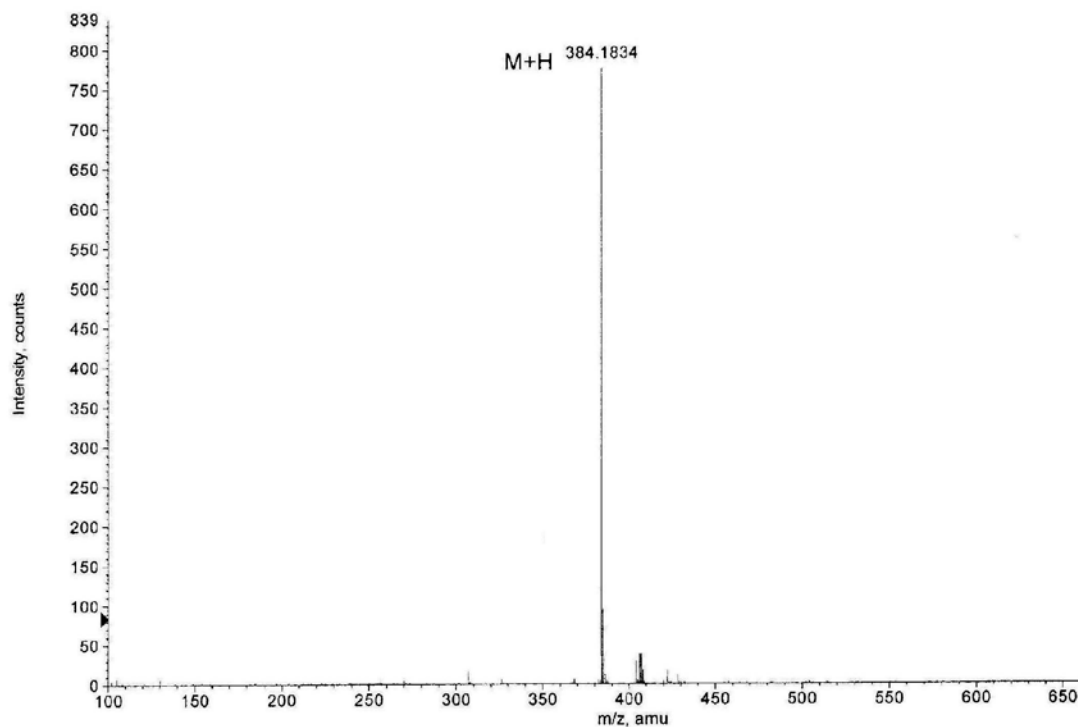
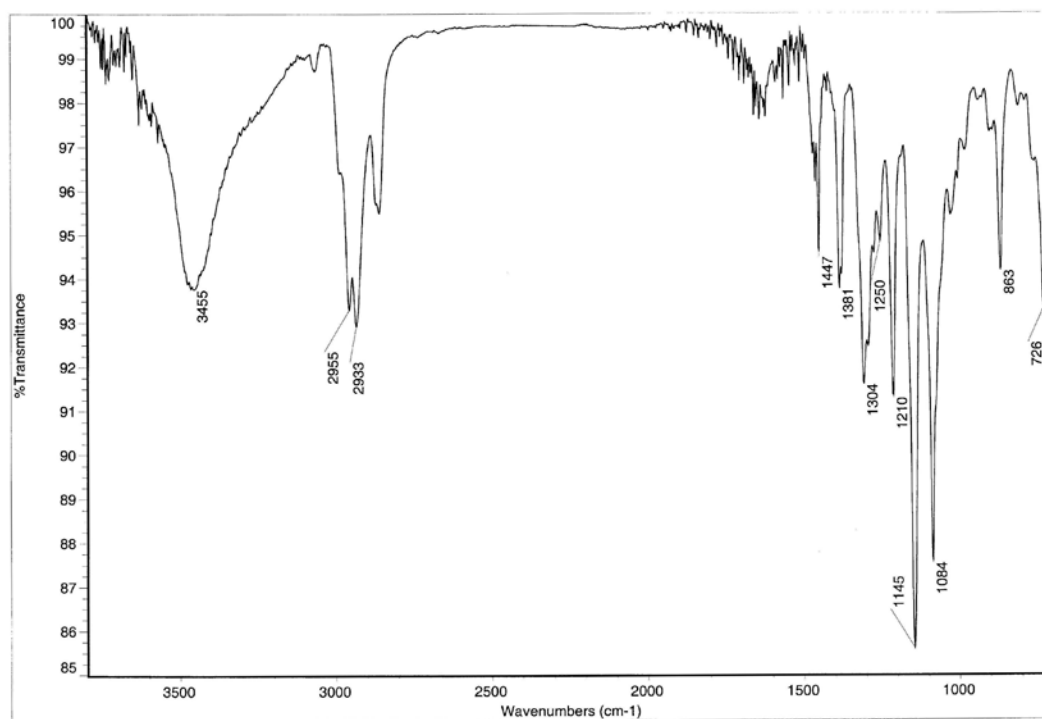
Cosy y Roesy del compuesto **66**:

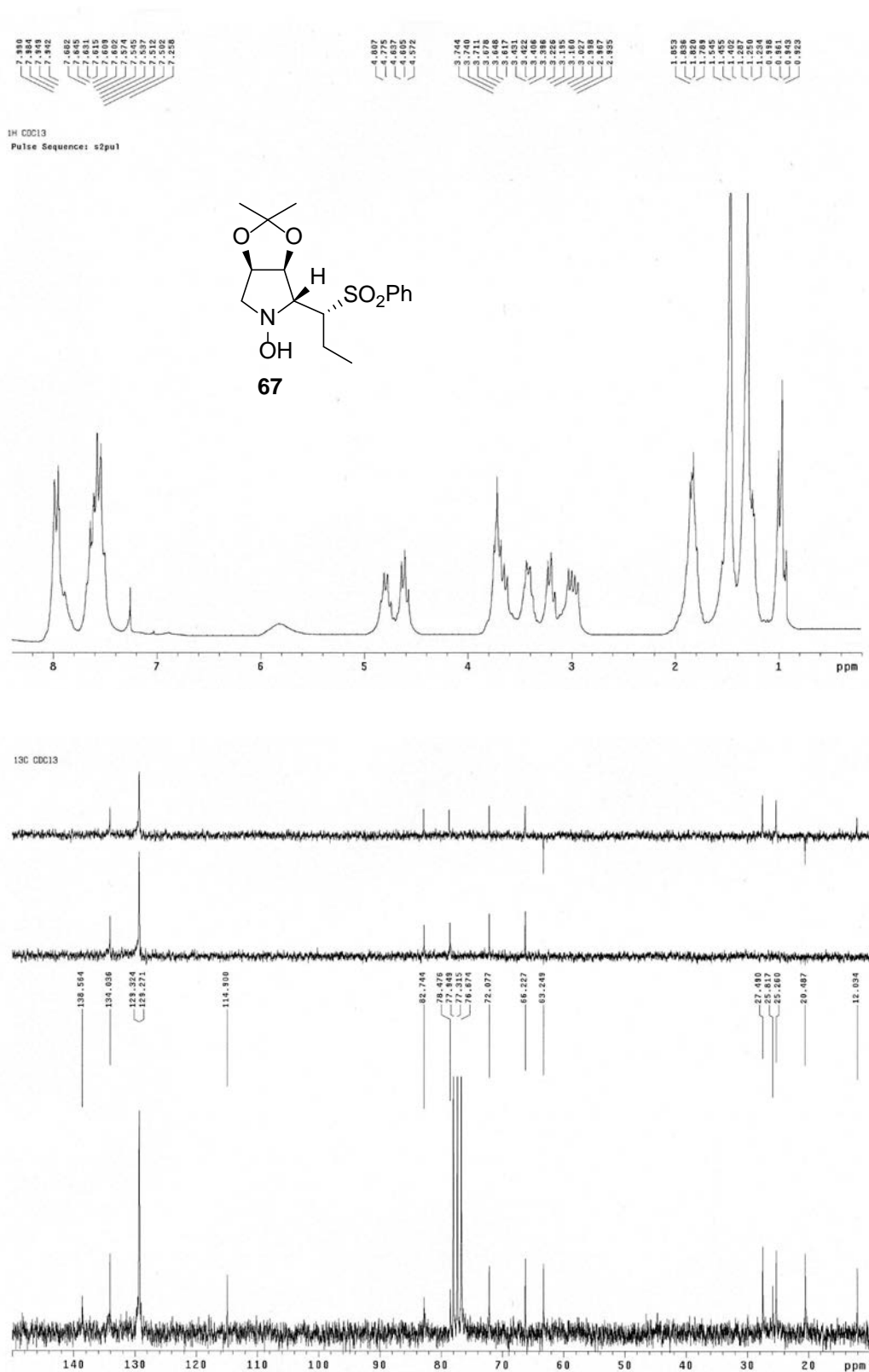


Noesy del compuesto **66**:

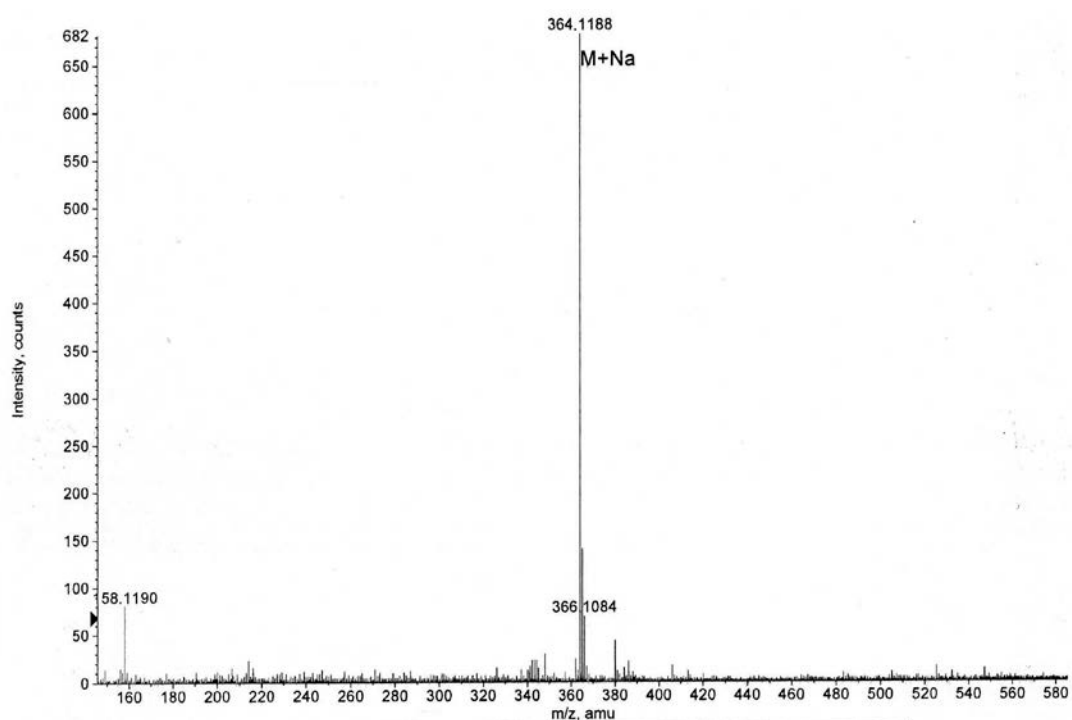
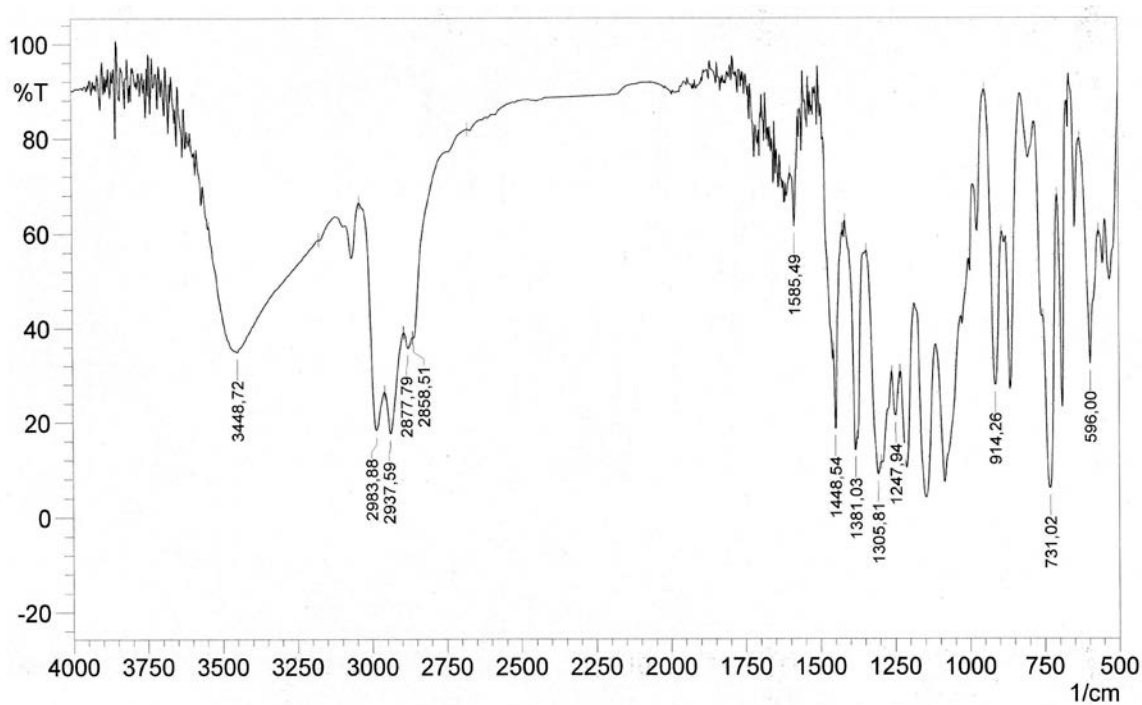


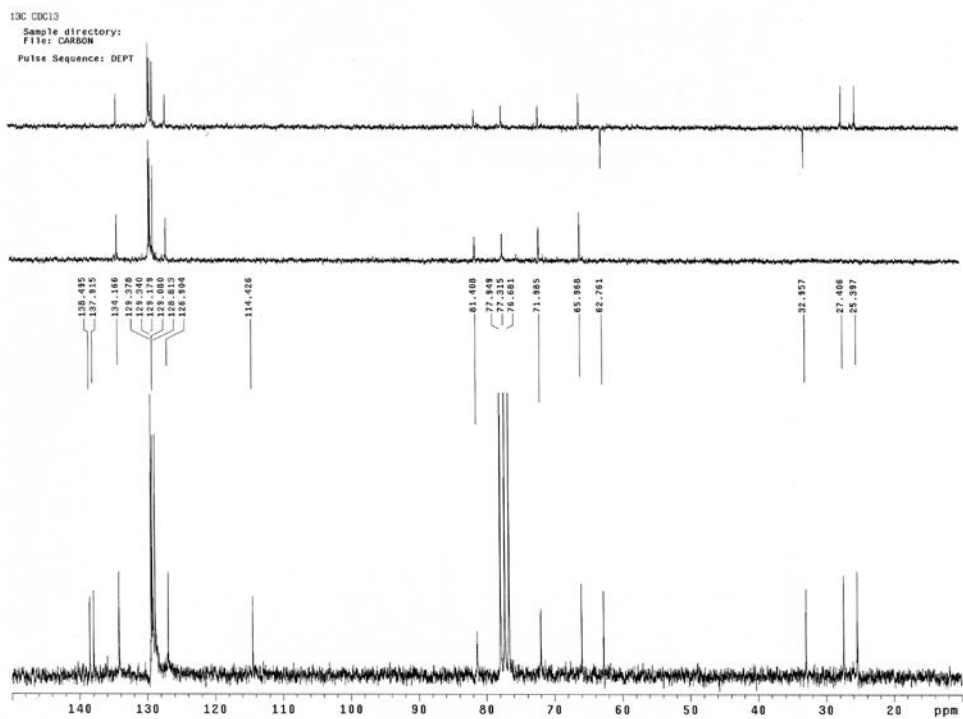
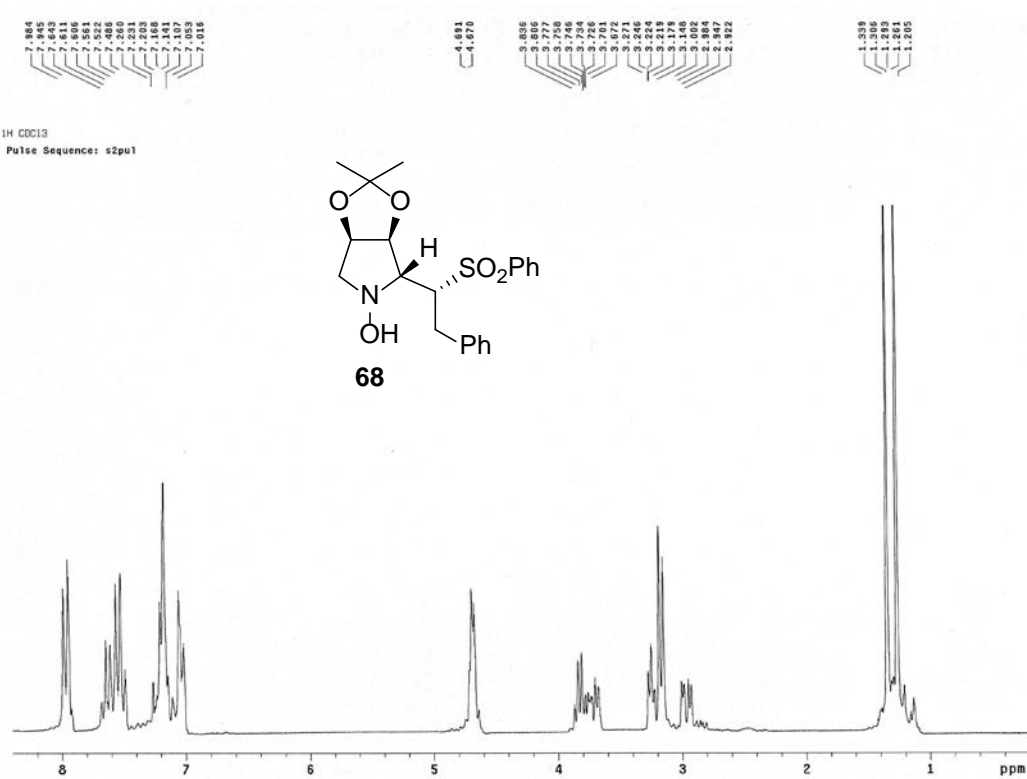
IR y HRMS del compuesto **66**:



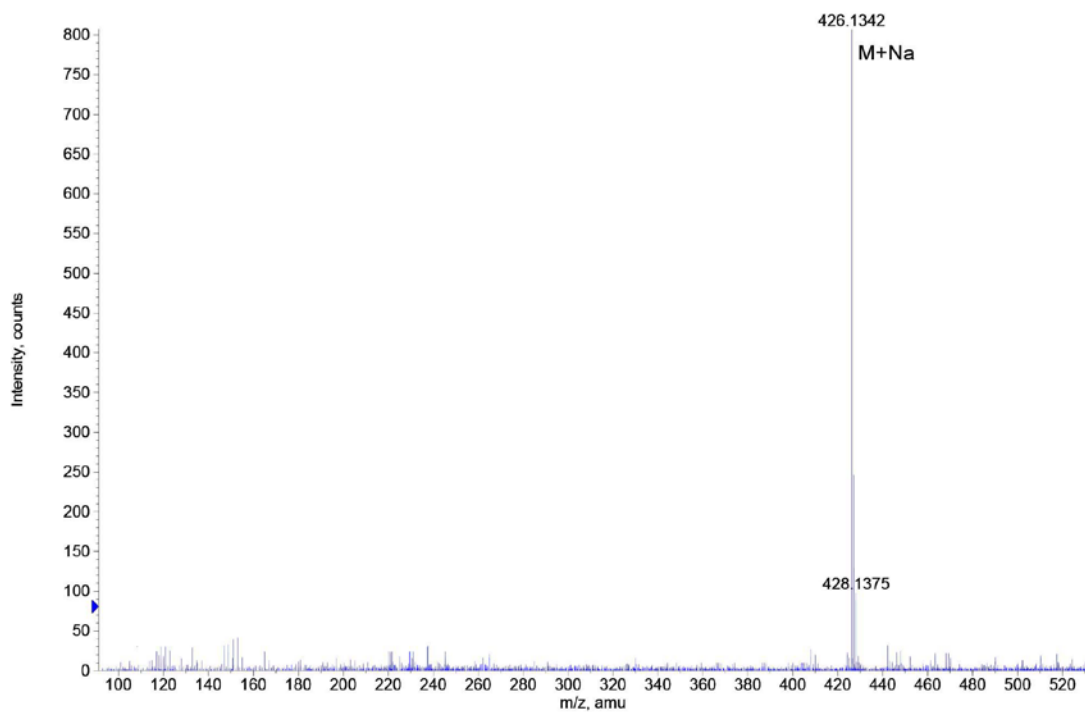
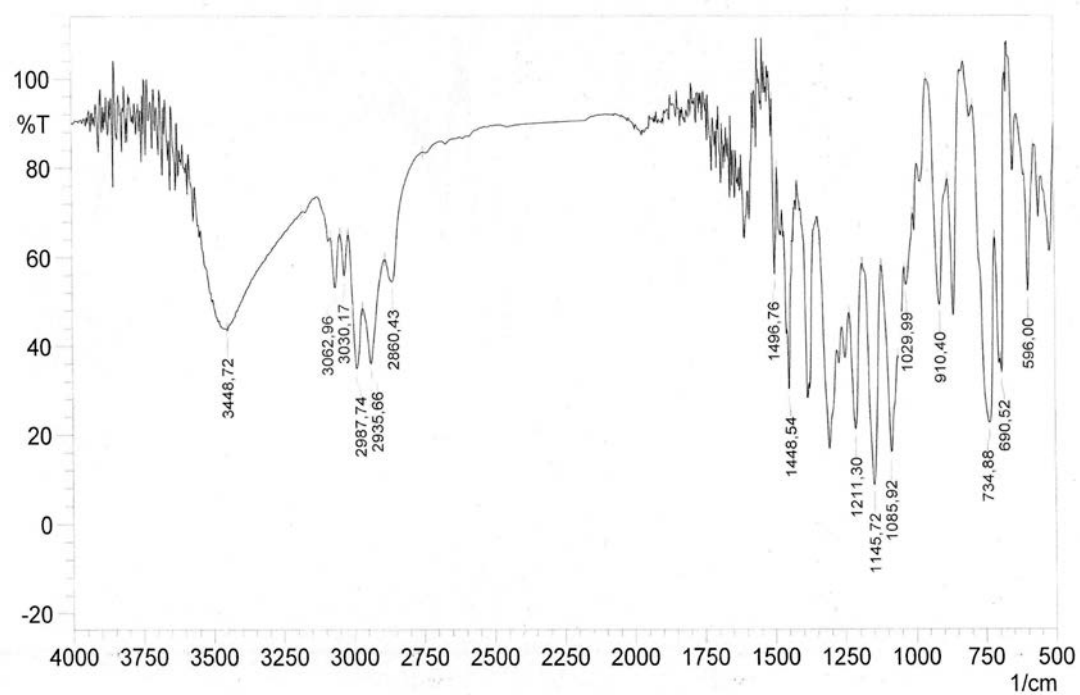
^1H y ^{13}C del compuesto **67**:

IR y HRMS del compuesto **67**:

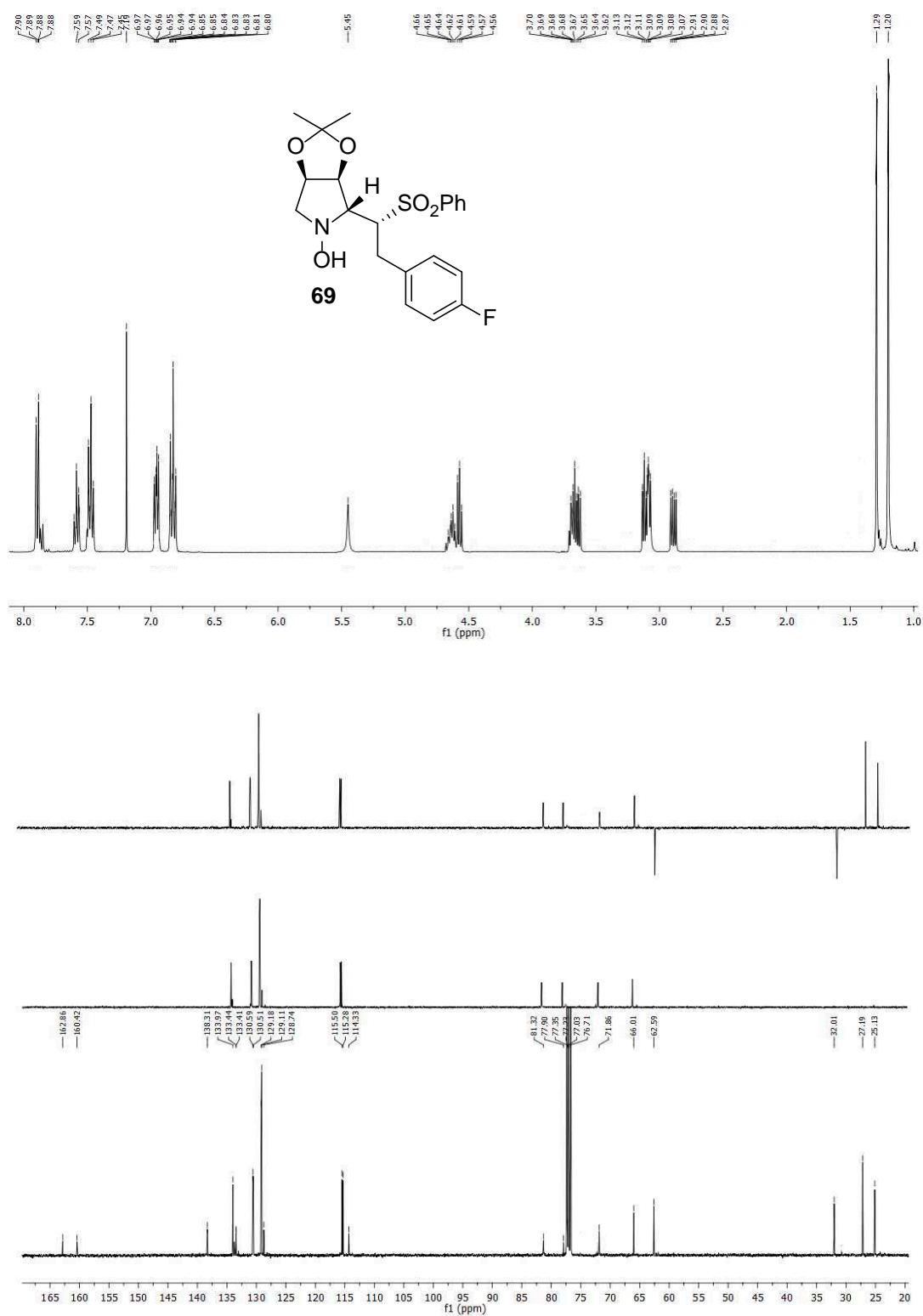


^1H y ^{13}C del compuesto **68**:

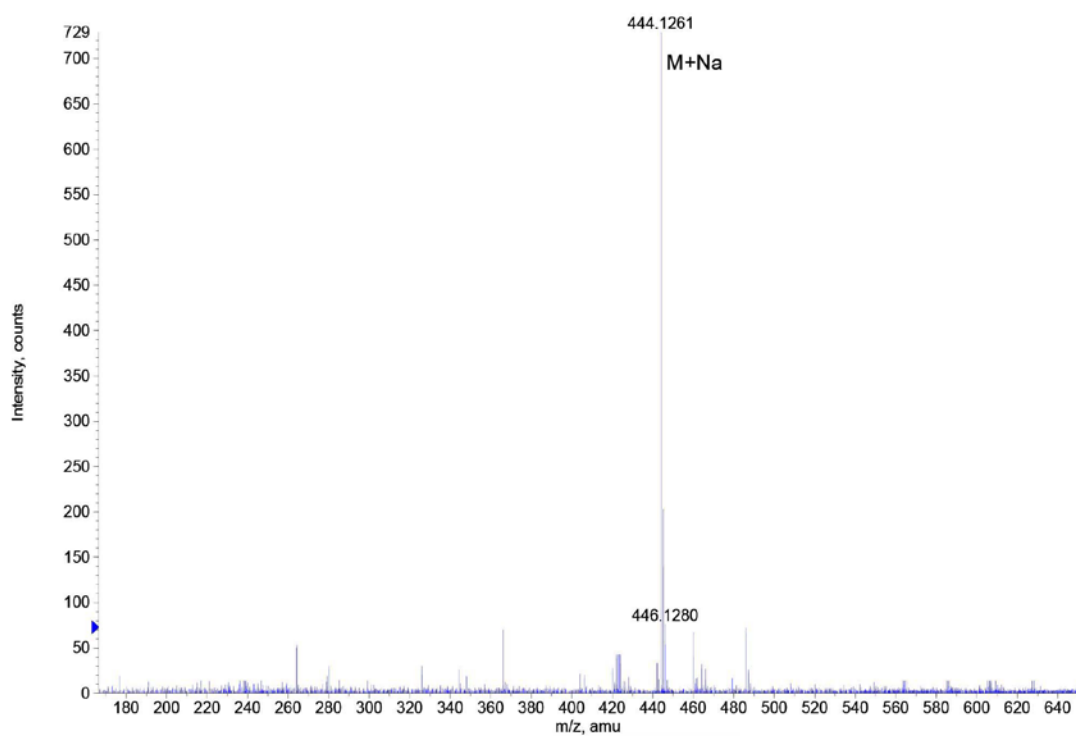
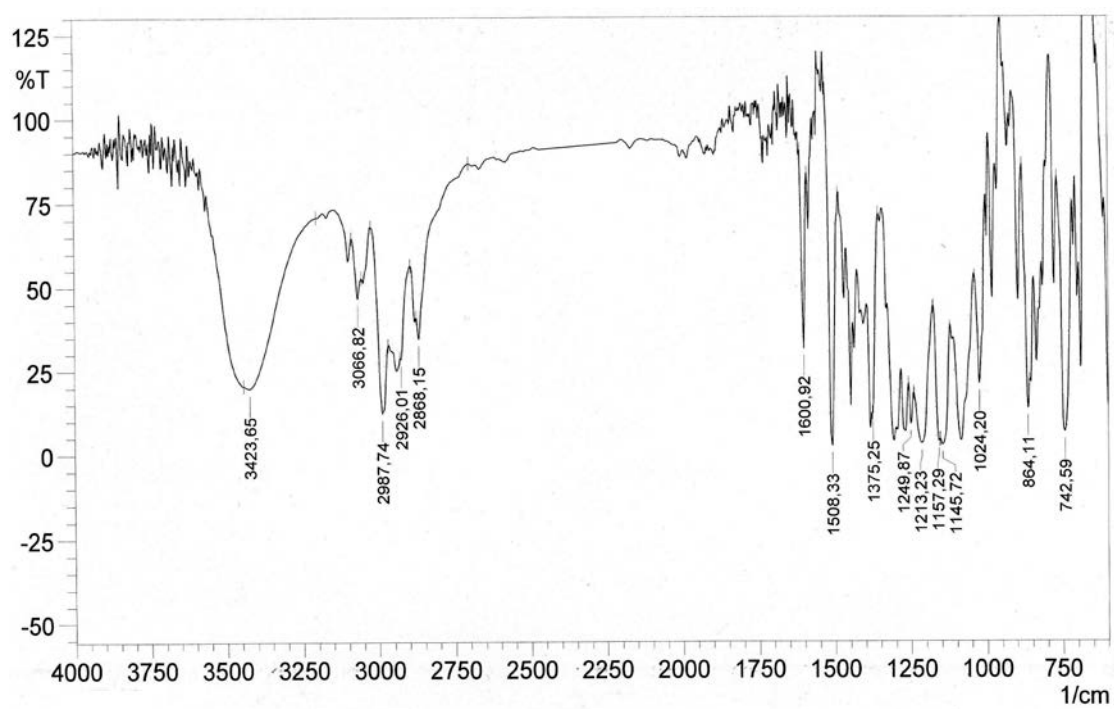
IR y HRMS del compuesto **68**:



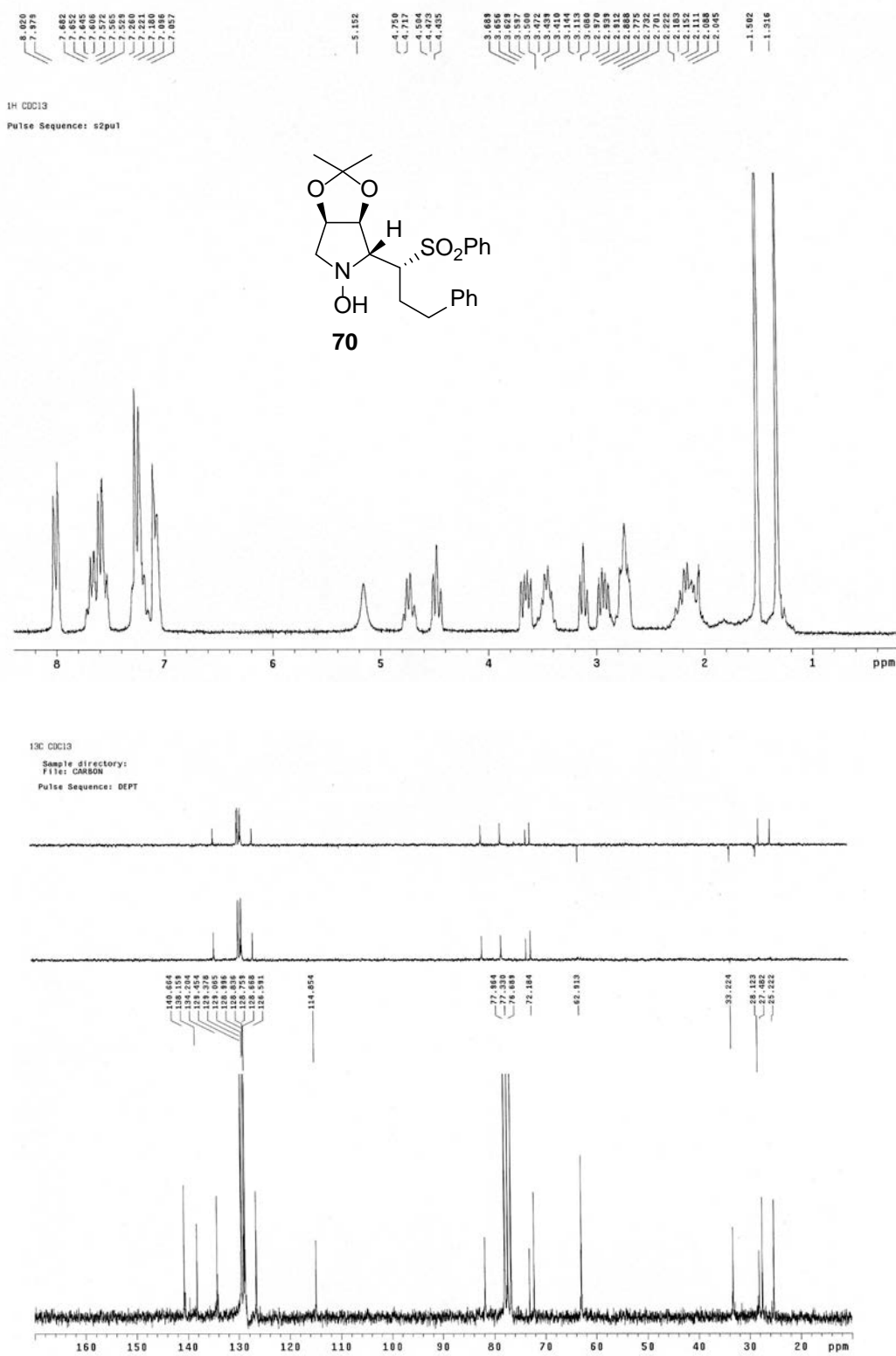
^1H y ^{13}C del compuesto **69**:



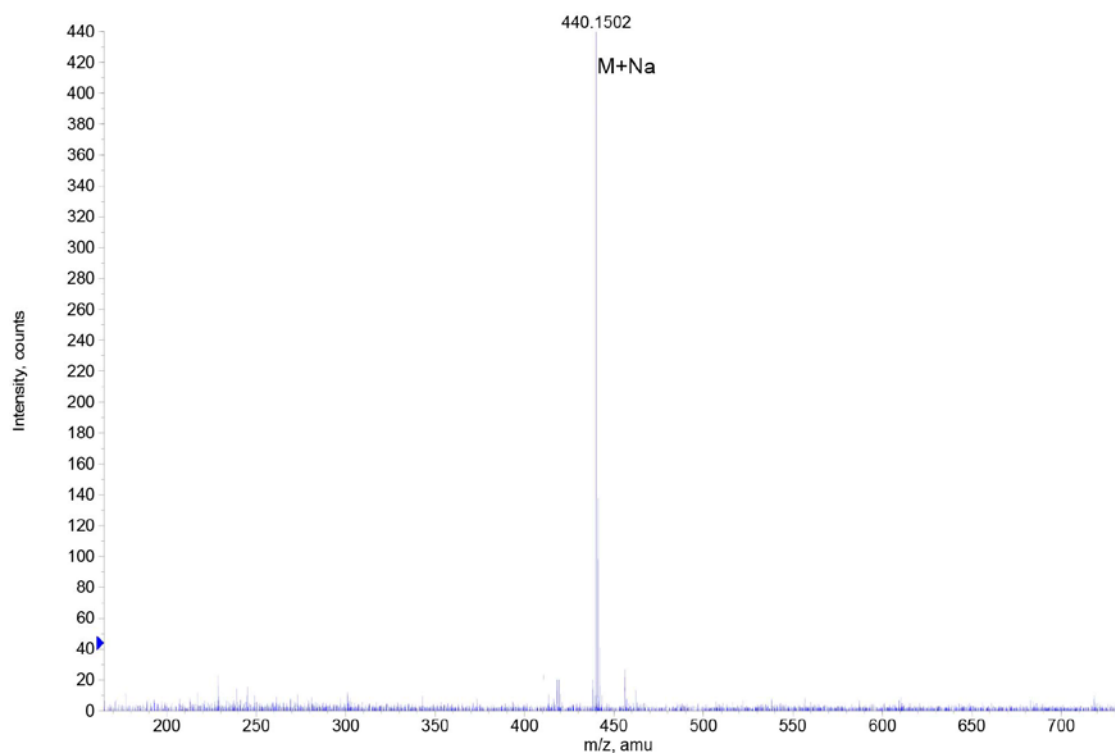
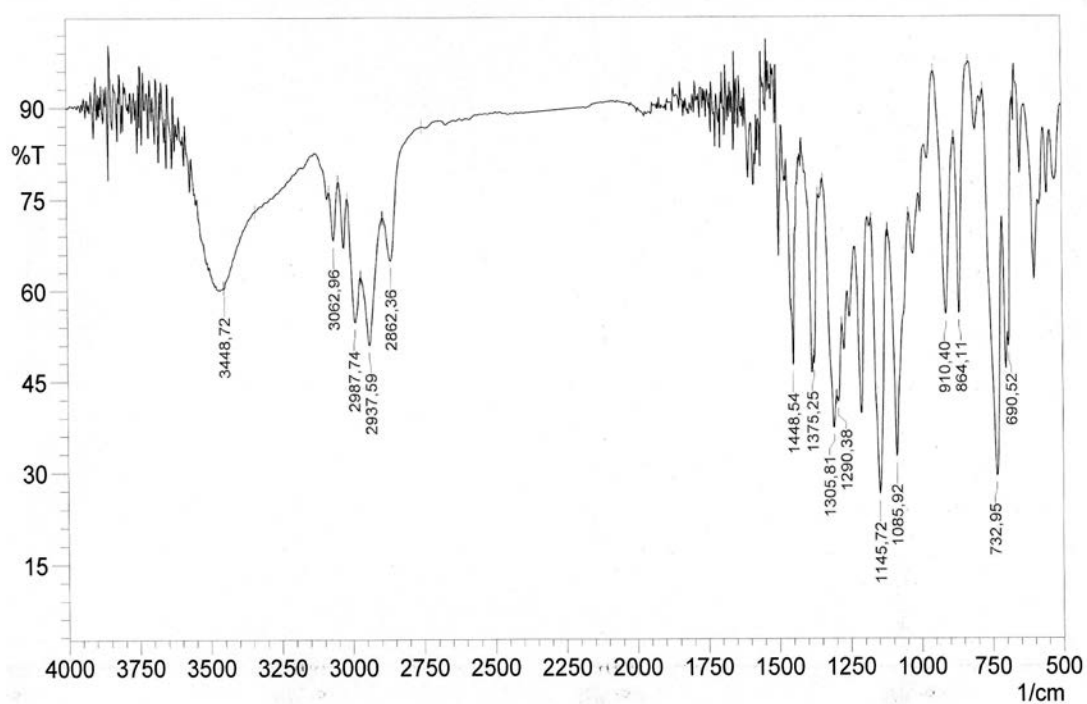
IR y HRMS del compuesto **69**:



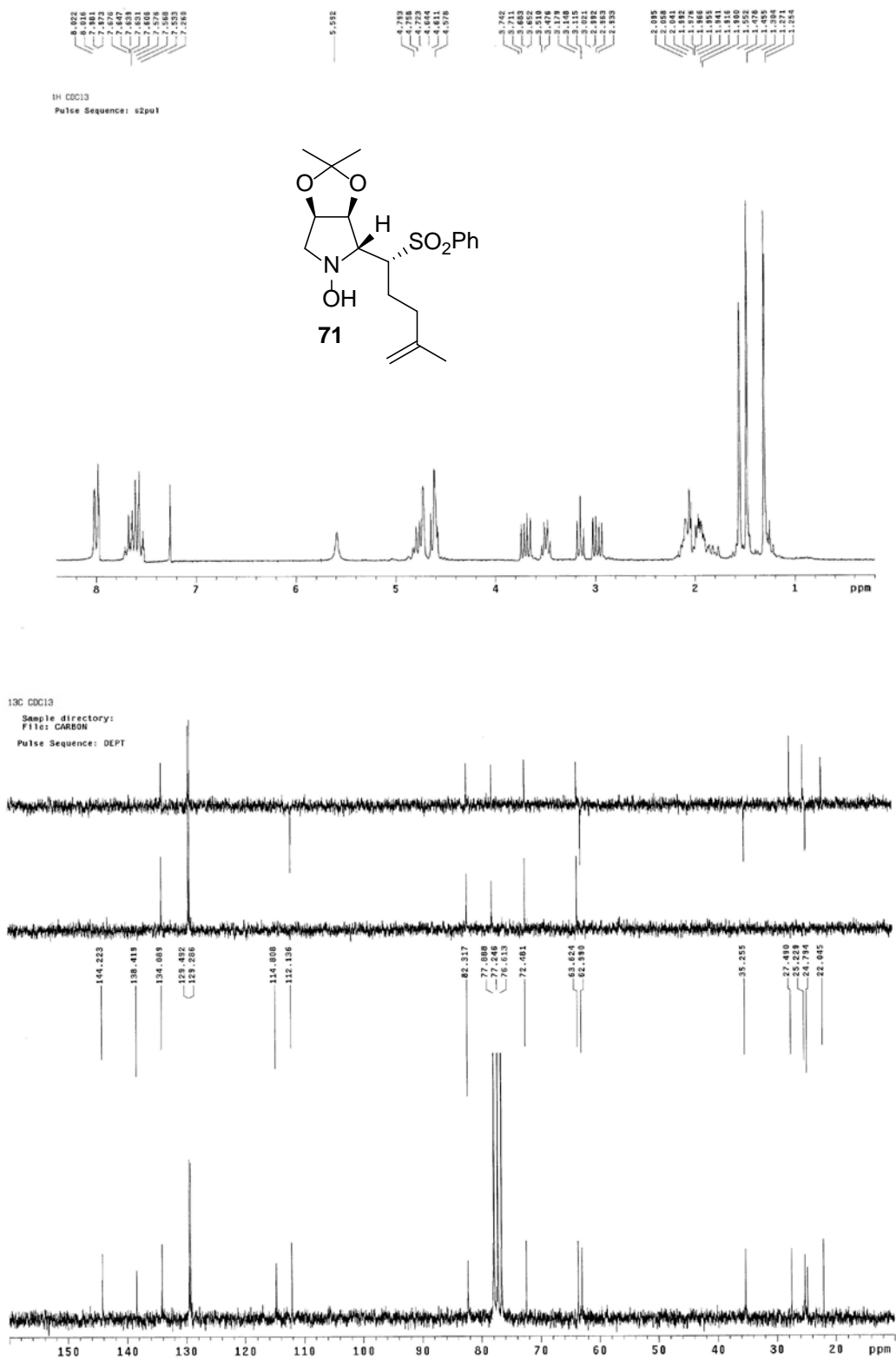
^1H y ^{13}C del compuesto **70**:



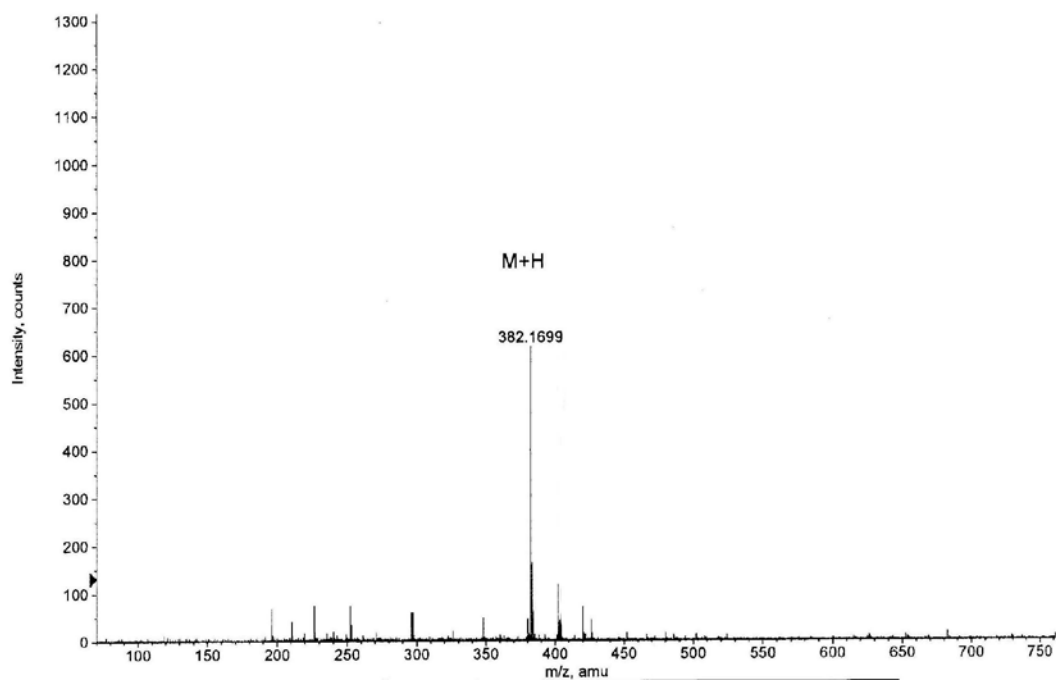
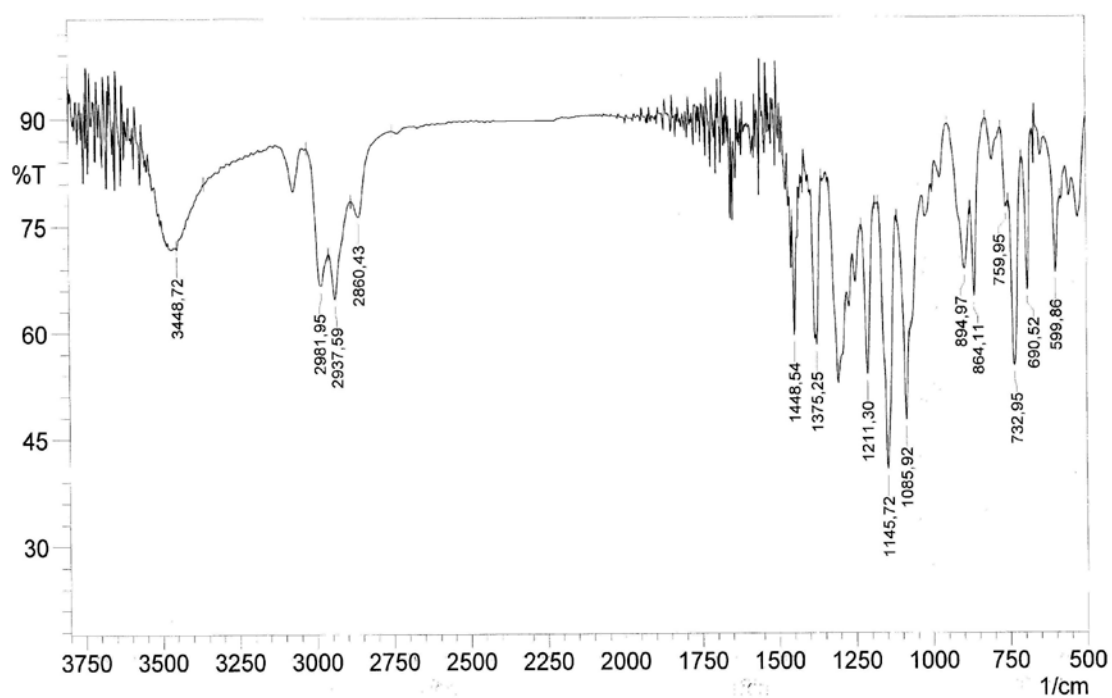
IR y HRMS del compuesto **70**:

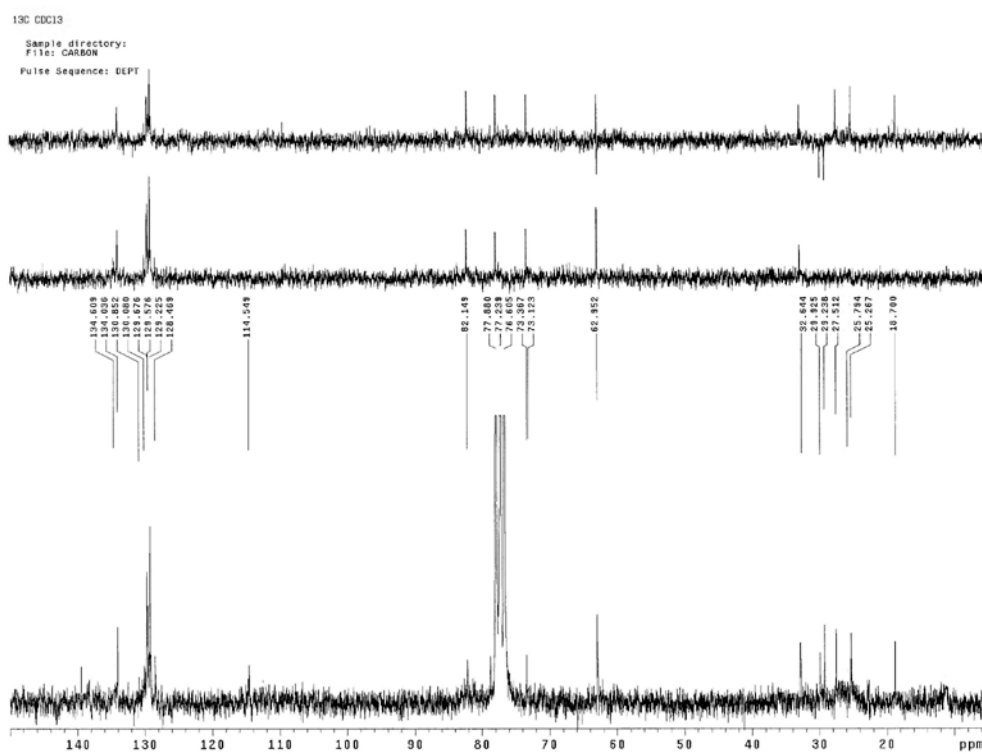
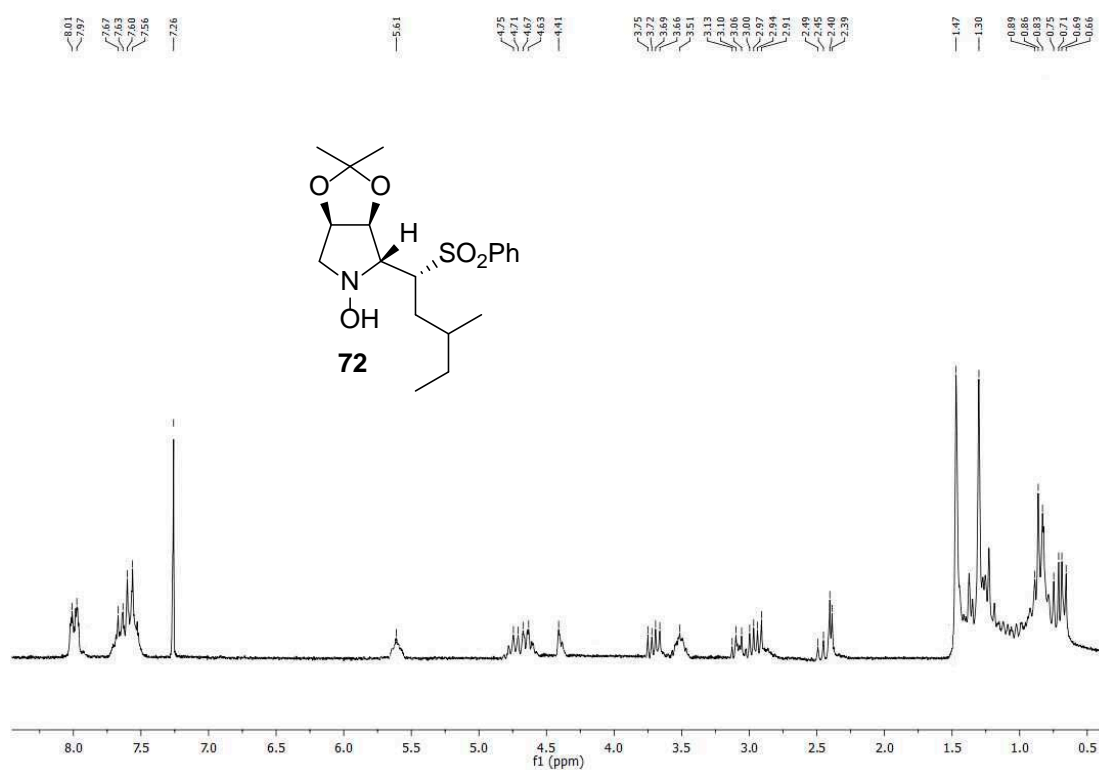


^1H y ^{13}C del compuesto **71**:

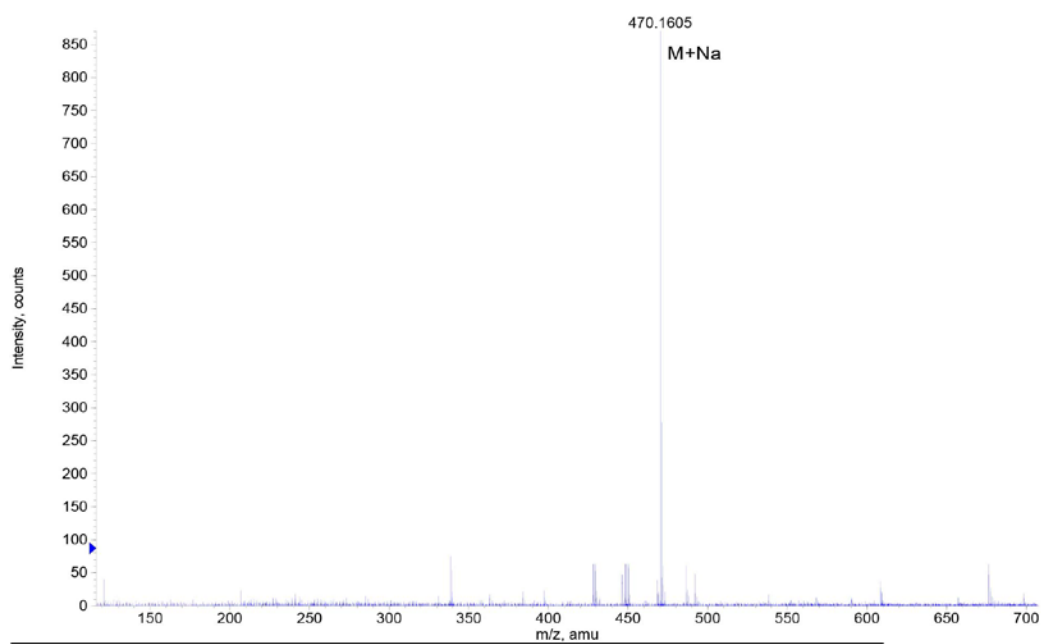
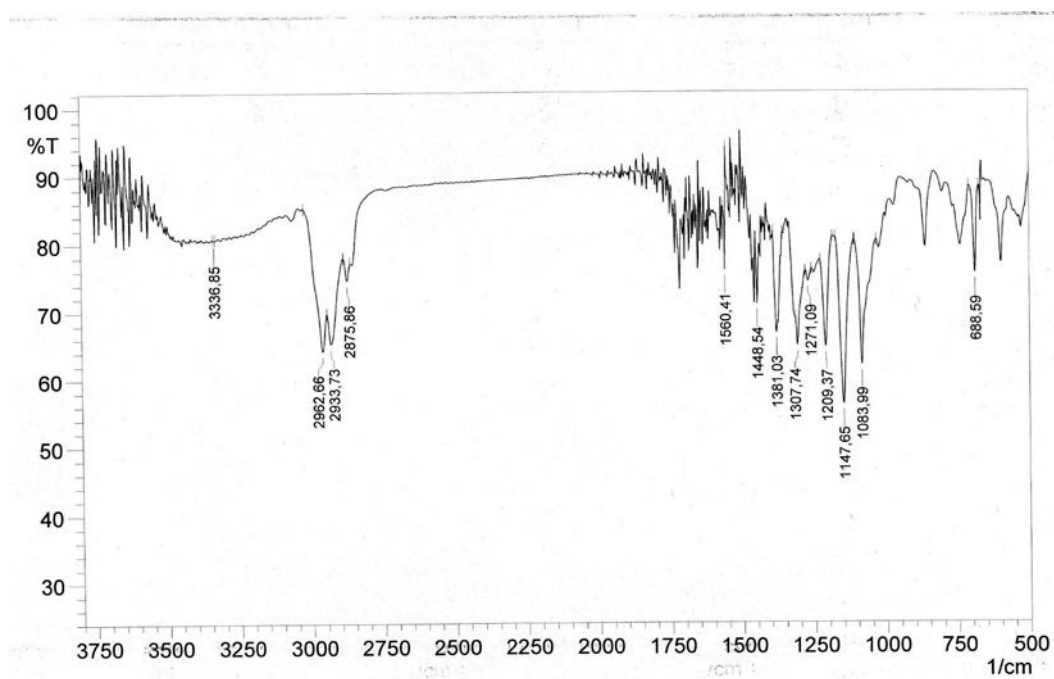


IR y HRMS del compuesto **71**:

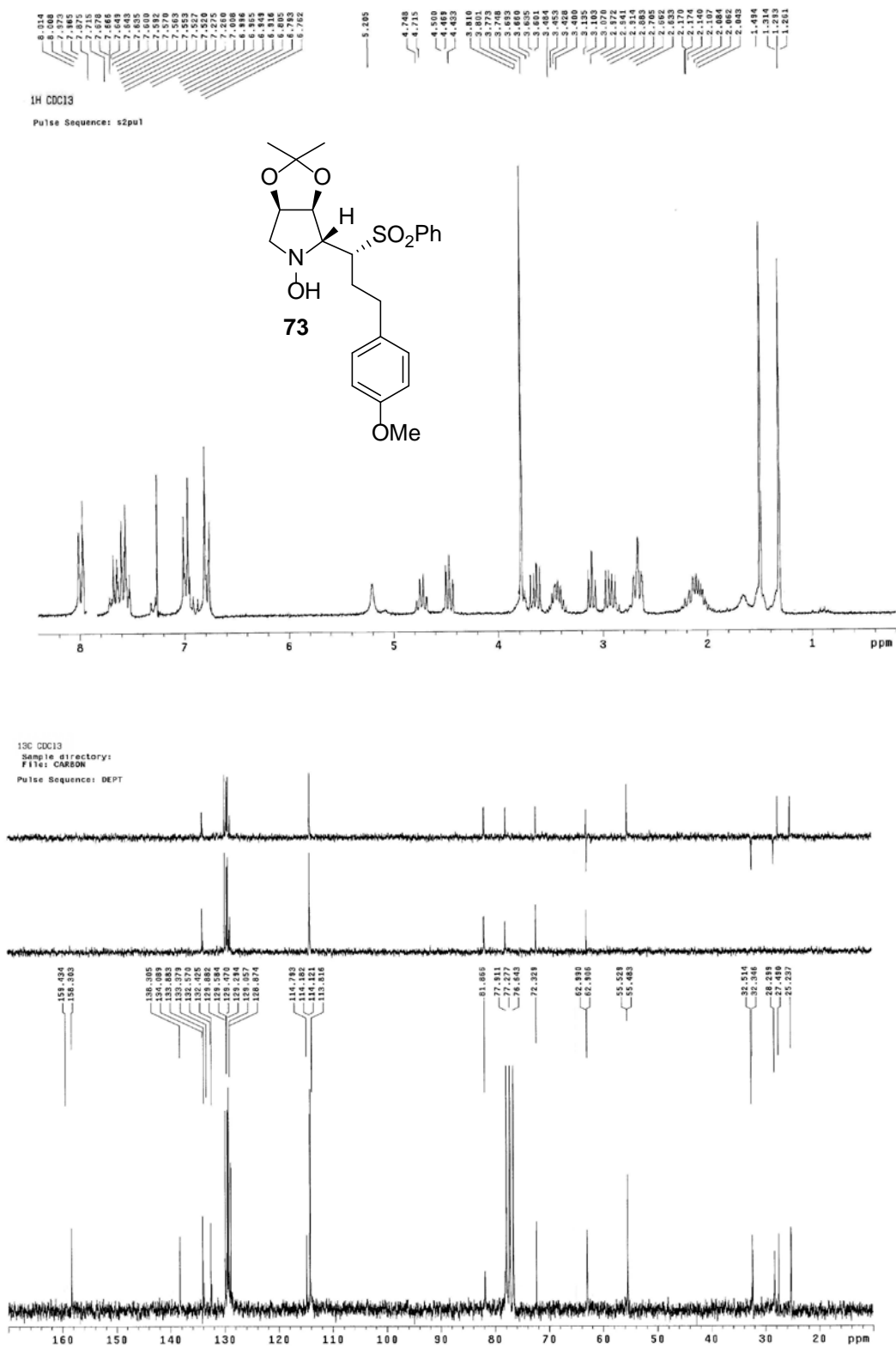


^1H y ^{13}C del compuesto **72**:

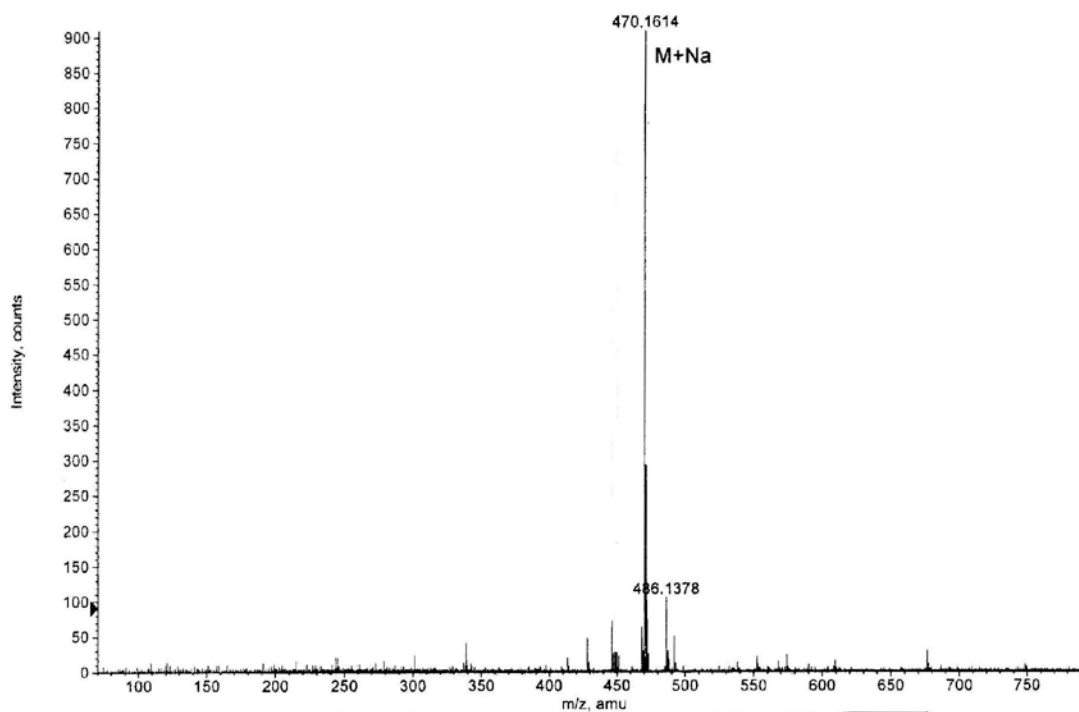
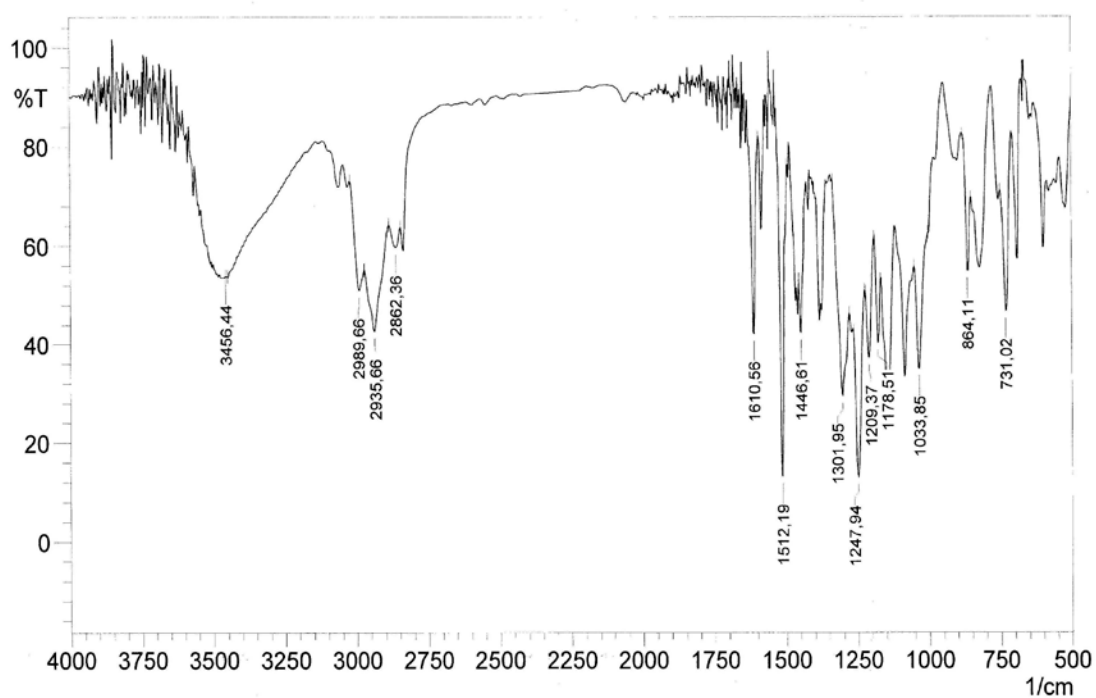
IR y HRMS del compuesto **72**:

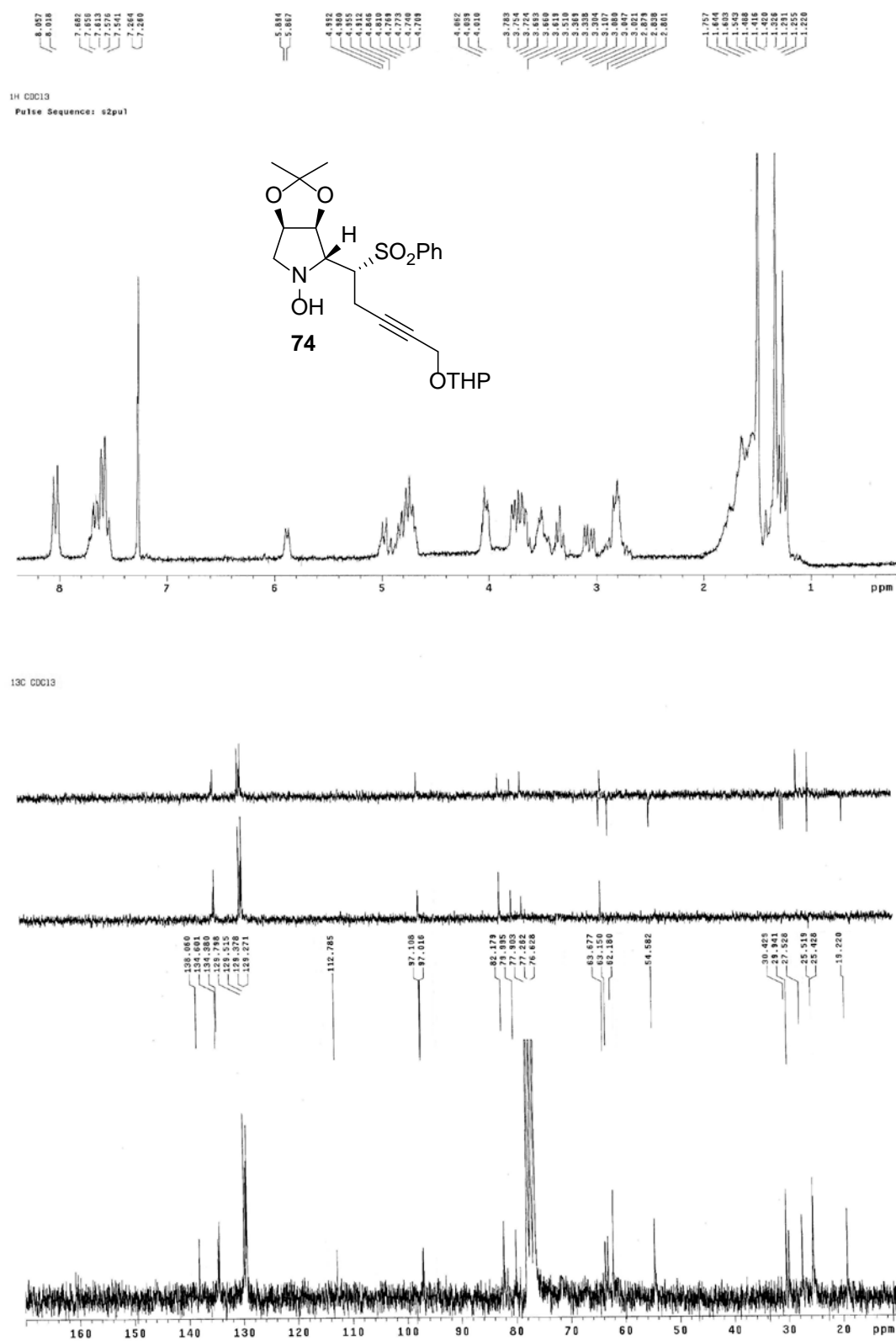


^1H y ^{13}C del compuesto **73**:

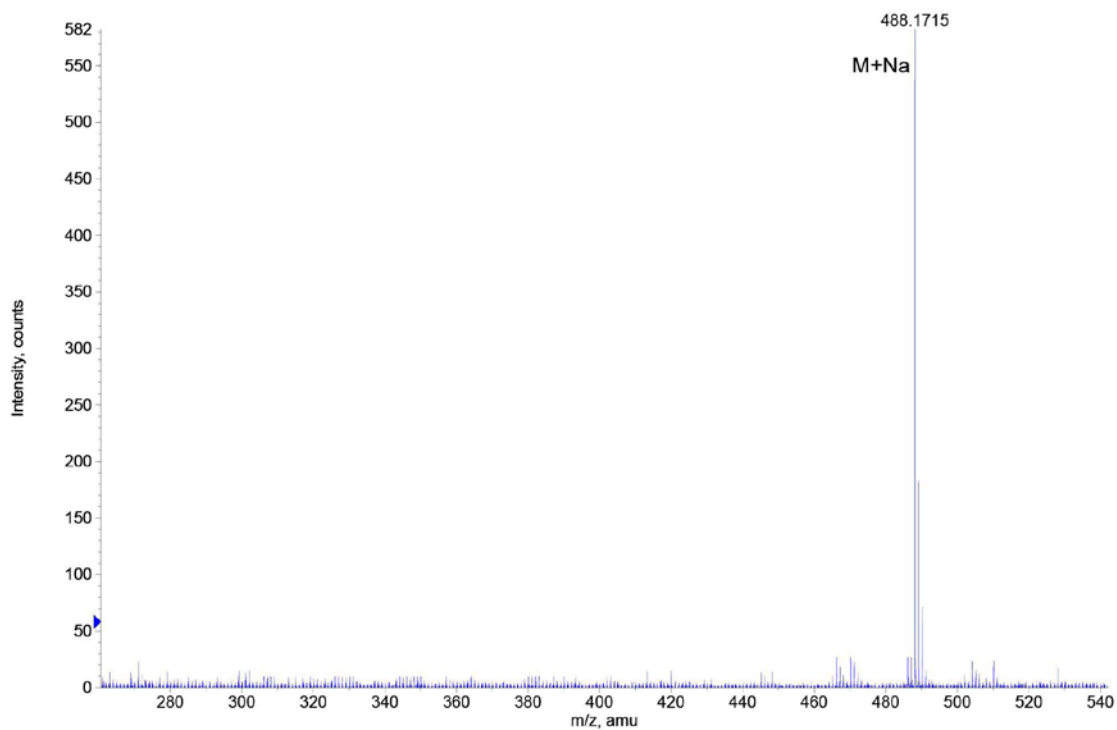
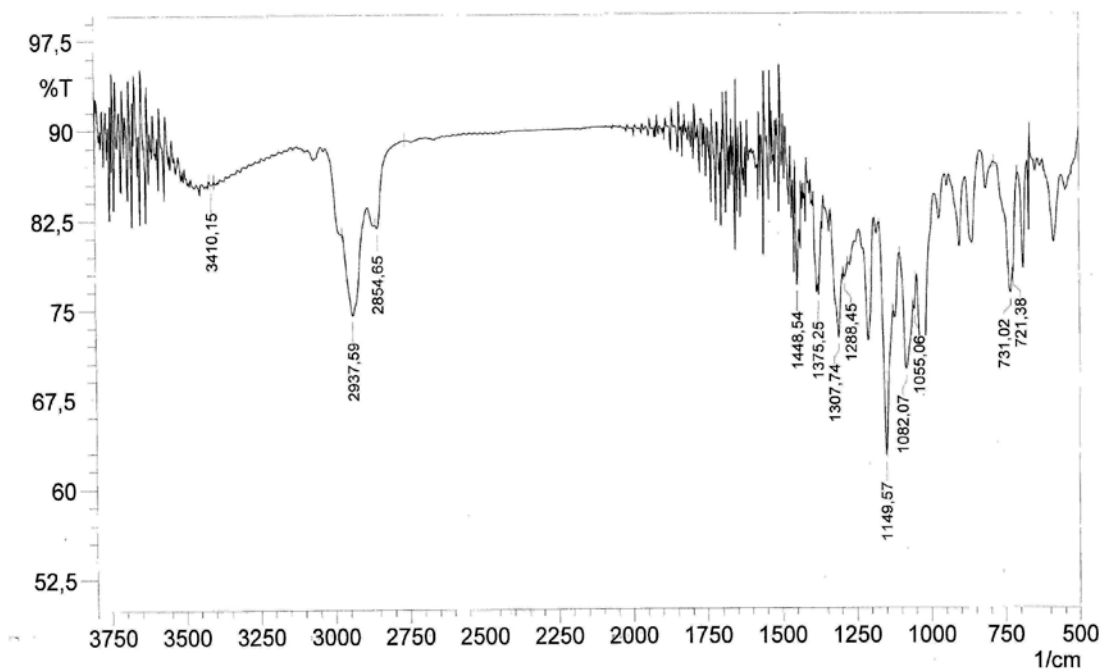


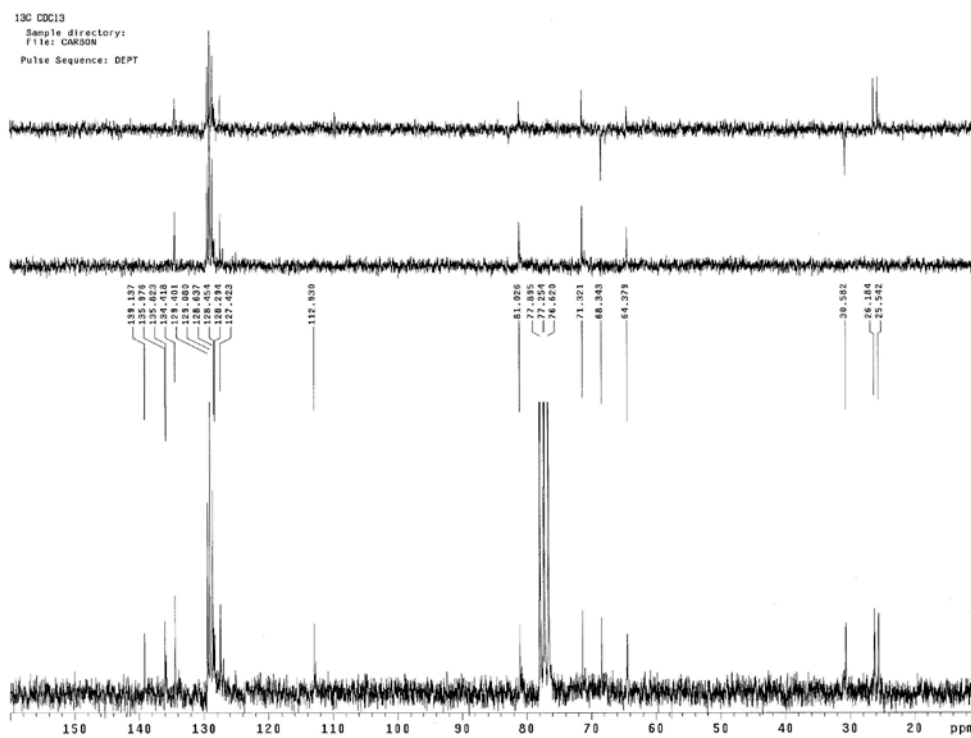
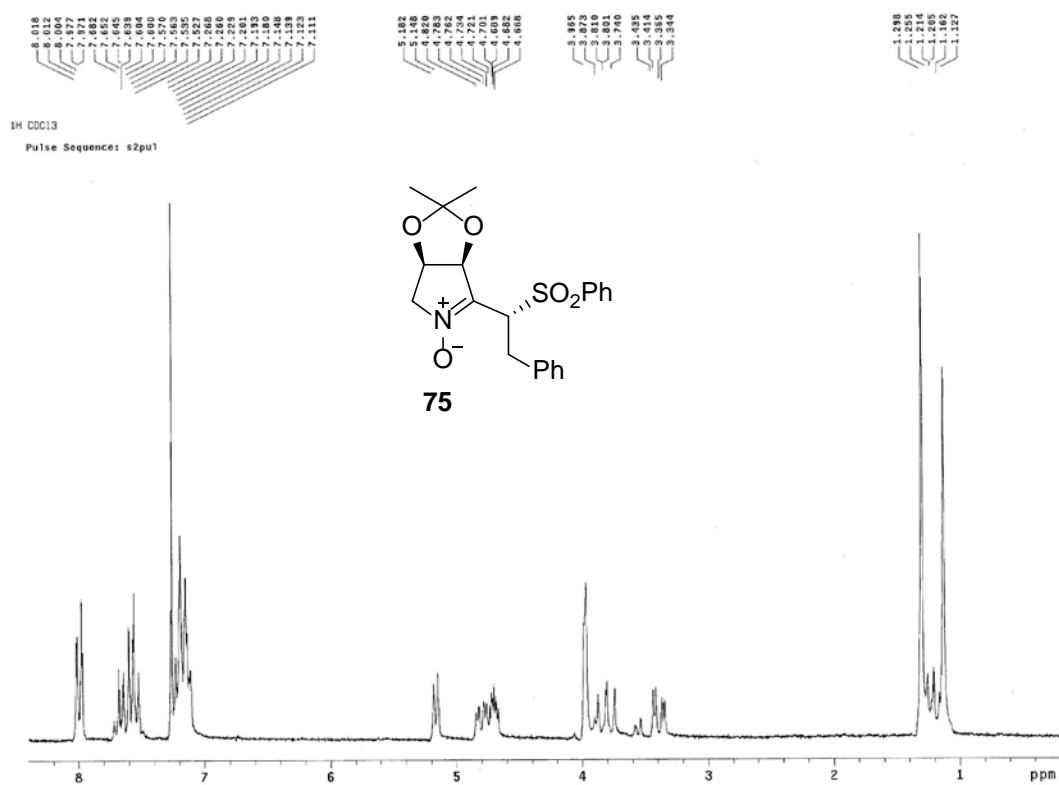
IR y HRMS del compuesto **73**:



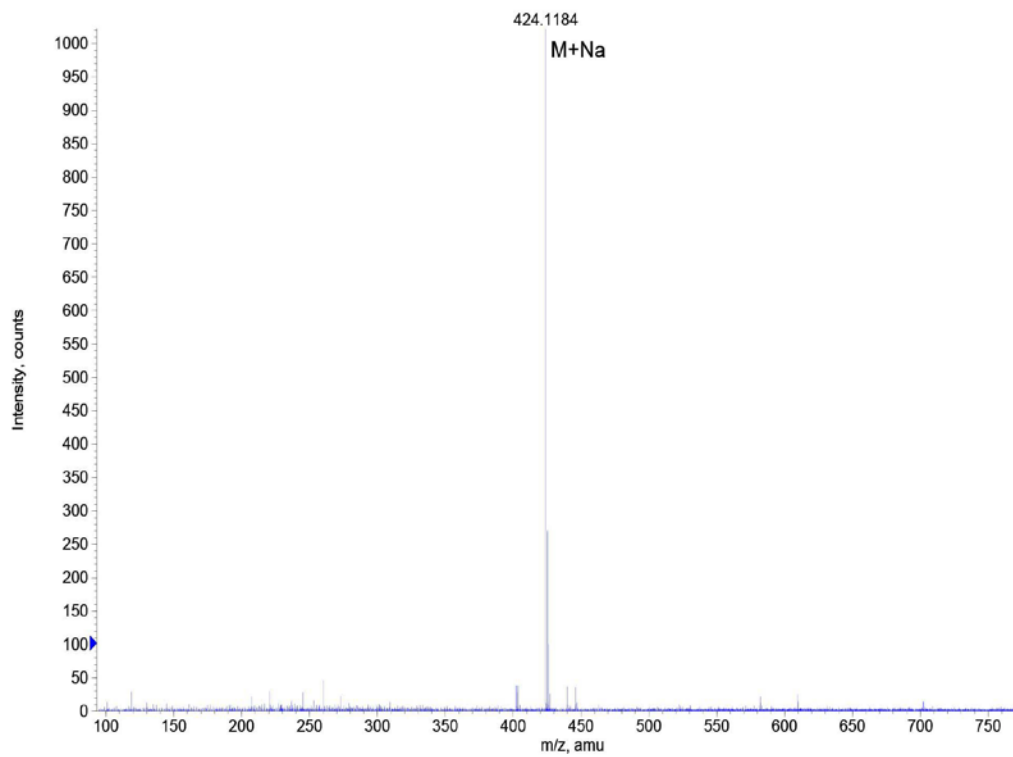
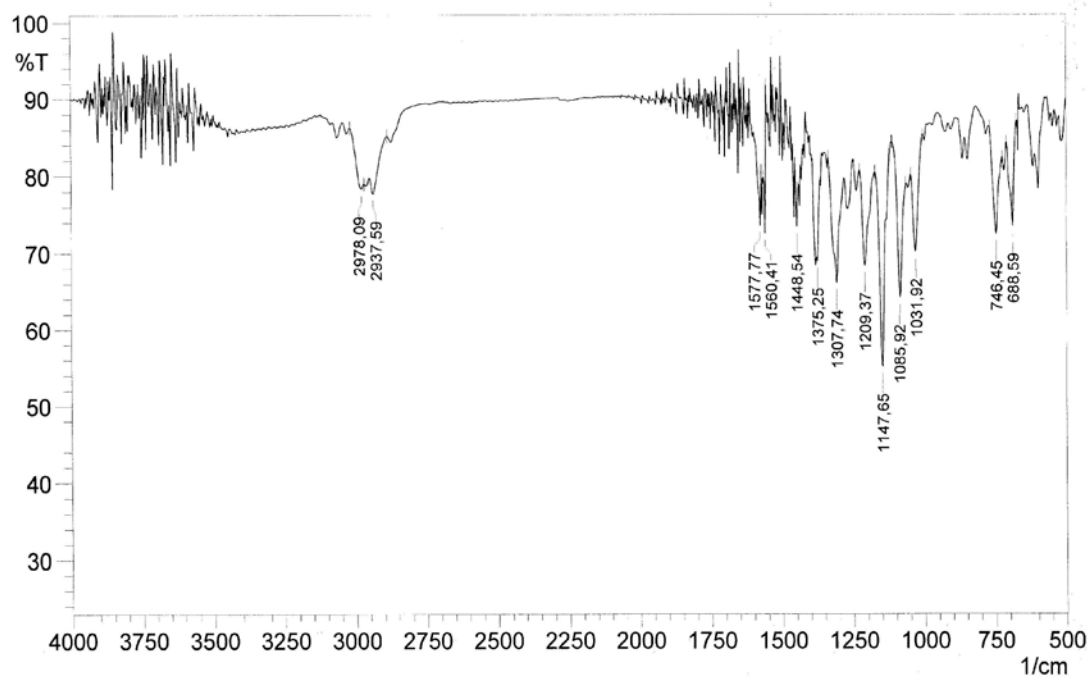
^1H y ^{13}C del compuesto **74**:

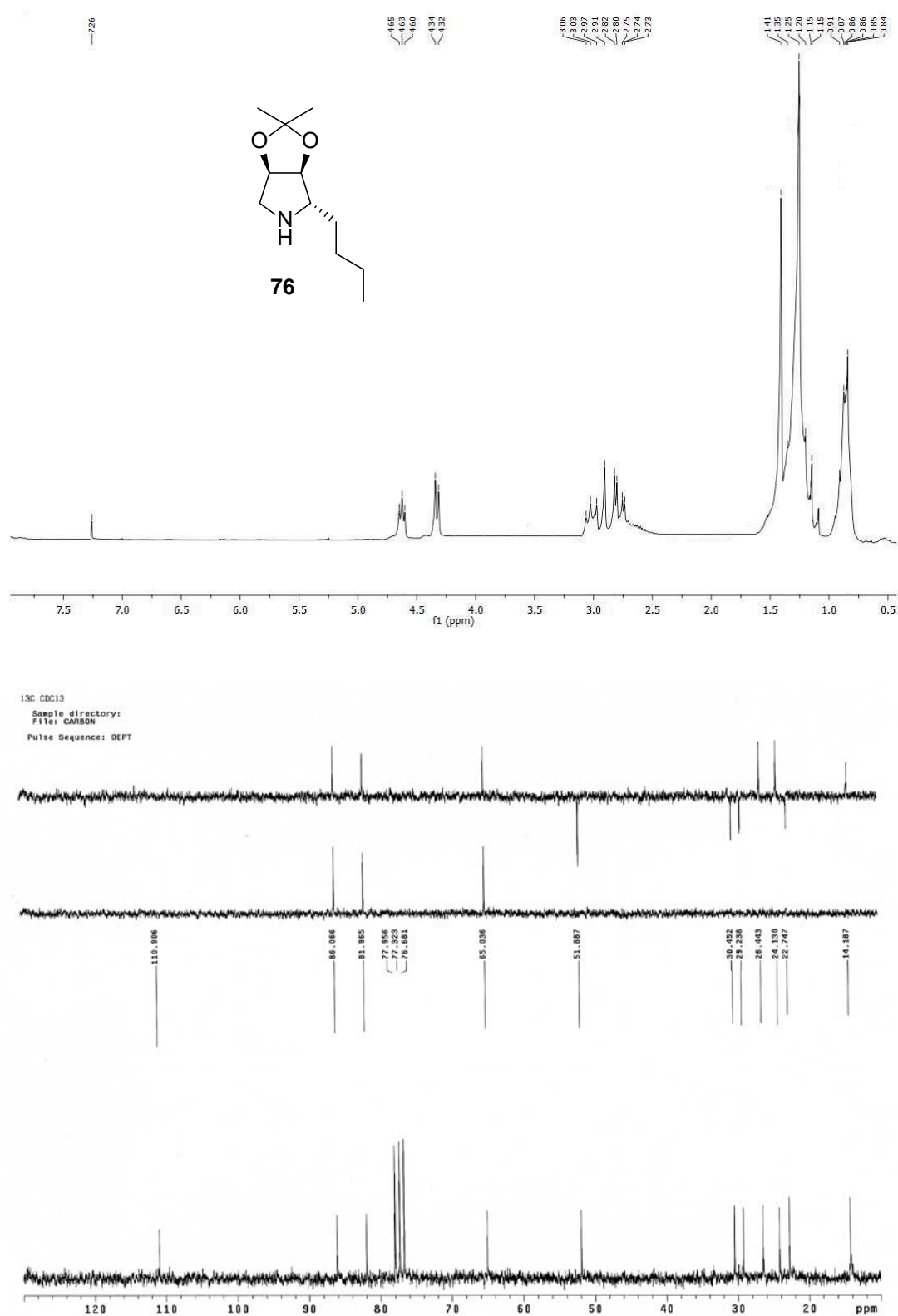
IR y HRMS del compuesto **74**:



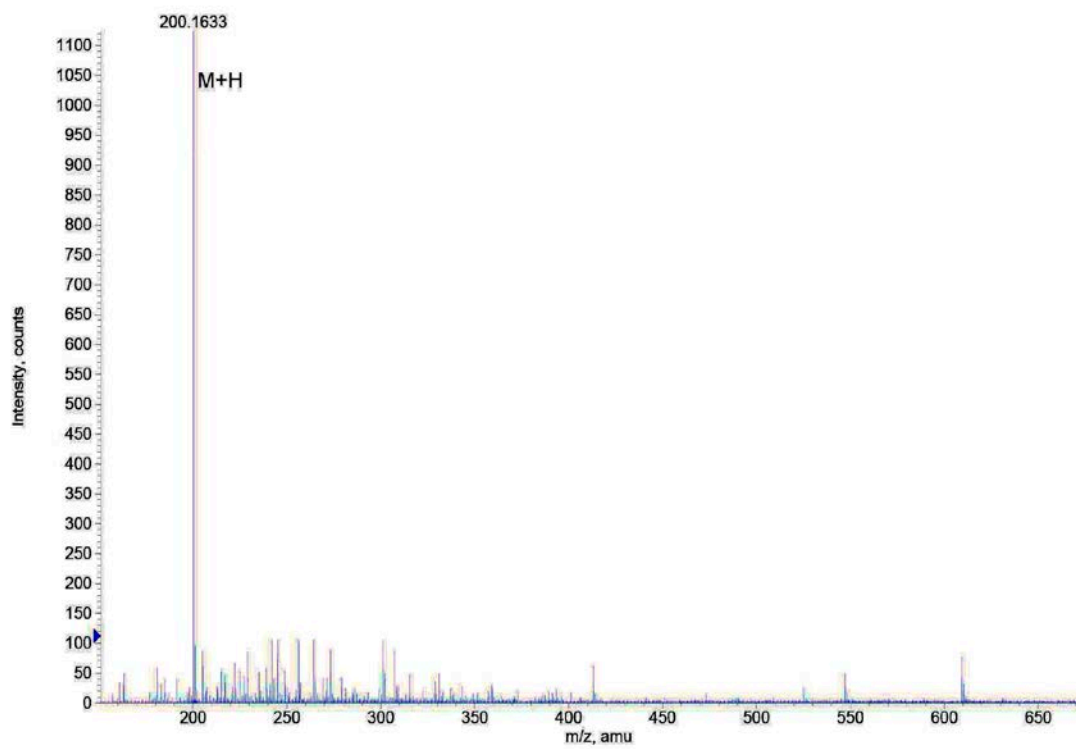
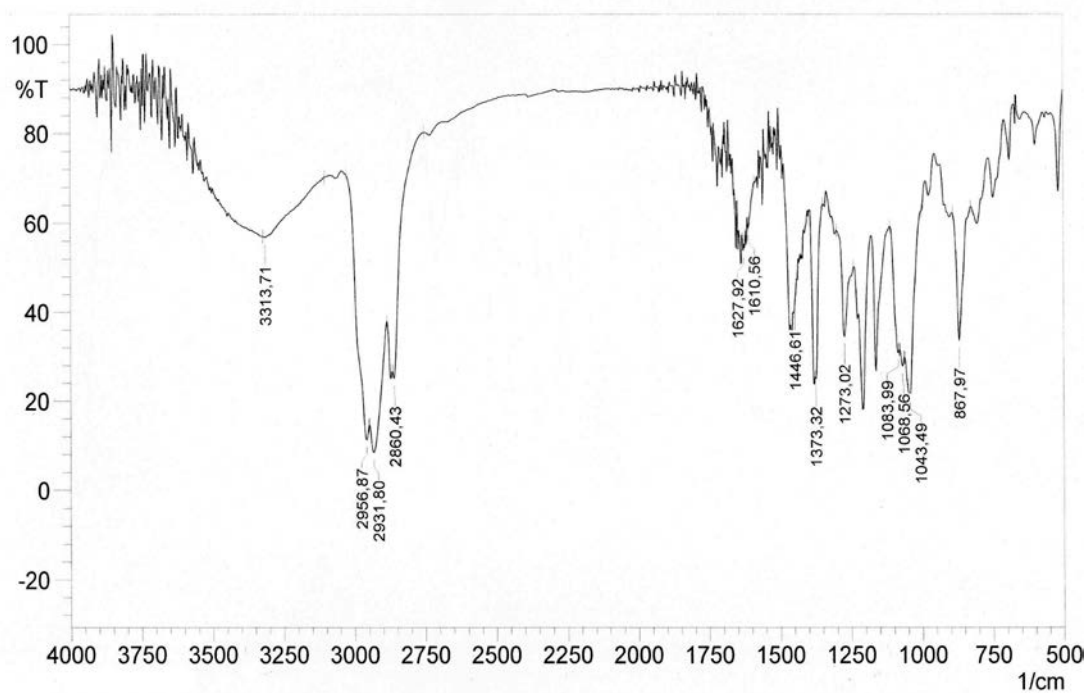
^1H y ^{13}C del compuesto **75**:

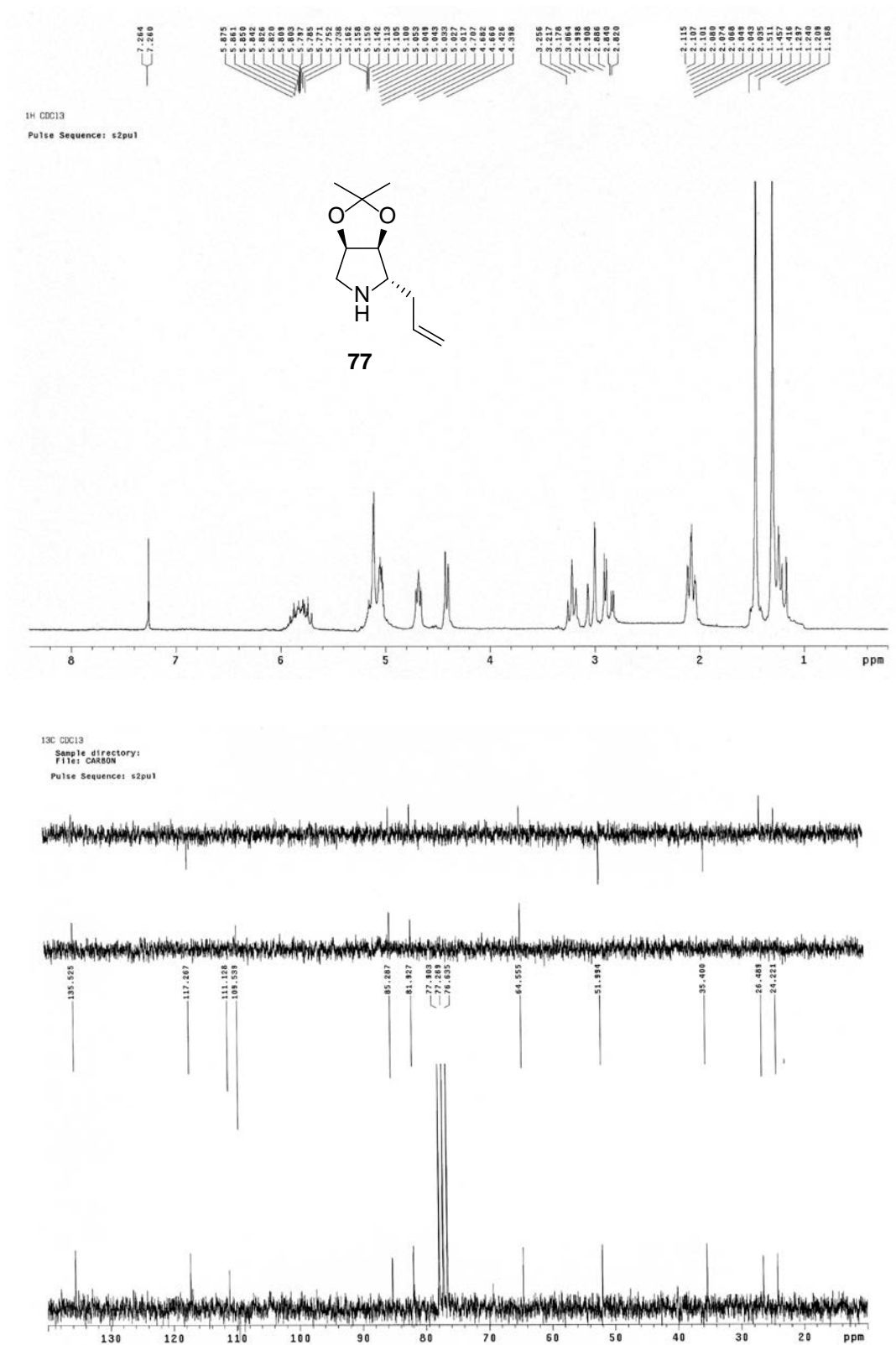
IR y HRMS del compuesto **75**:



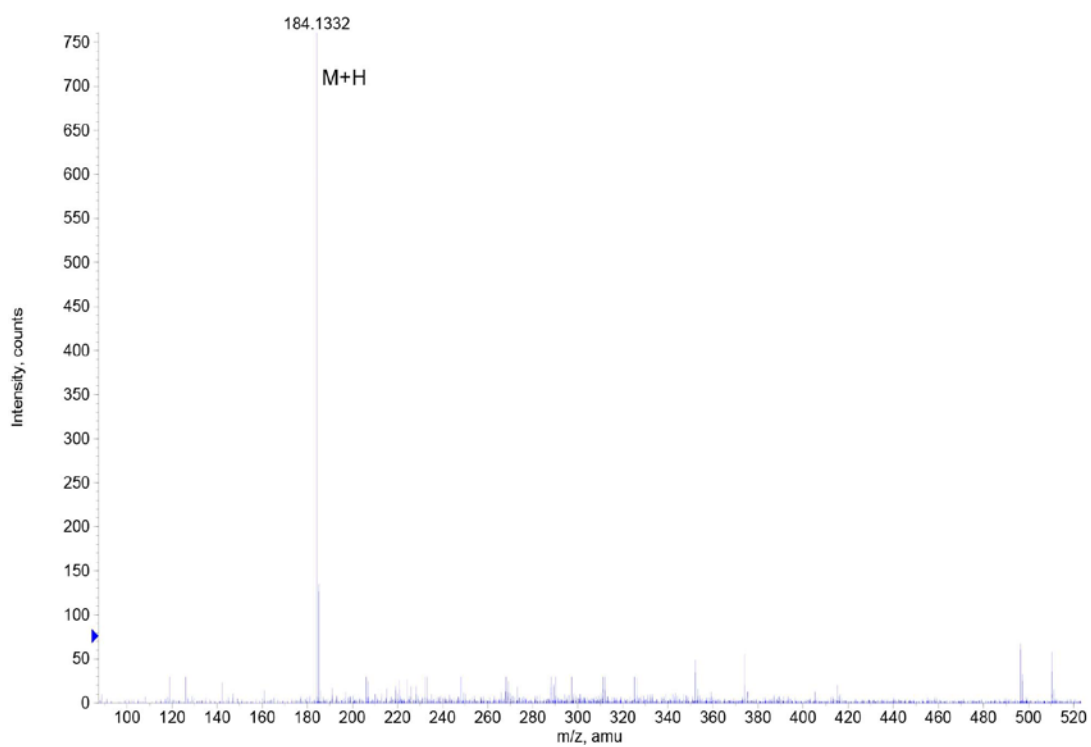
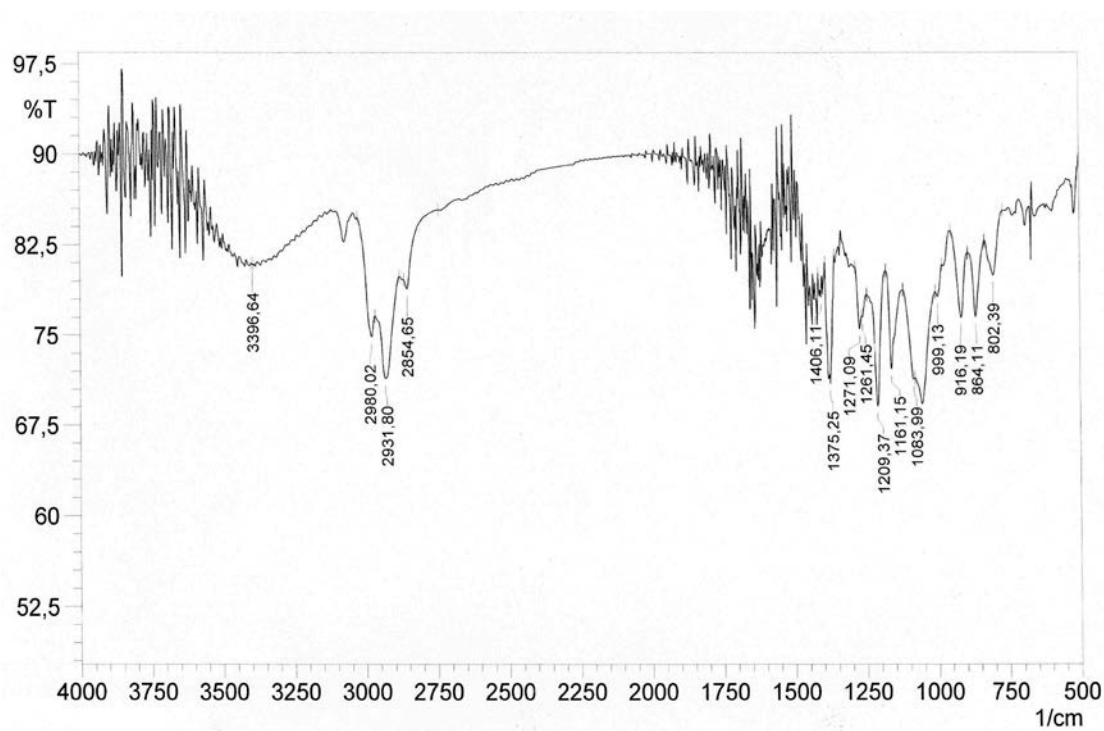
^1H y ^{13}C del compuesto **76**:

IR y HRMS del compuesto **76**:

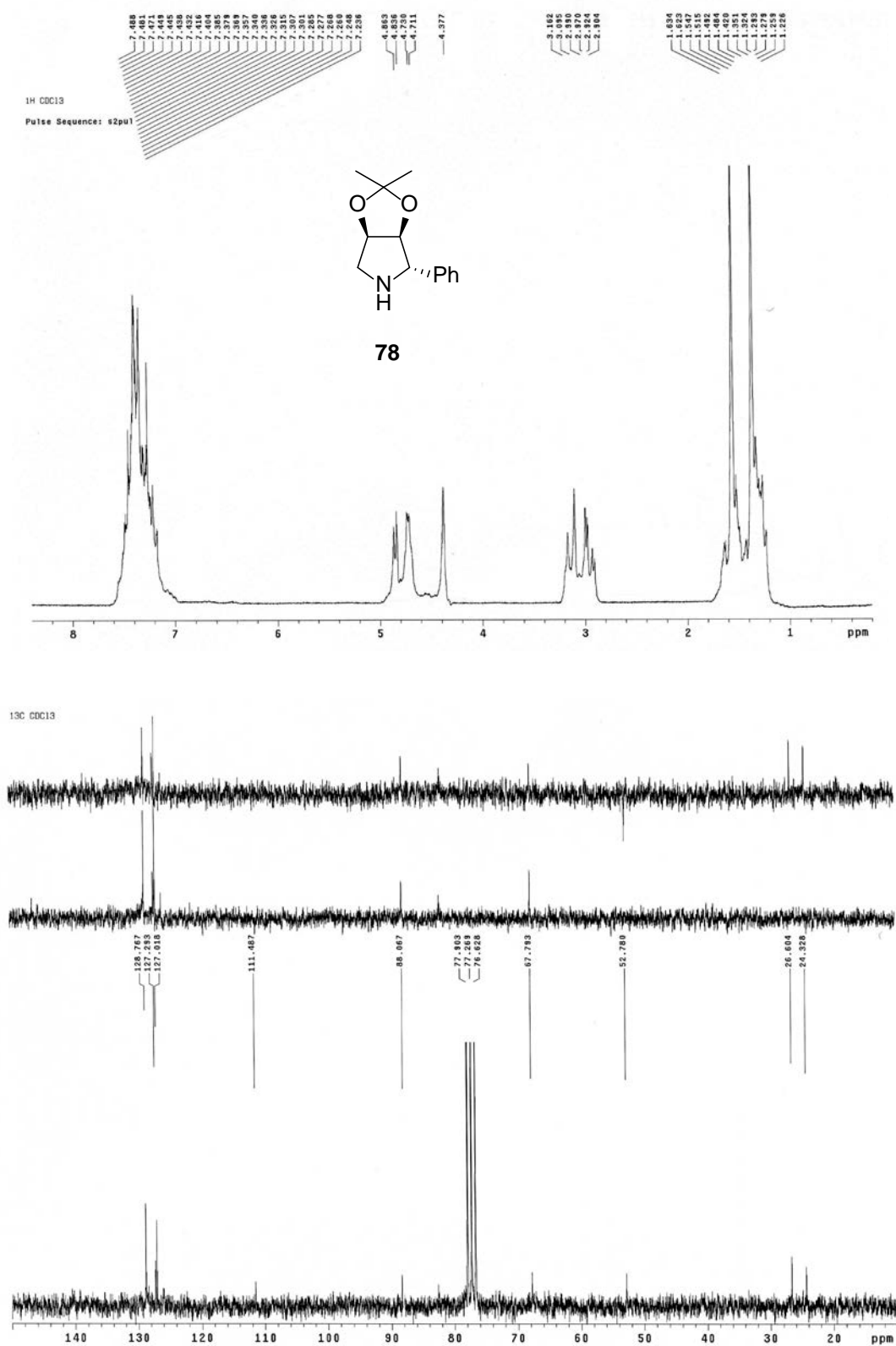


^1H y ^{13}C del compuesto **77**:

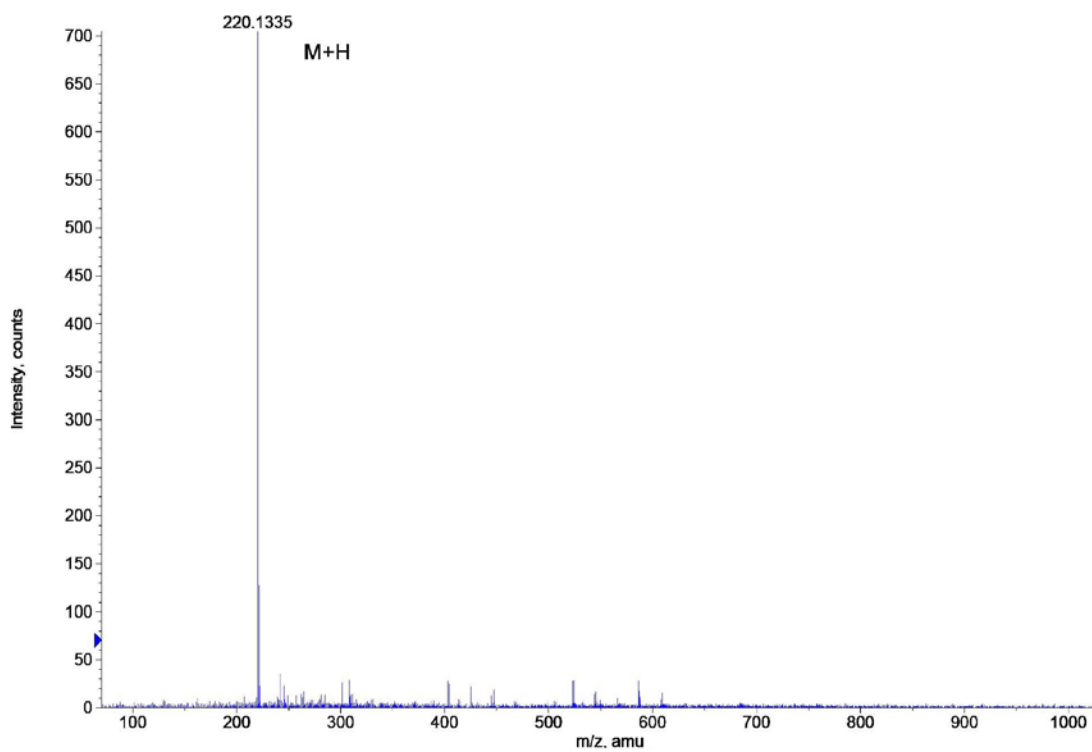
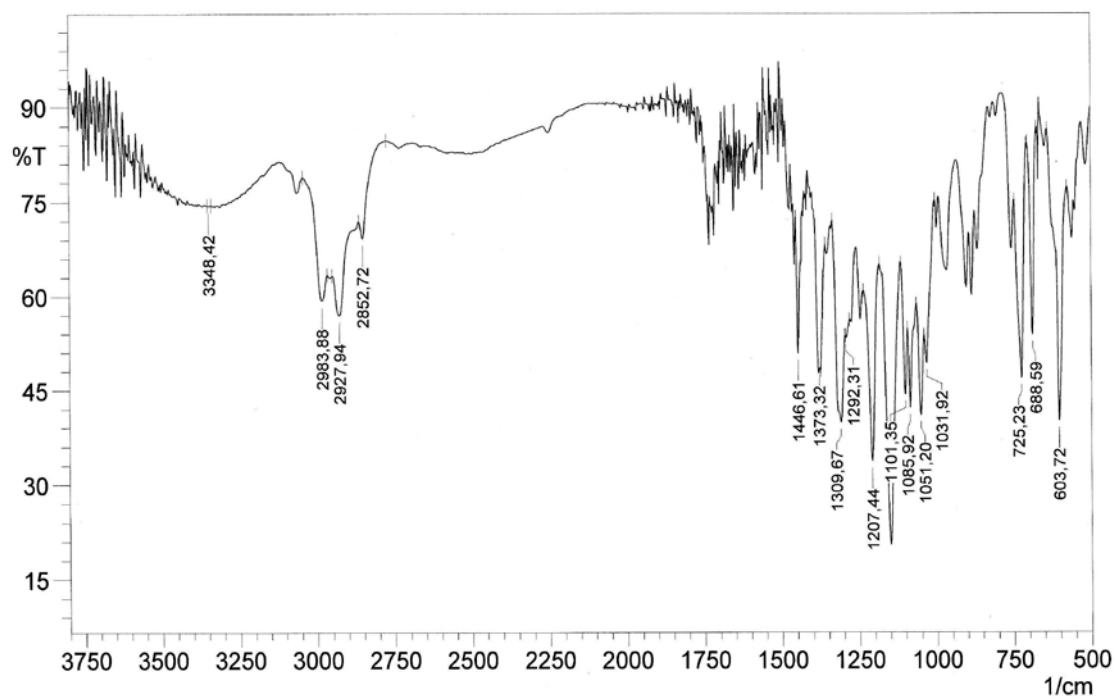
IR y HRMS del compuesto **77**:



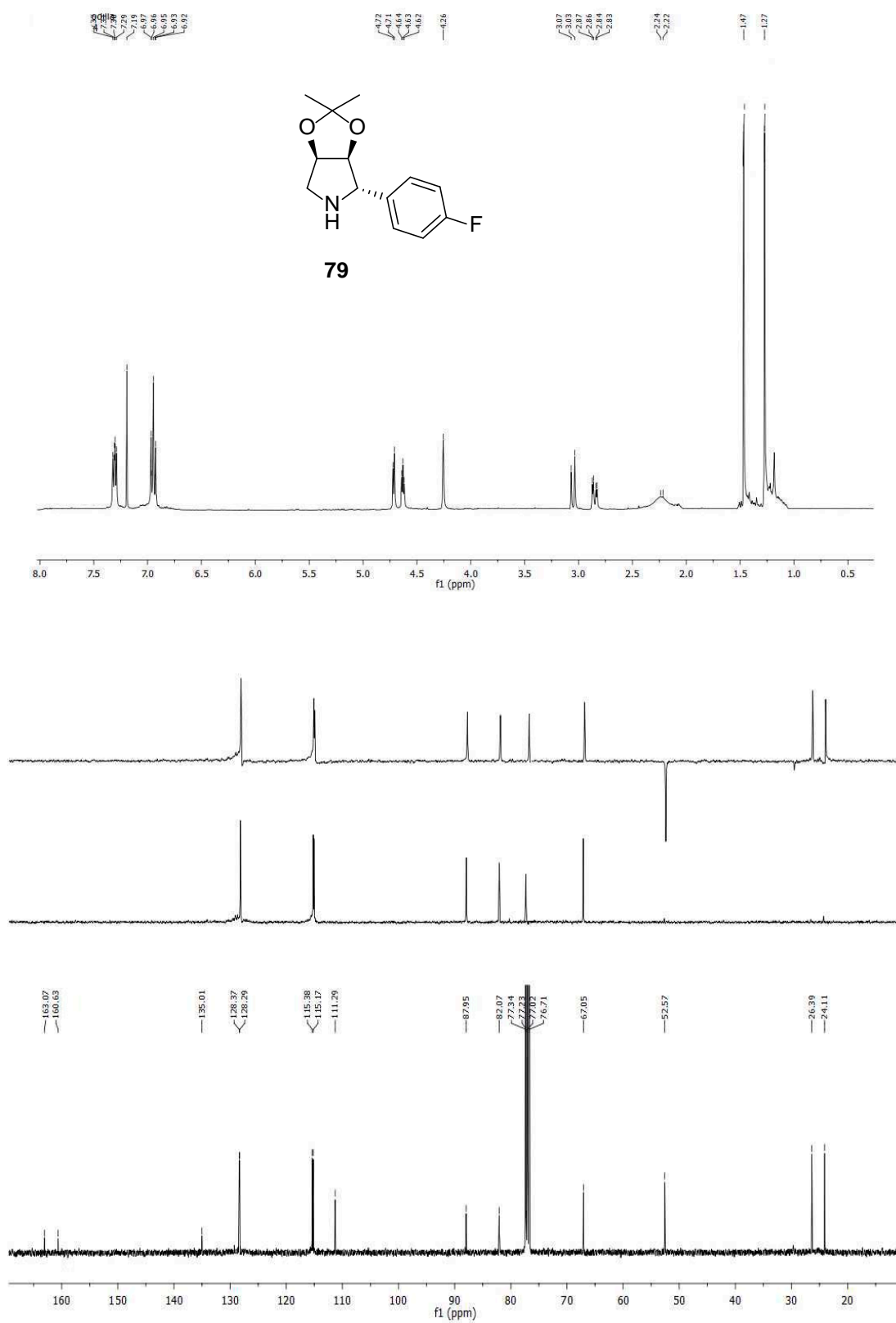
^1H y ^{13}C del compuesto **78**:



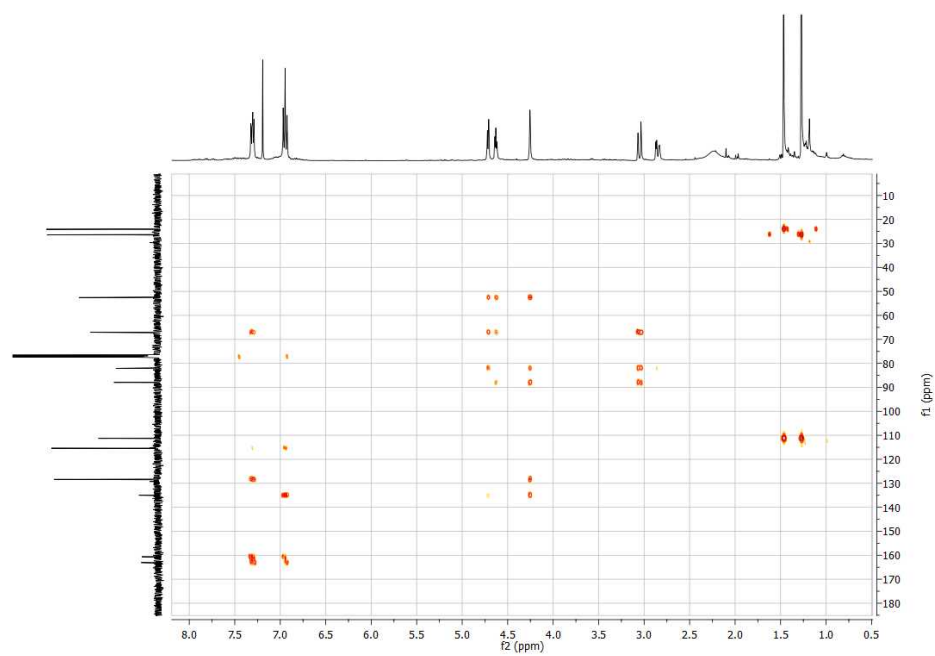
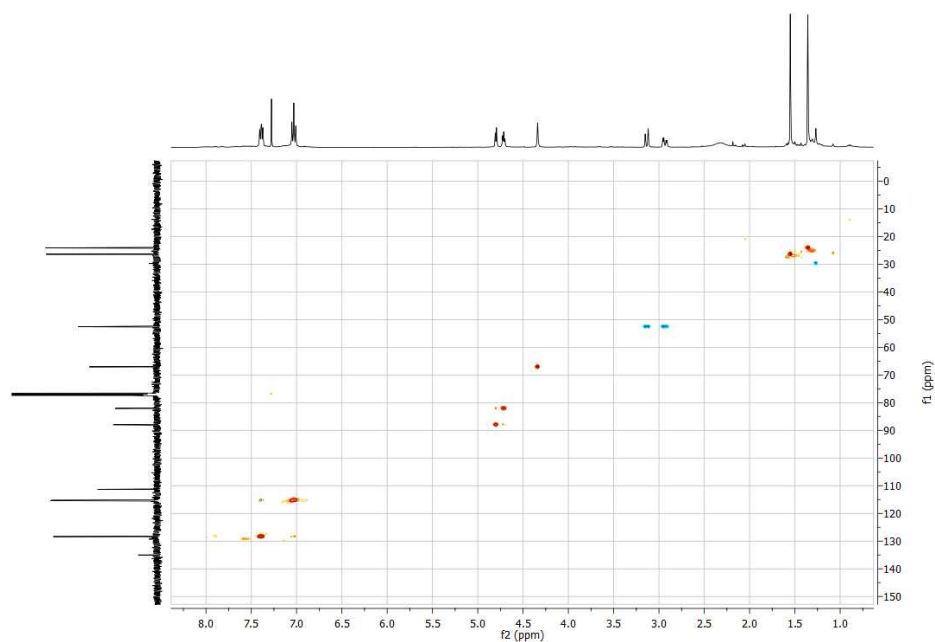
IR y HRMS del compuesto **78**:



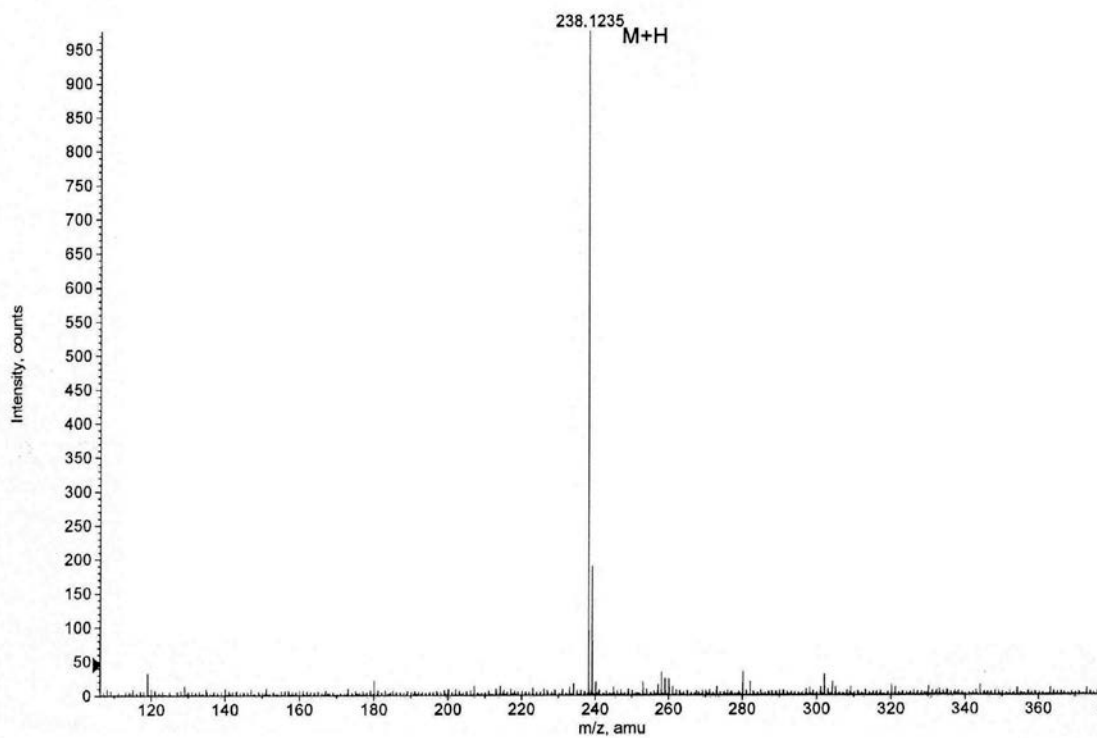
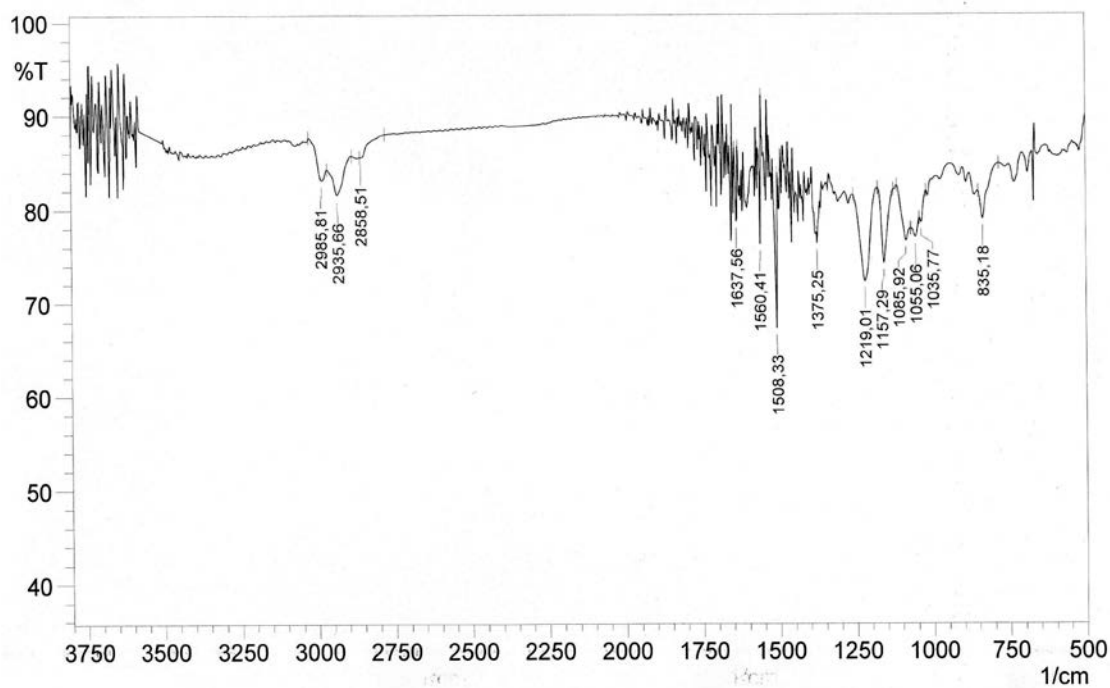
^1H y ^{13}C del compuesto **79**:

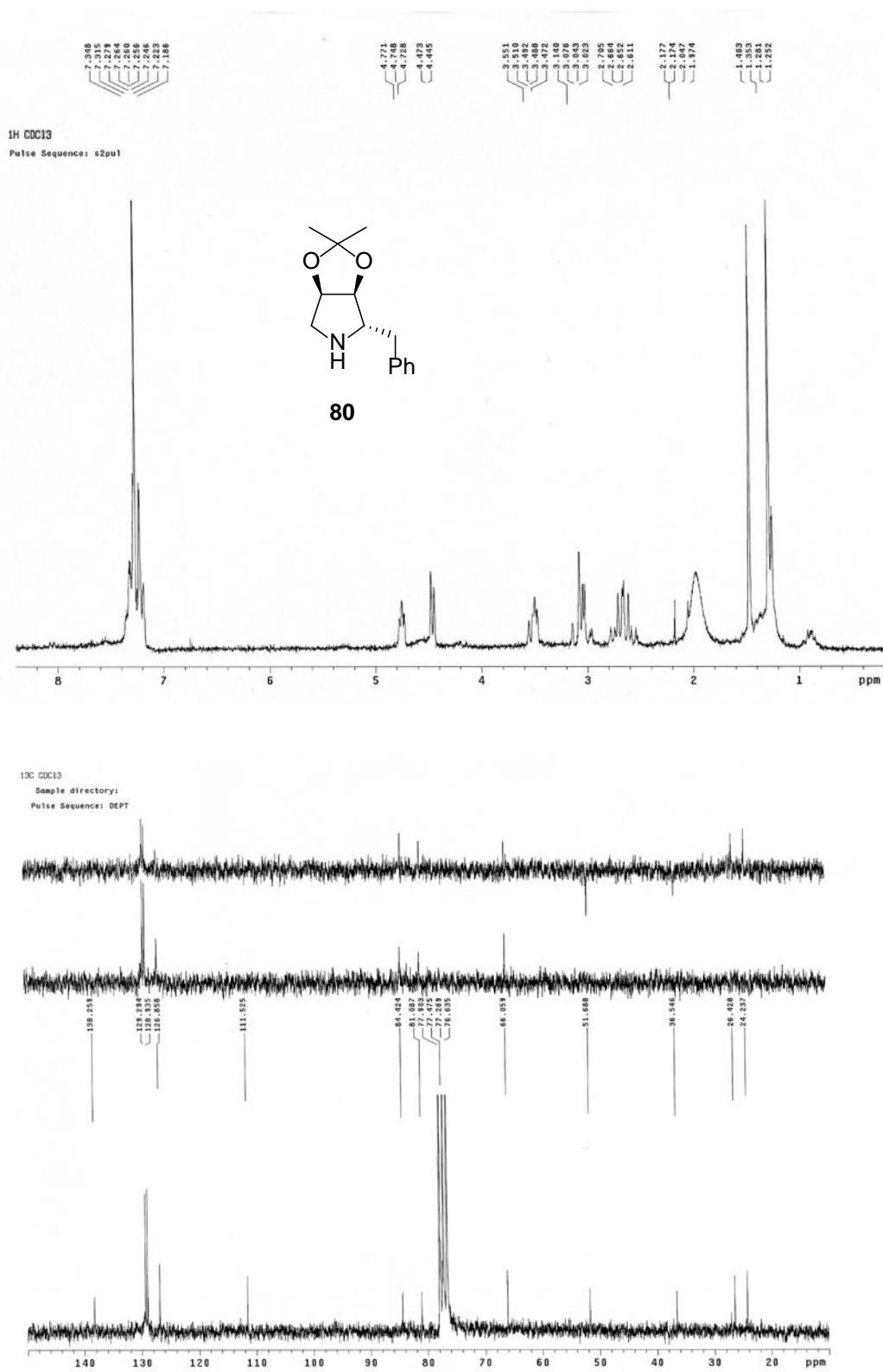


HSQC y HMBC de 79:

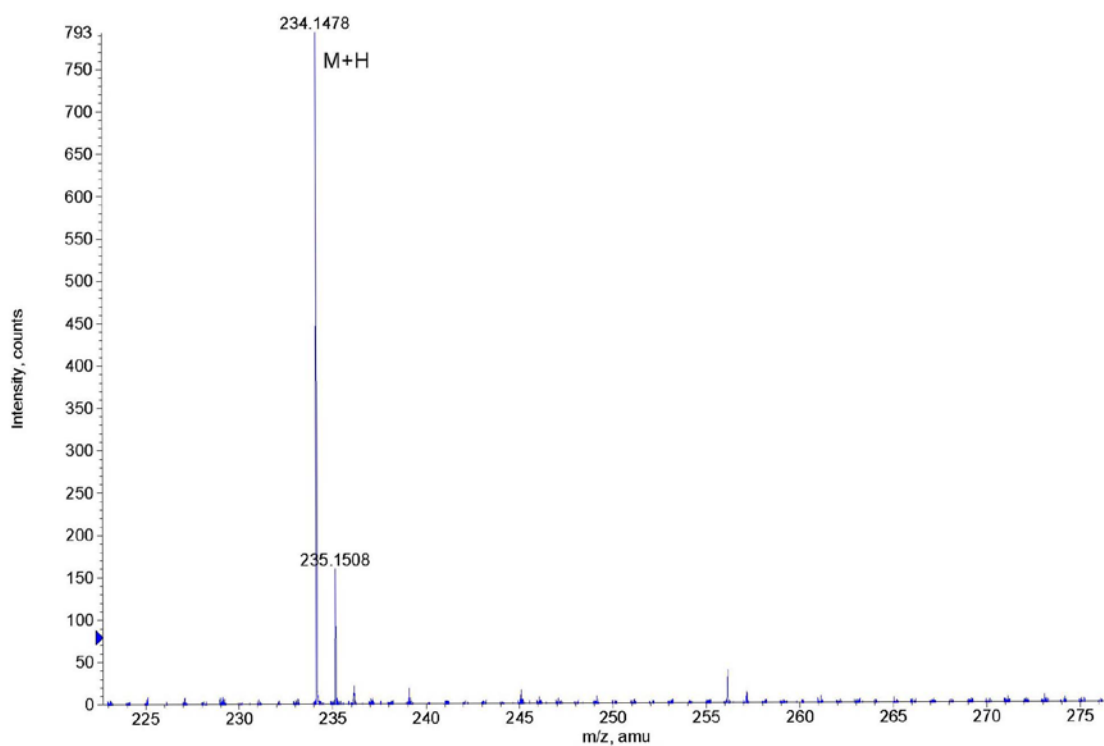
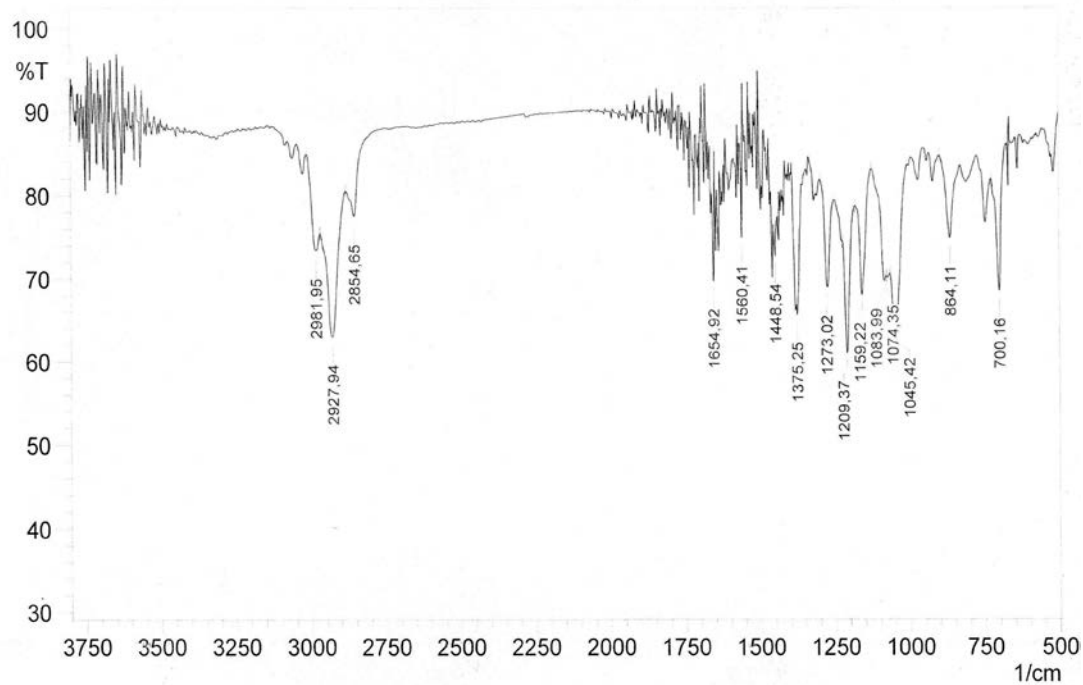


IR y HRMS del compuesto **79**:

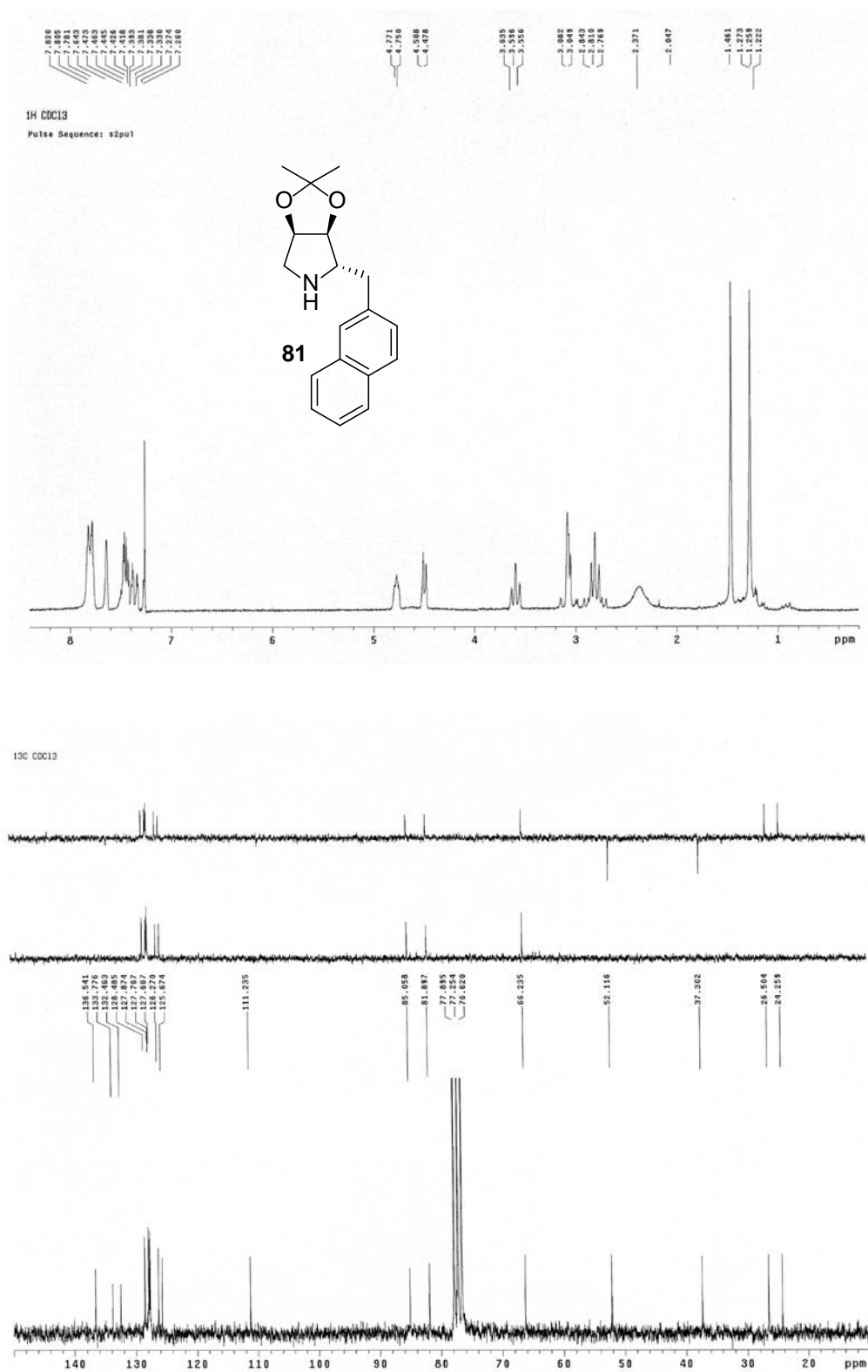


^1H y ^{13}C del compuesto **80**:

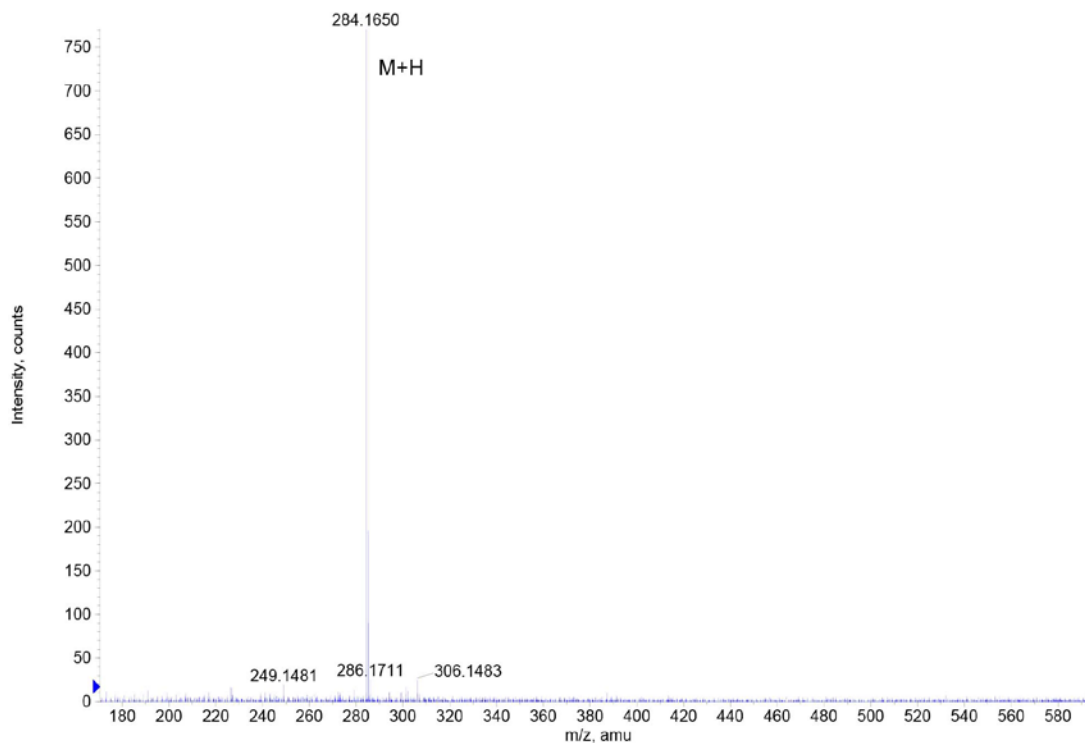
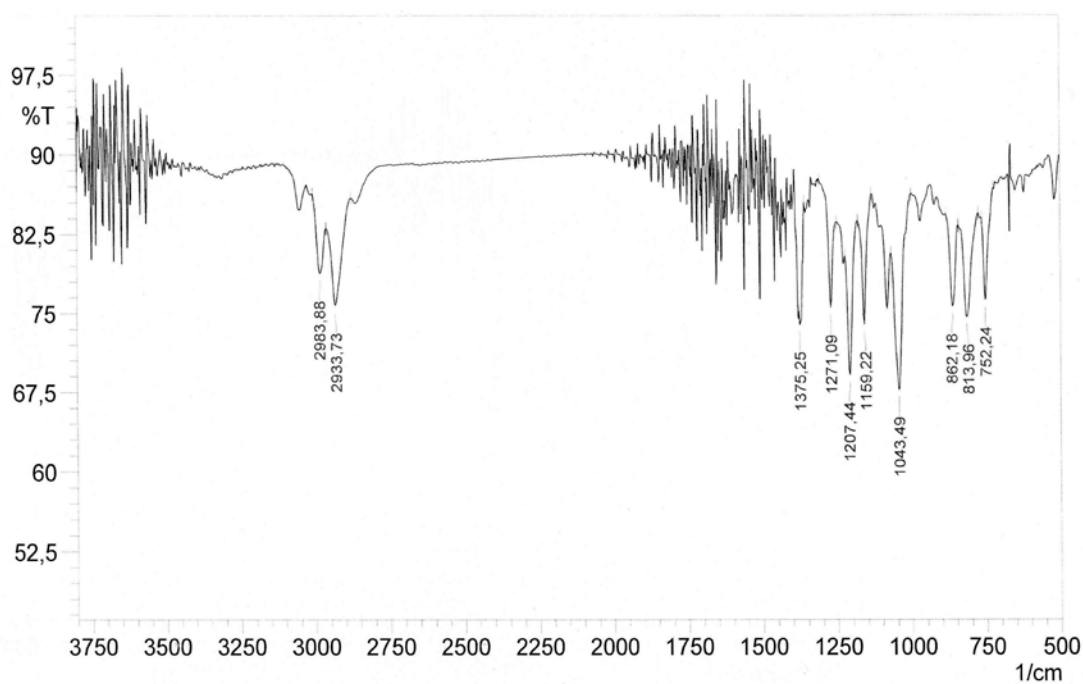
IR y HRMS del compuesto **80**:

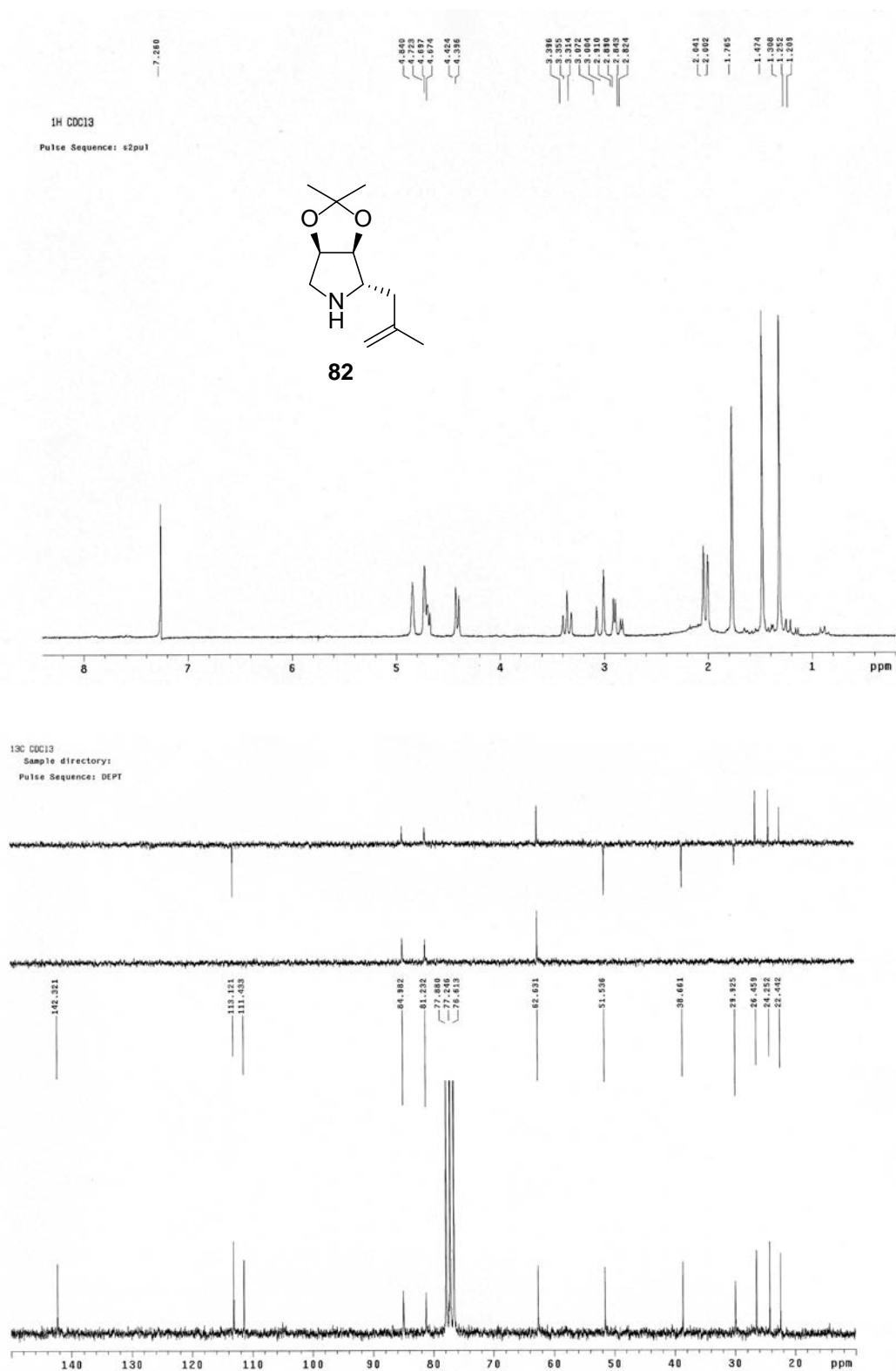


^1H y ^{13}C del compuesto **81**:

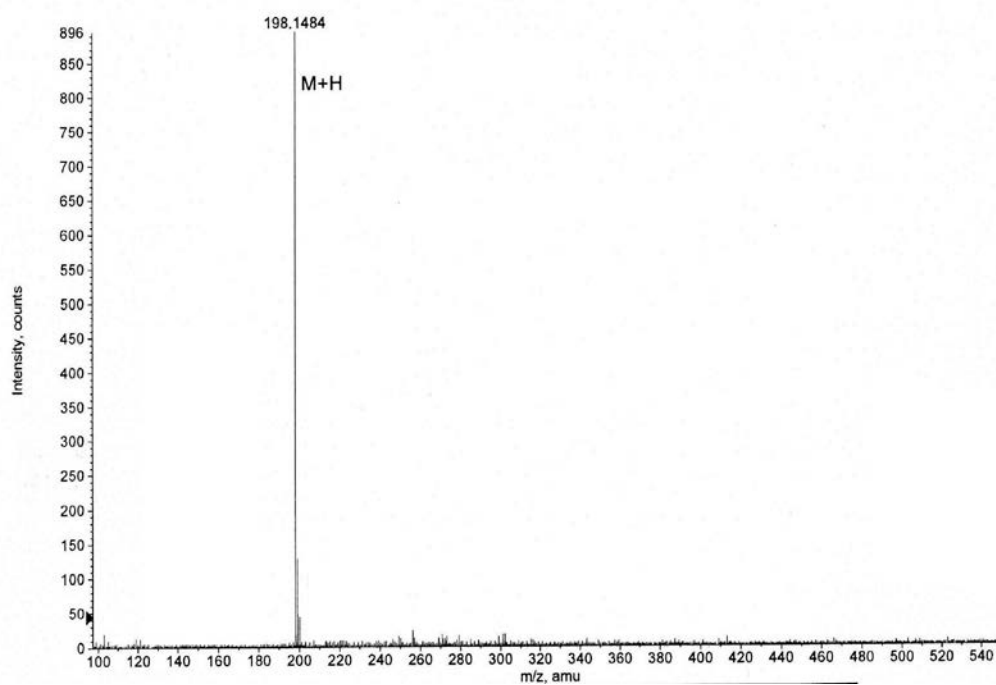
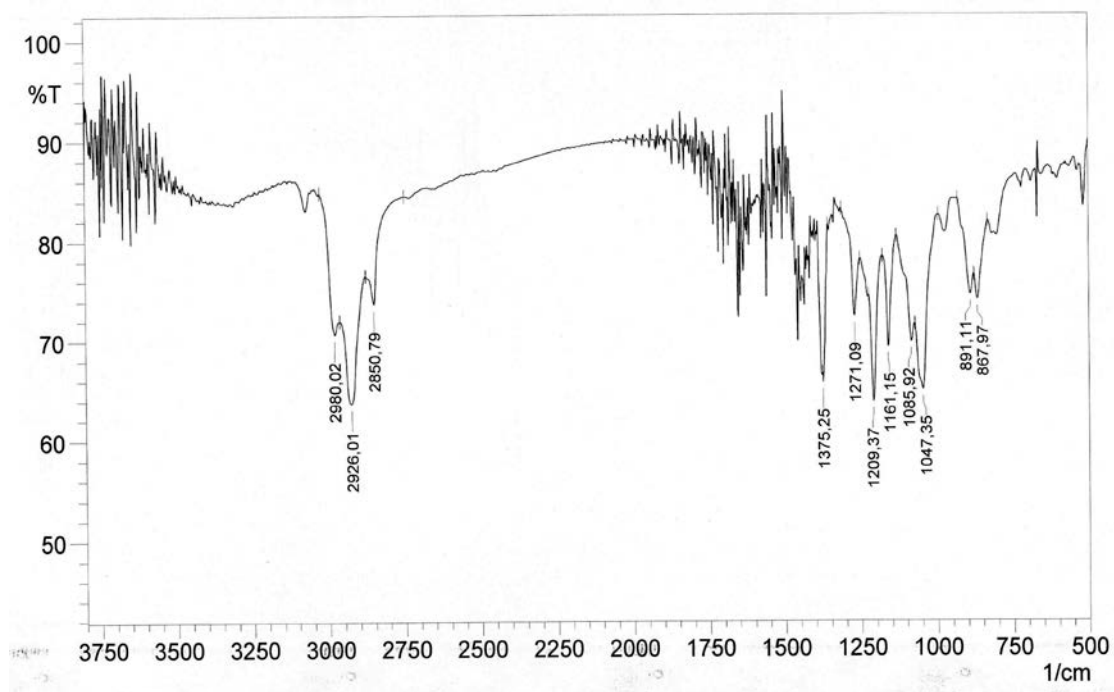


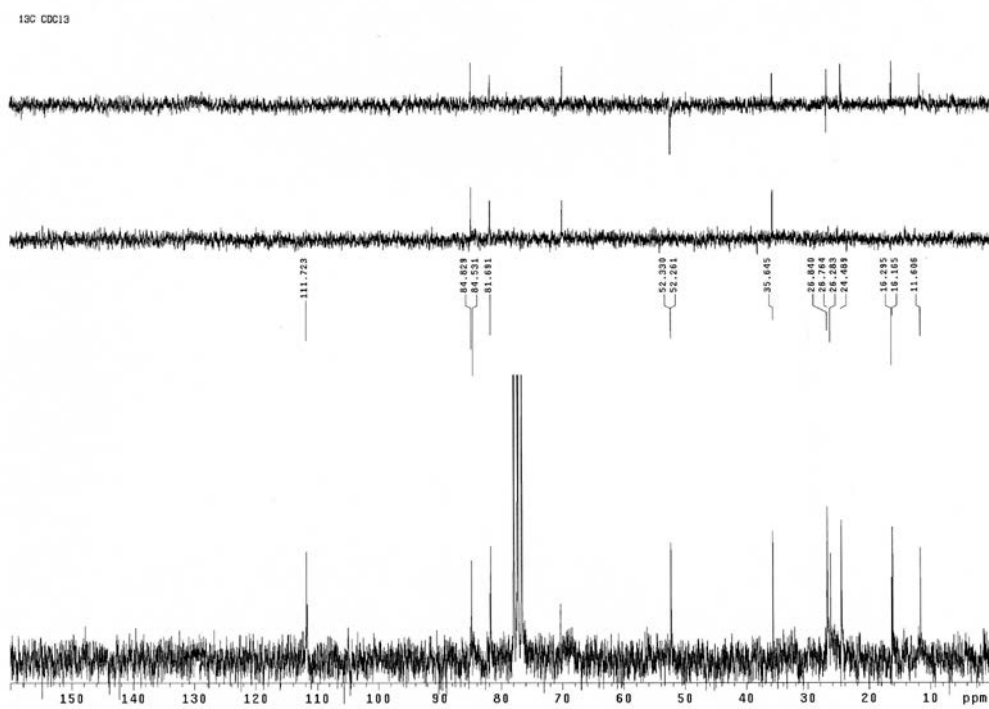
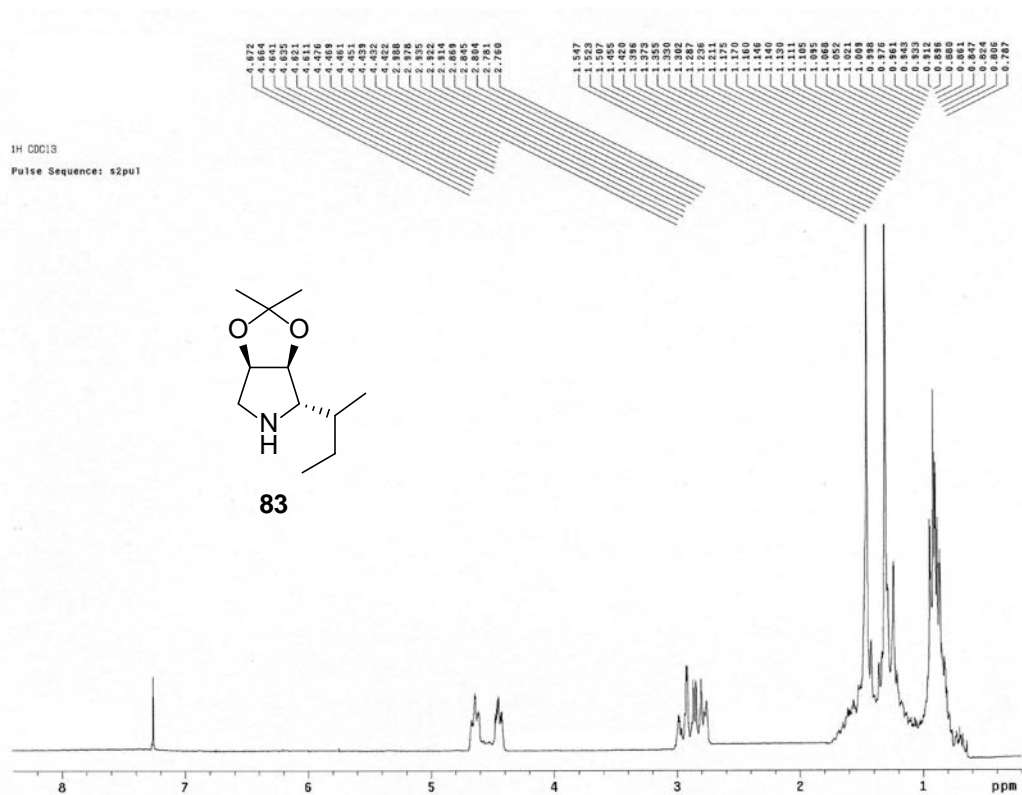
IR y HRMS del compuesto **81**:



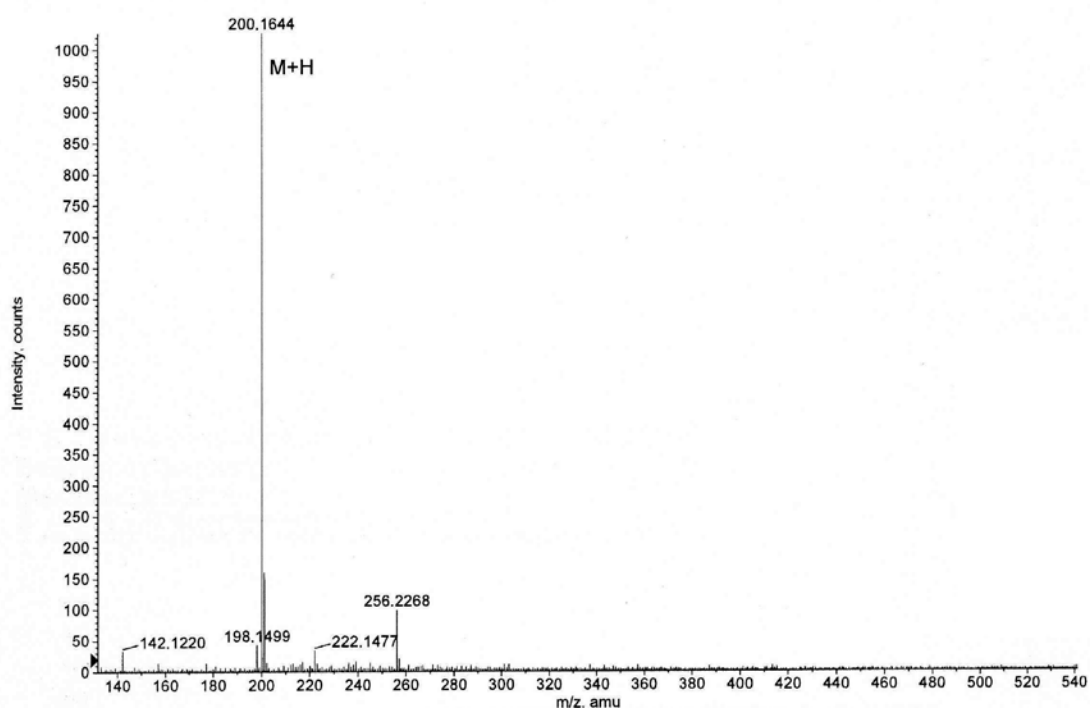
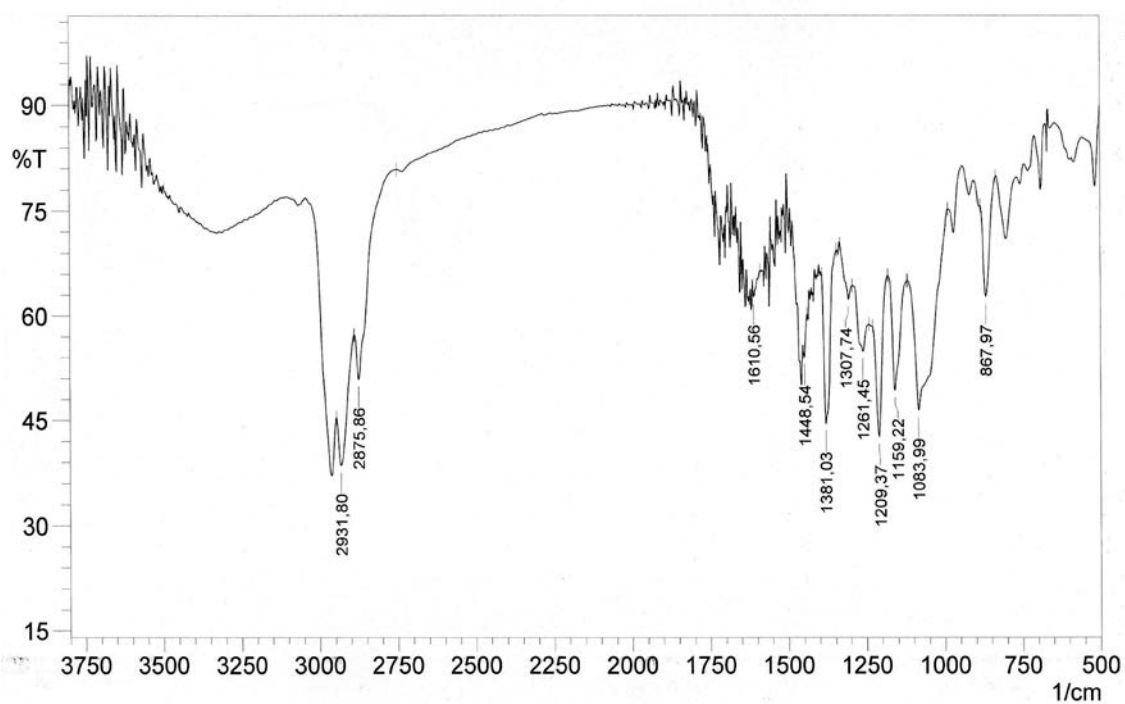
^1H y ^{13}C del compuesto **82**:

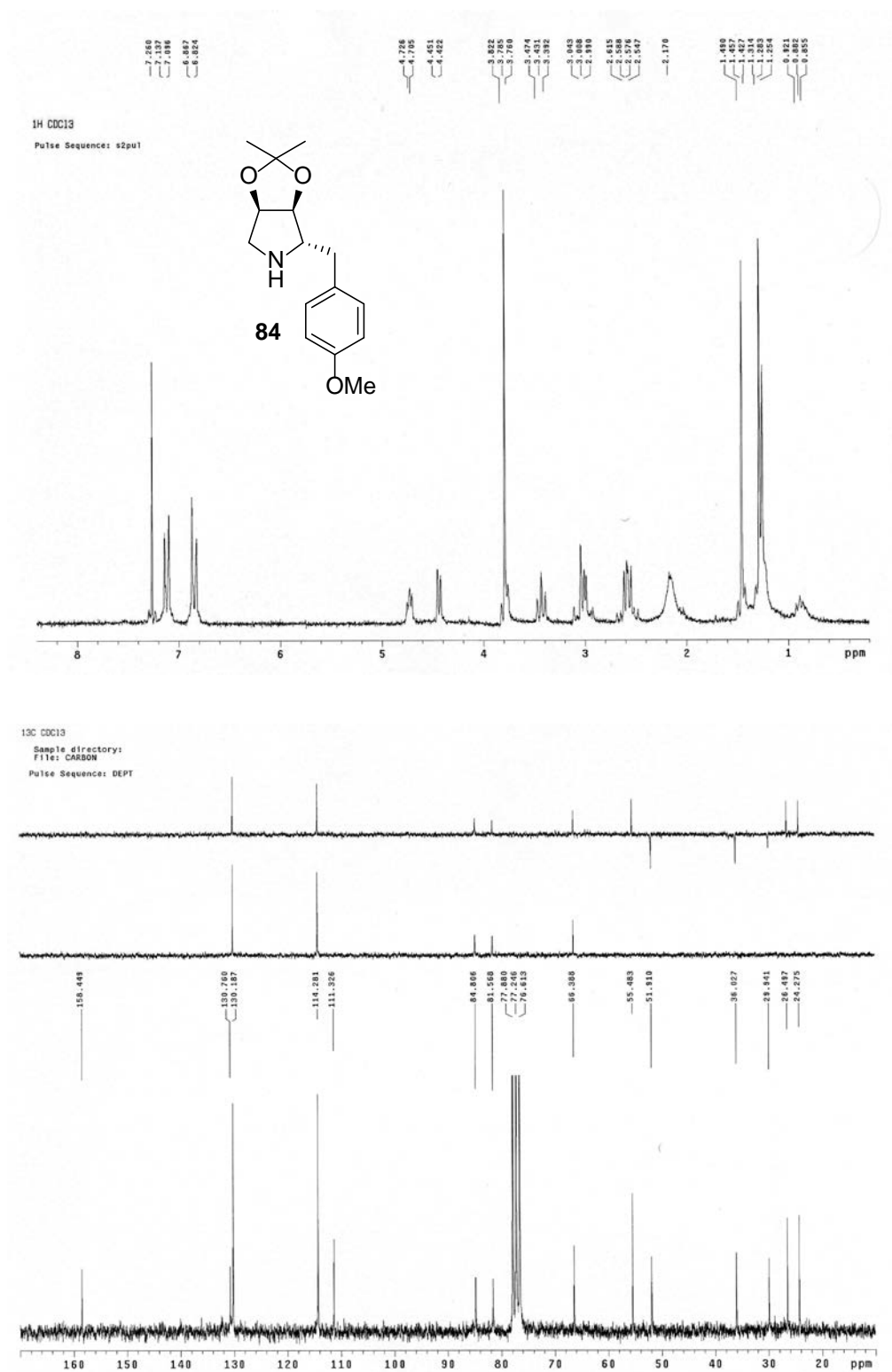
IR y HRMS del compuesto **82**:



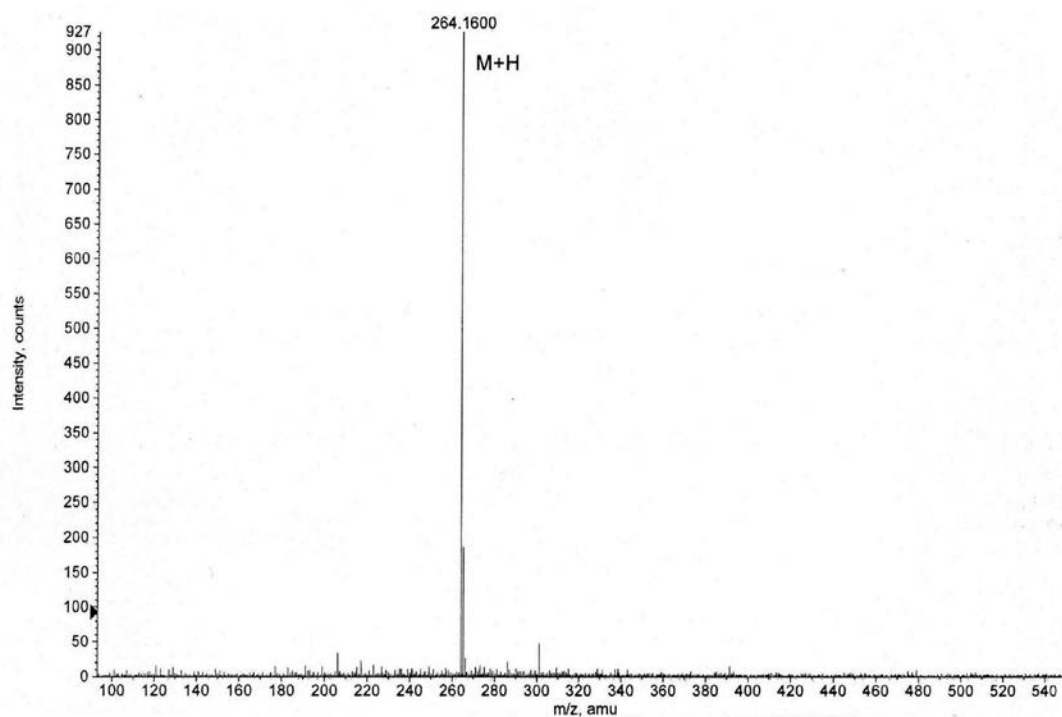
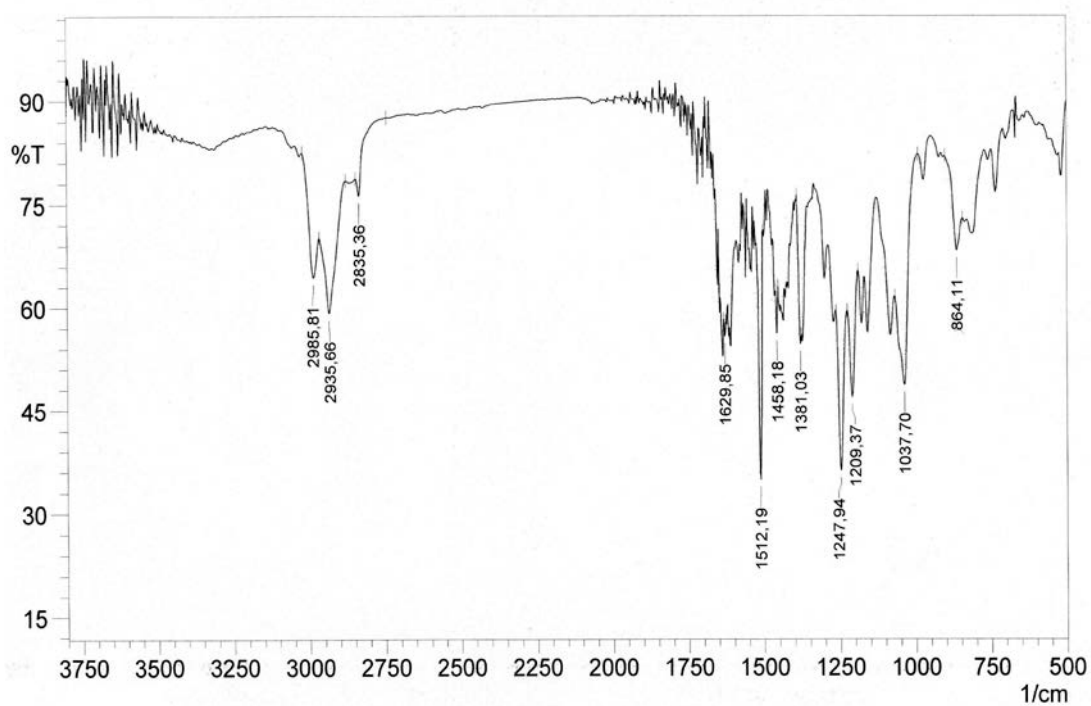
^1H y ^{13}C del compuesto **83**:

IR y HRMS del compuesto **83**:

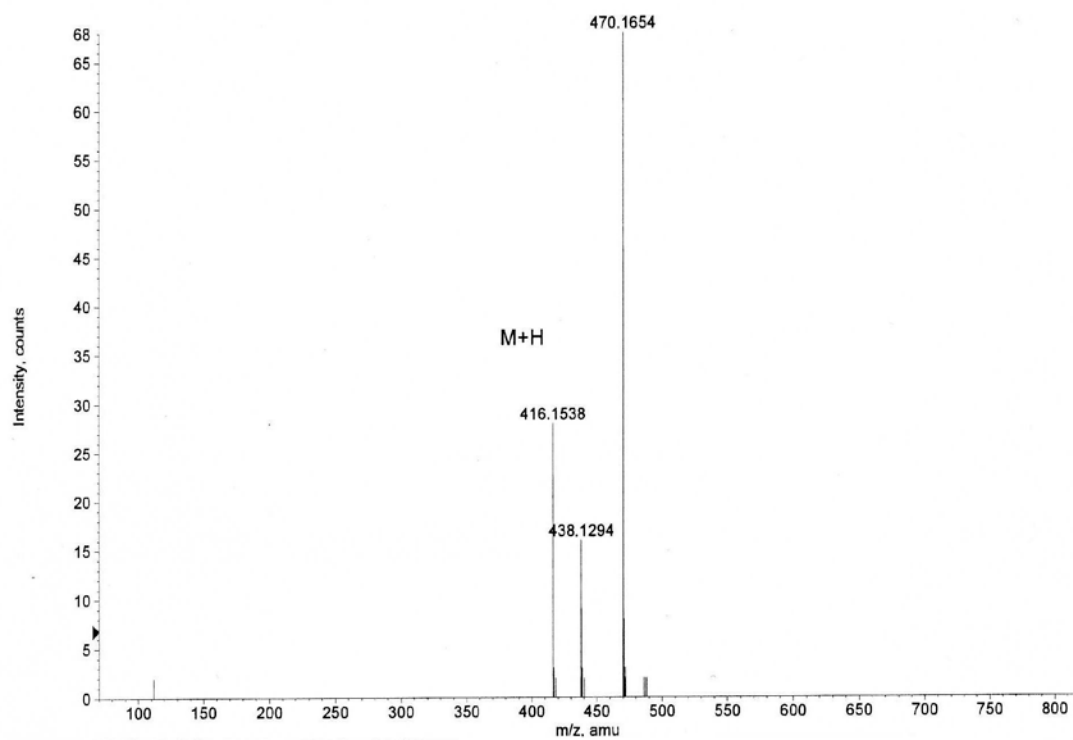
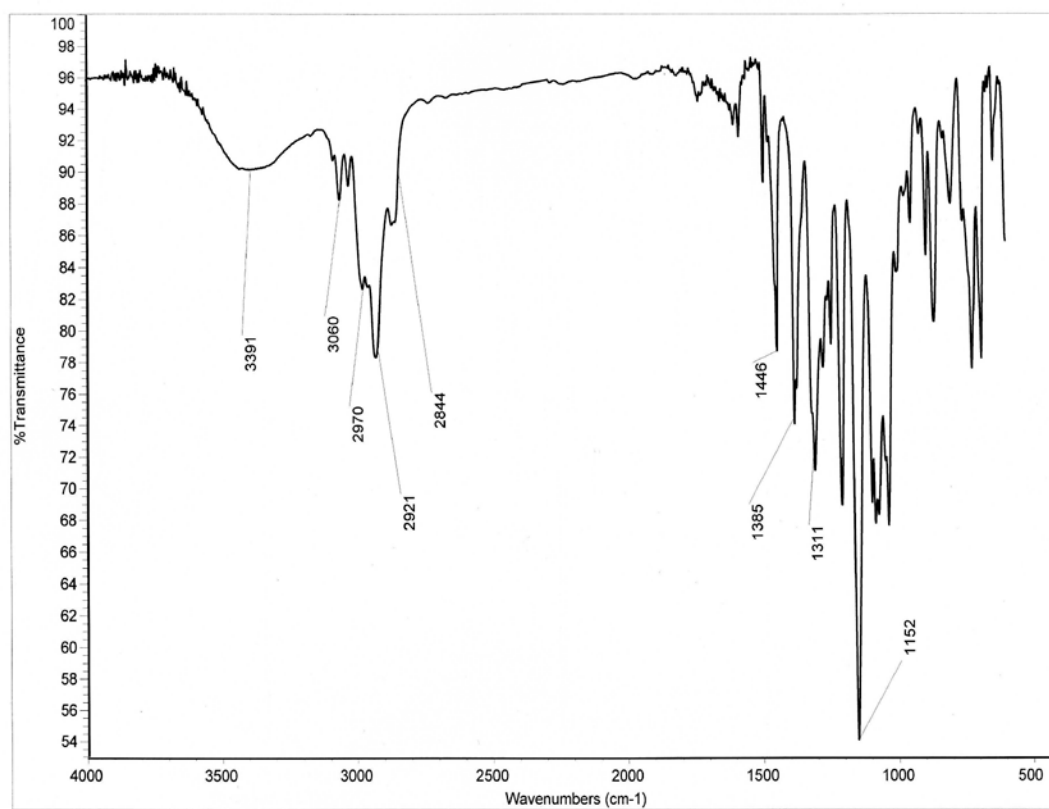


^1H y ^{13}C del compuesto **84**:

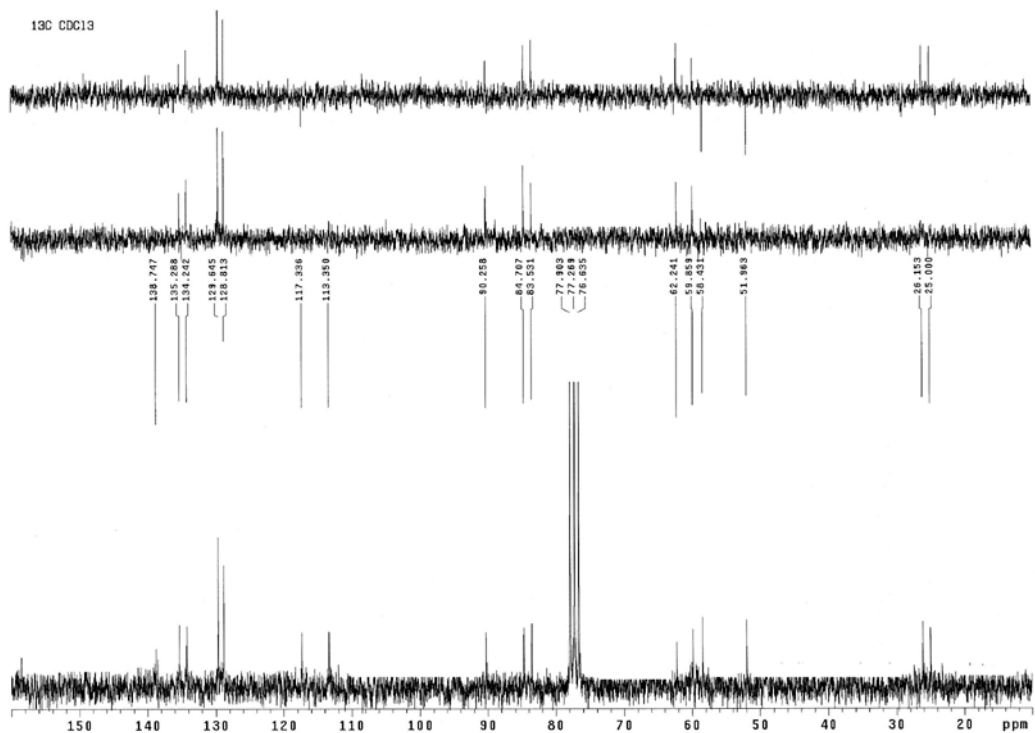
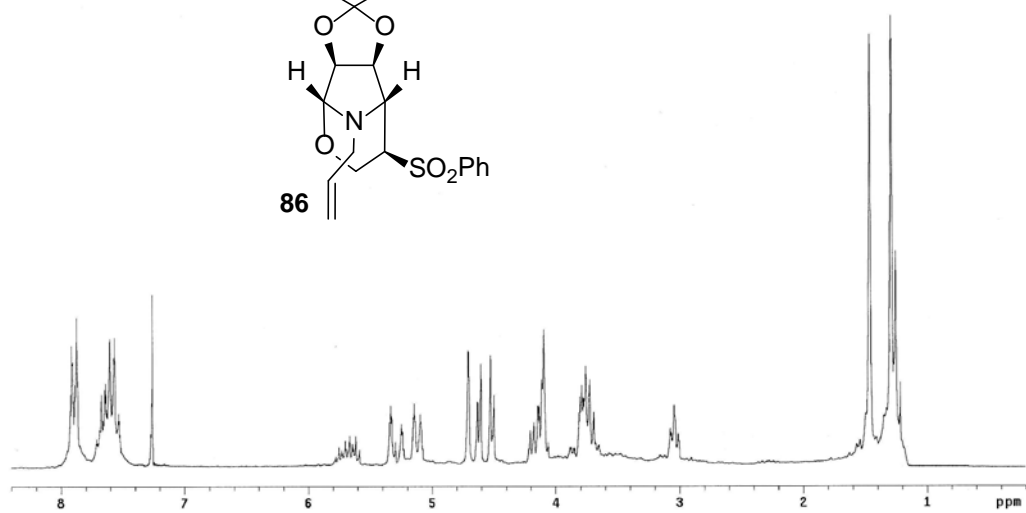
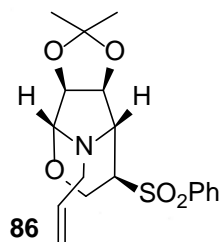
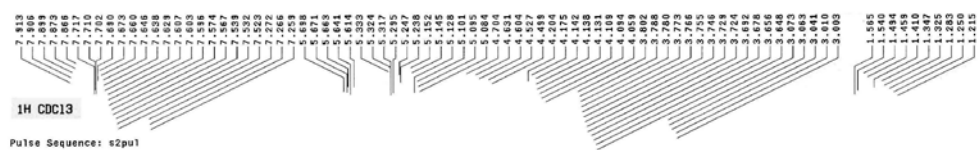
IR y HRMS del compuesto **84**:

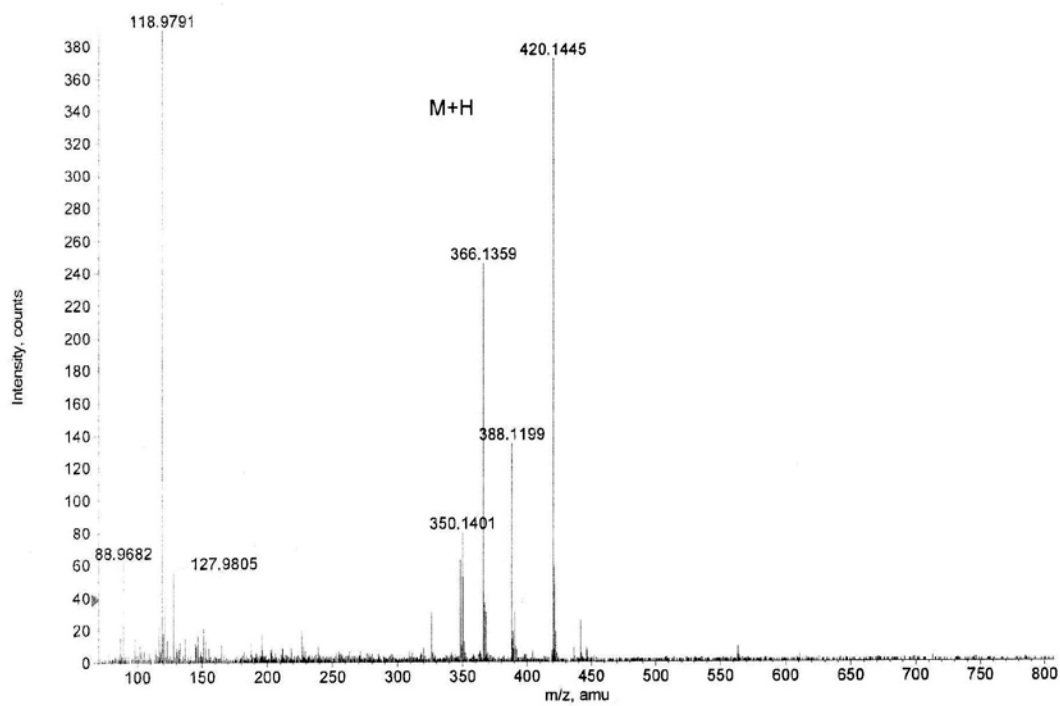
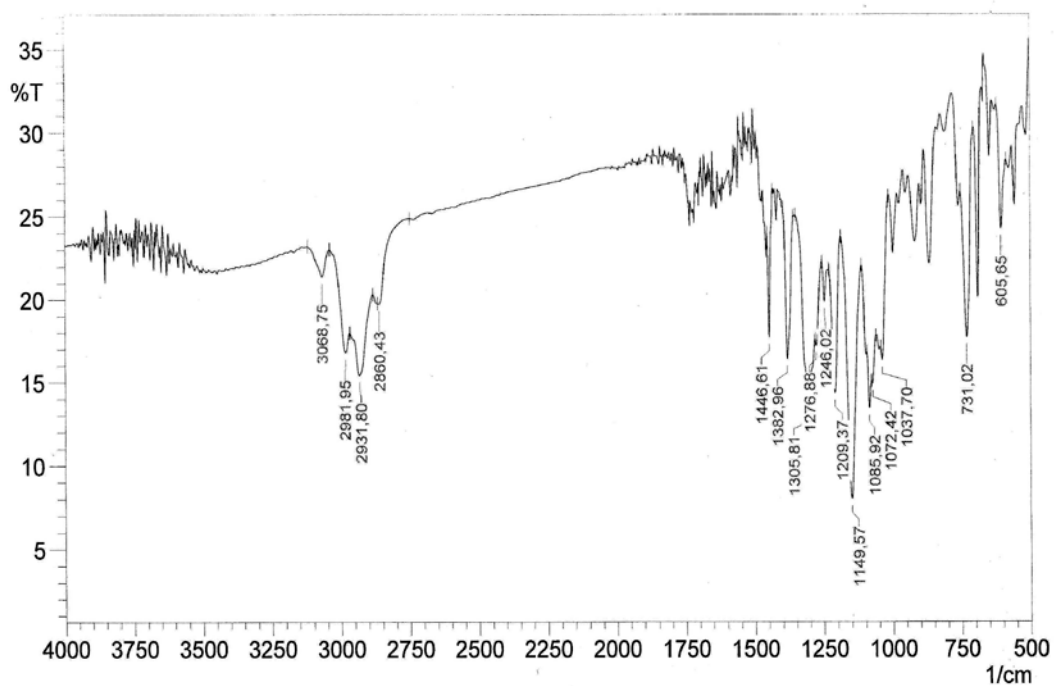


IR y HRMS del compuesto **85**:

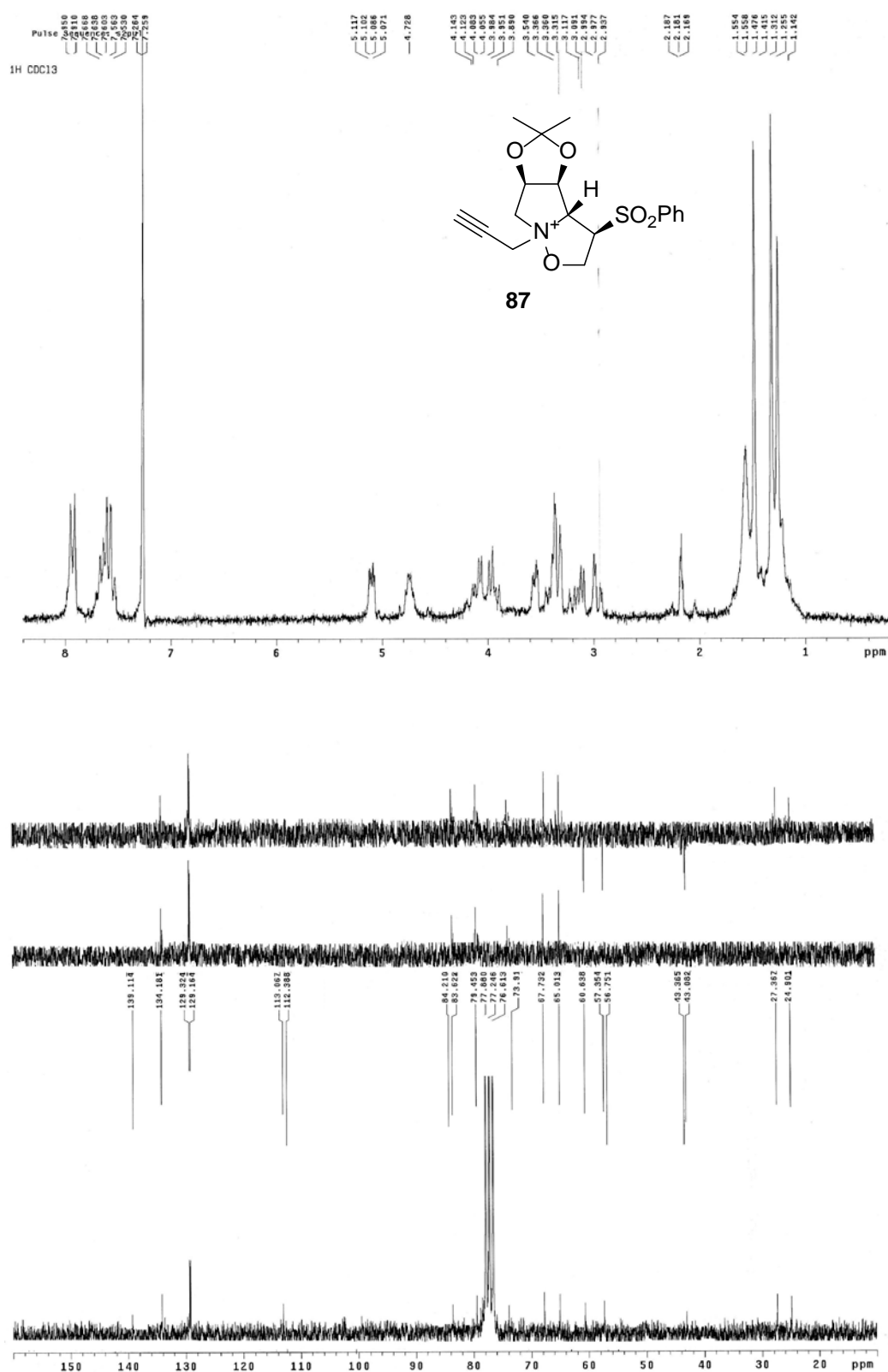


^1H y ^{13}C del compuesto **86**:

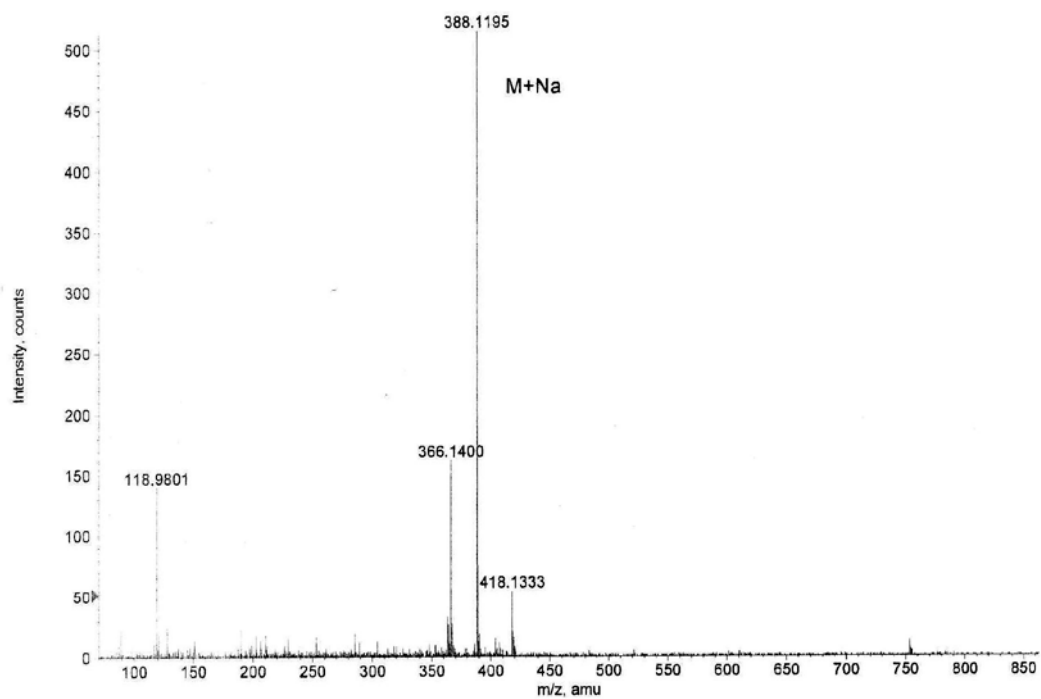
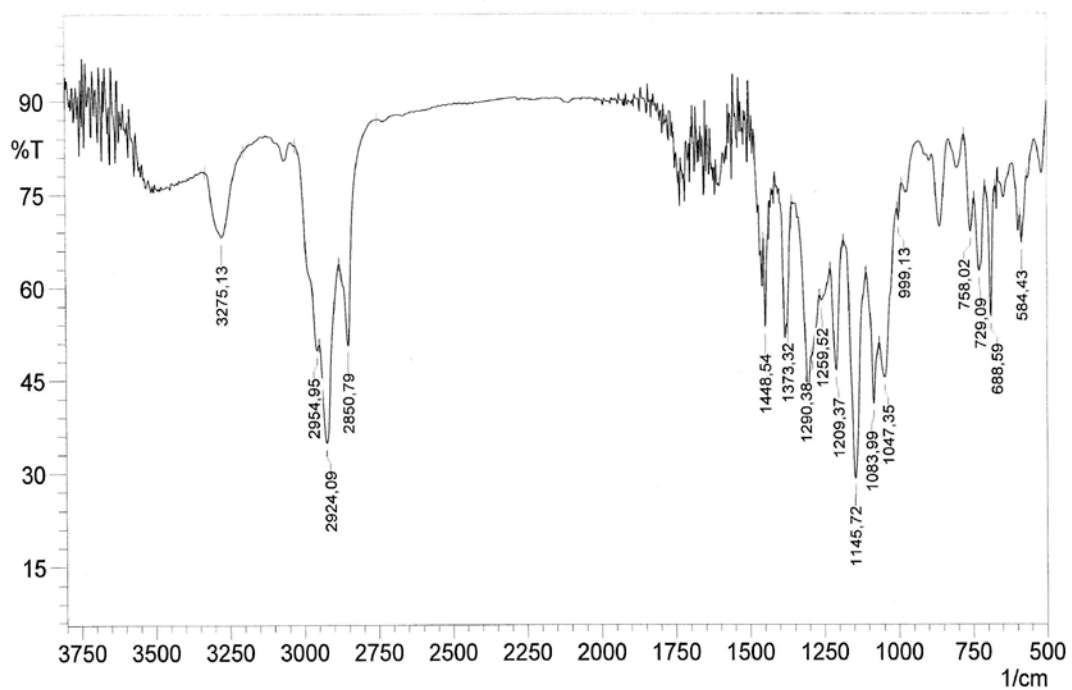


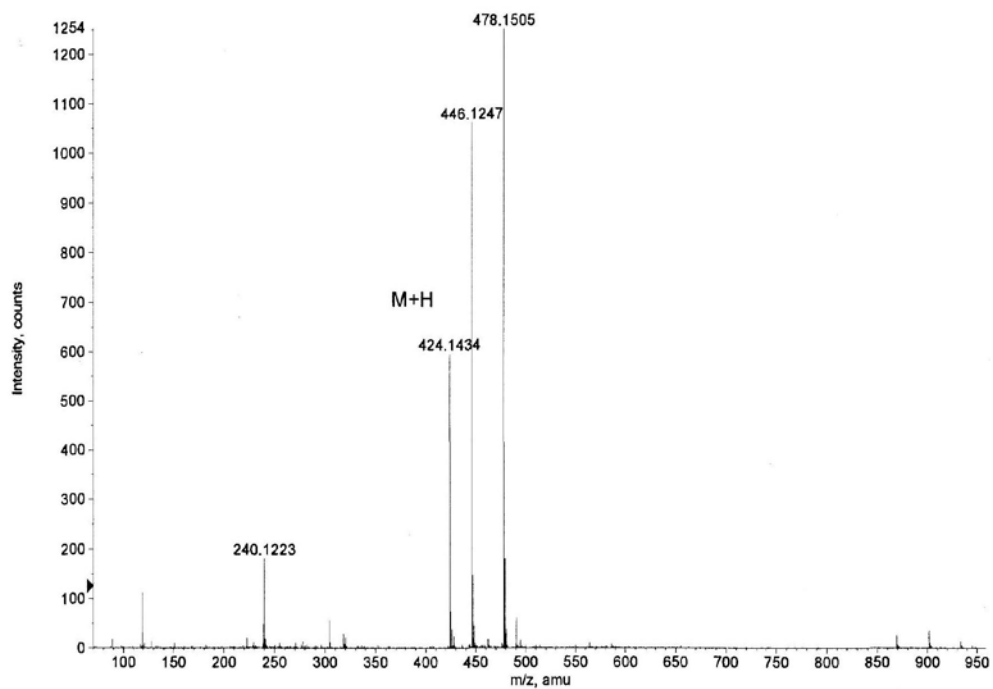
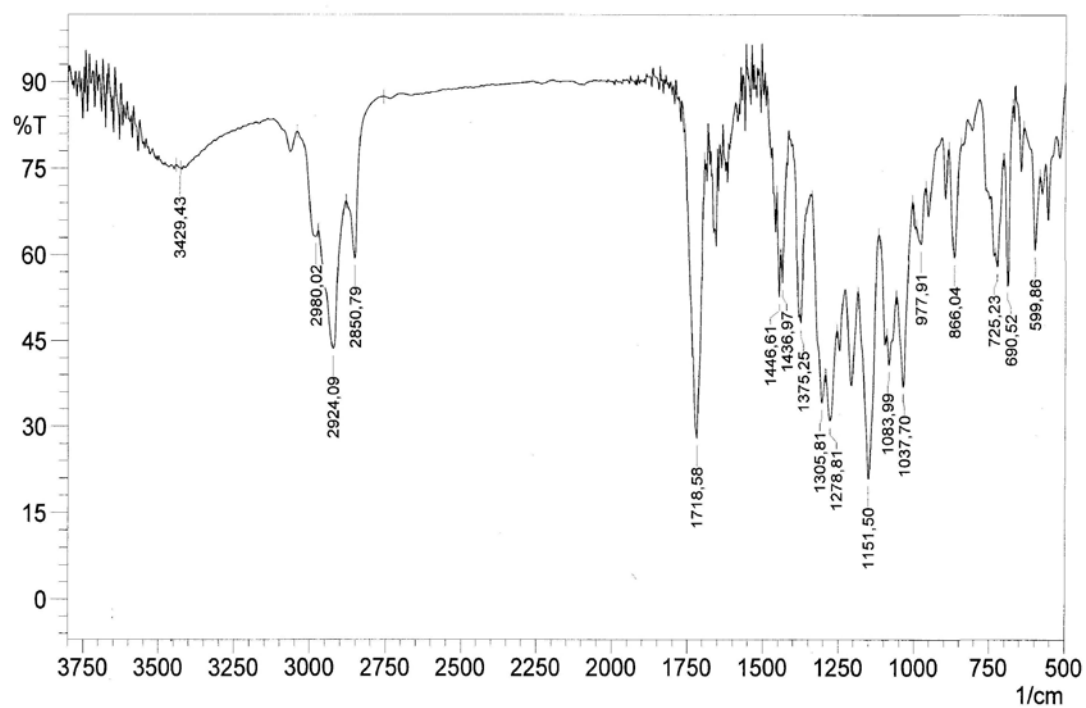
IR y HRMS del compuesto **86**:

^1H y ^{13}C del compuesto **87**:

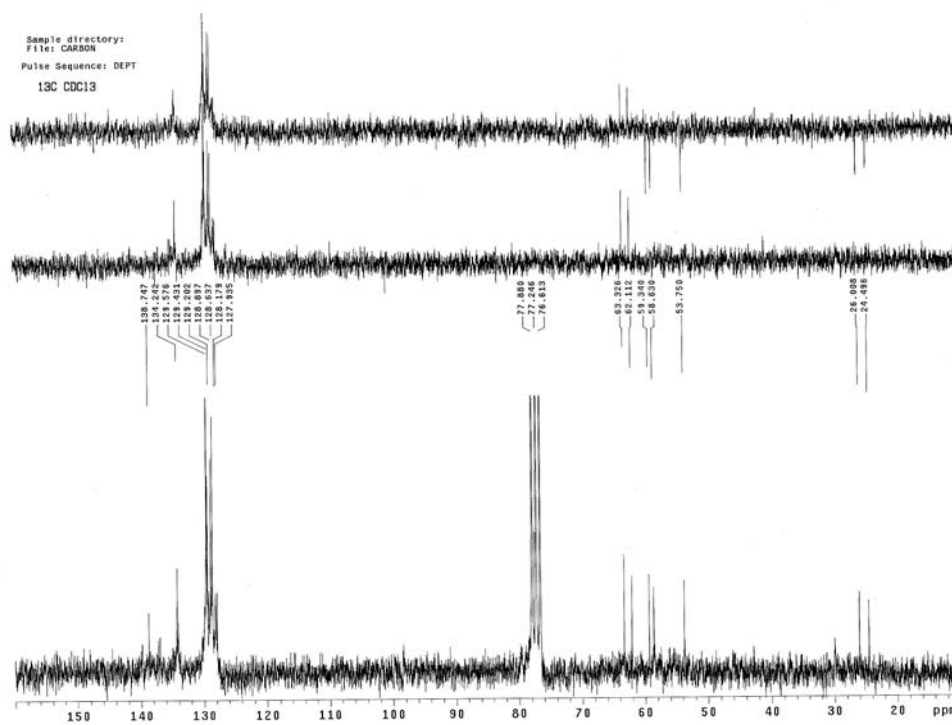
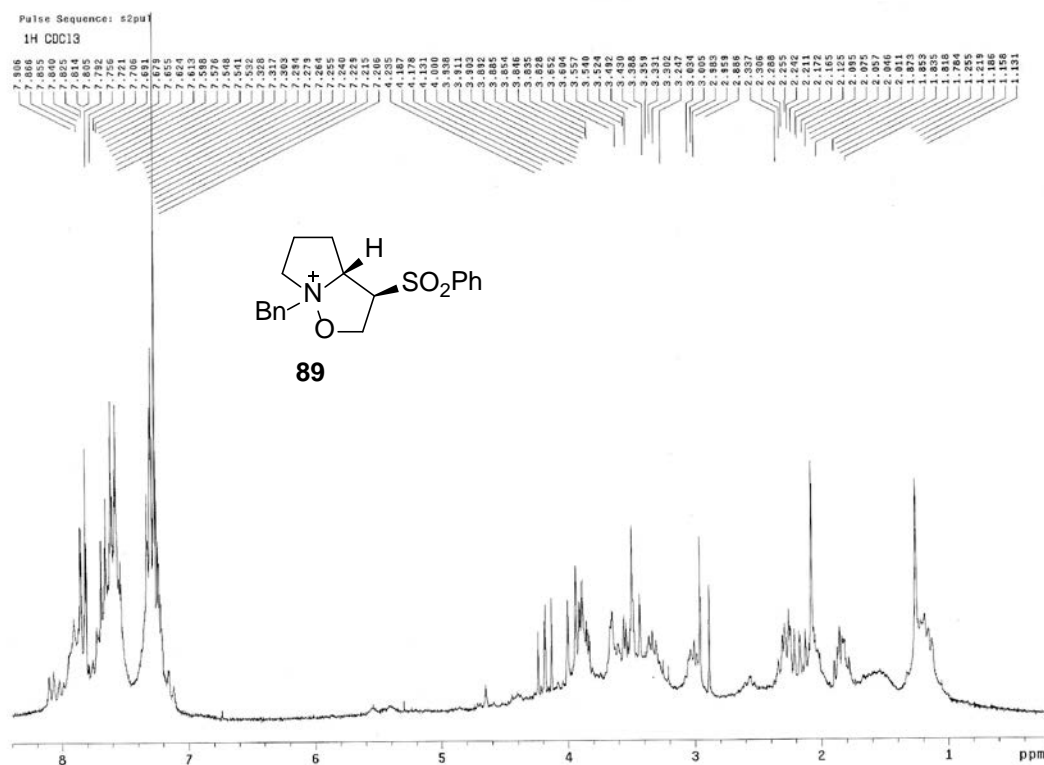


IR y HRMS del compuesto **87**:

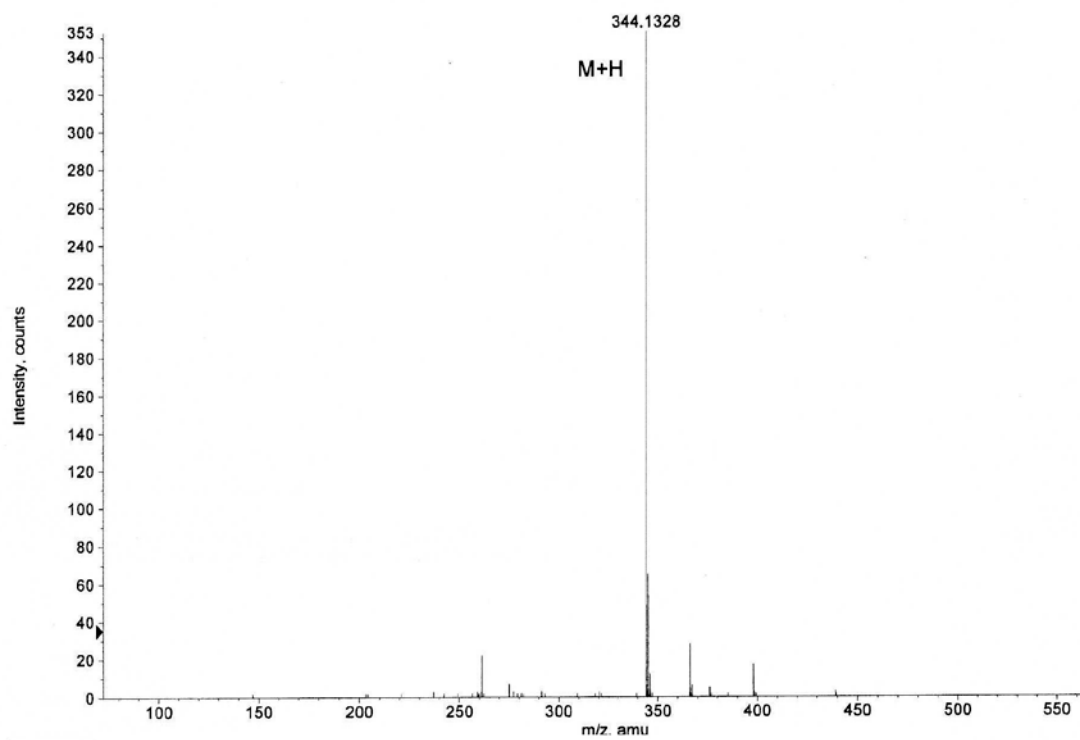
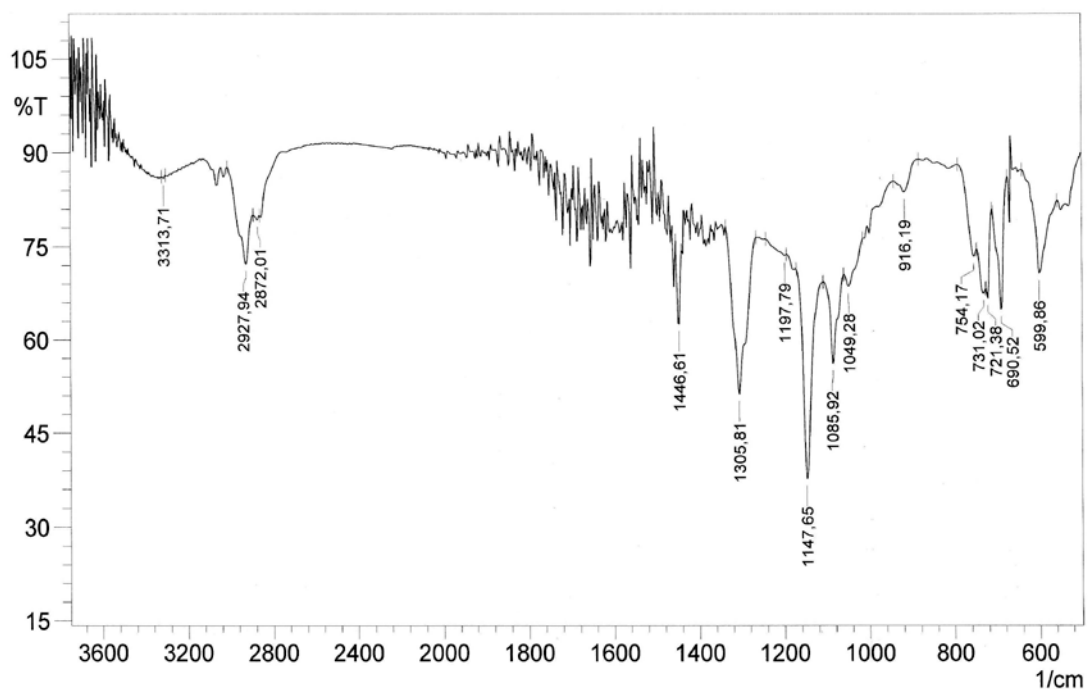


IR y HRMS del compuesto **88**:

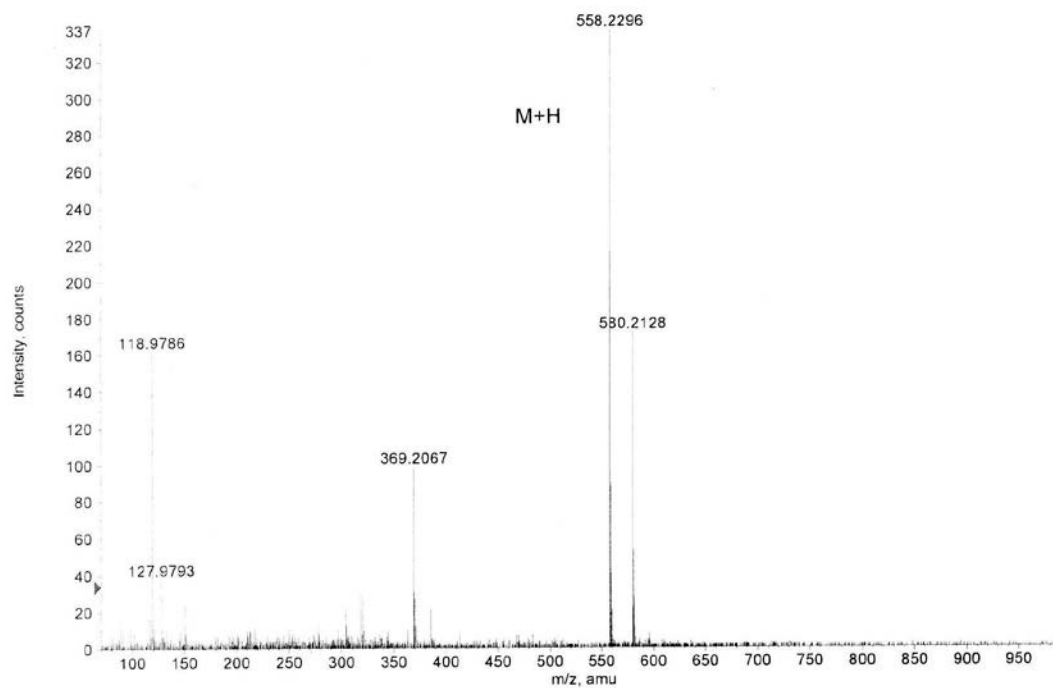
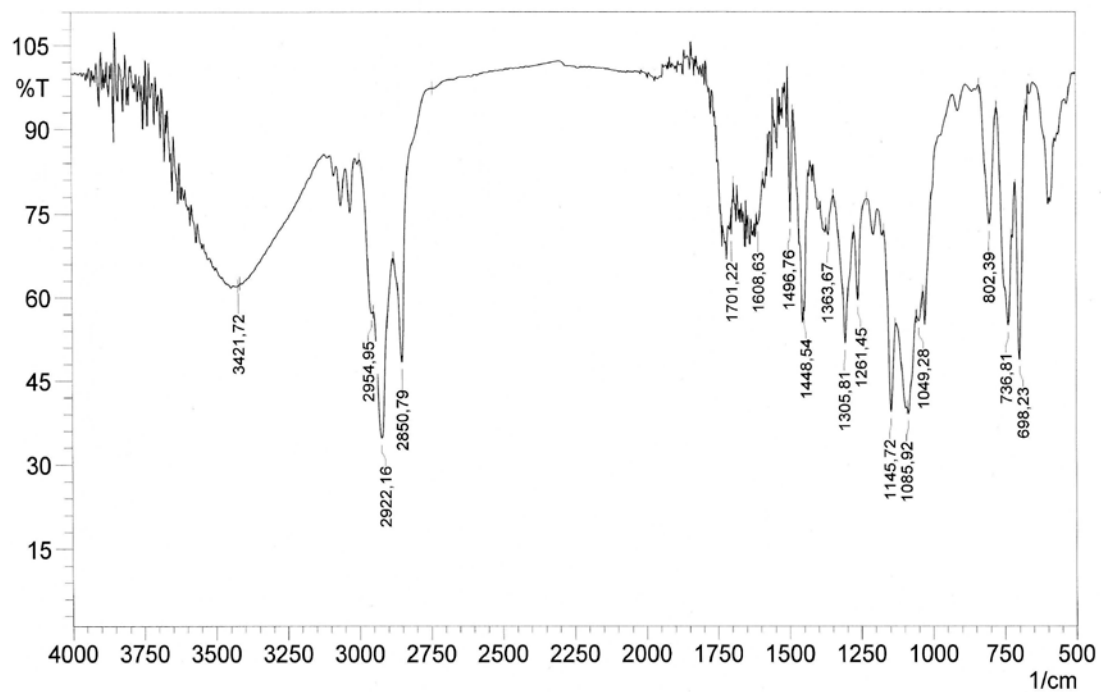
^1H y ^{13}C del compuesto **89**:



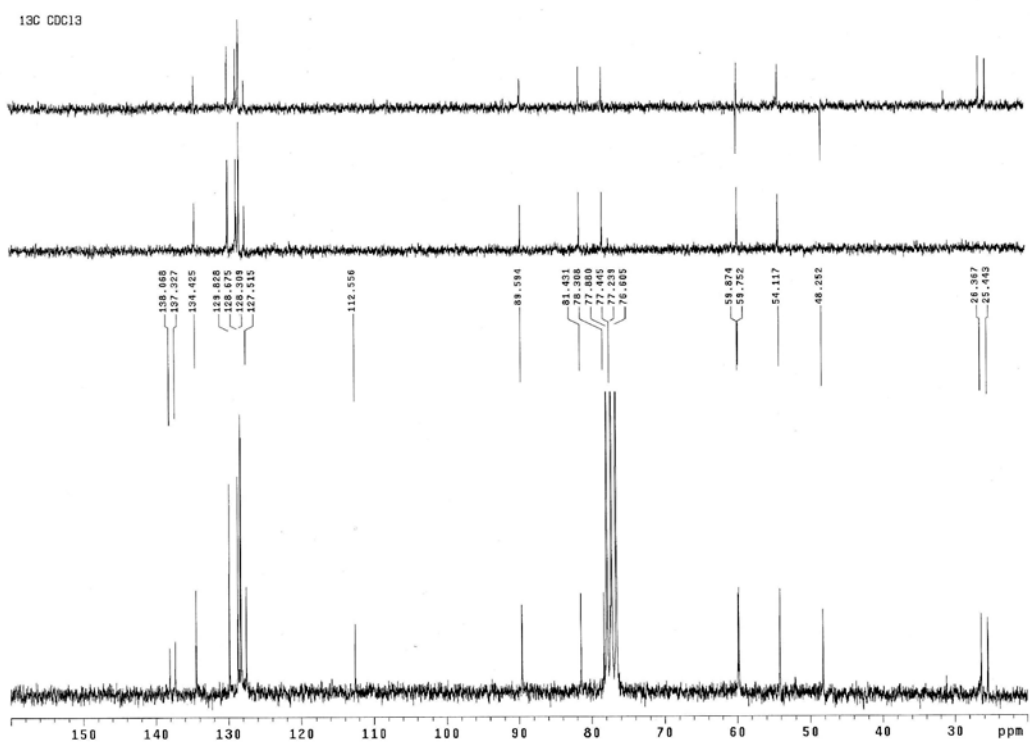
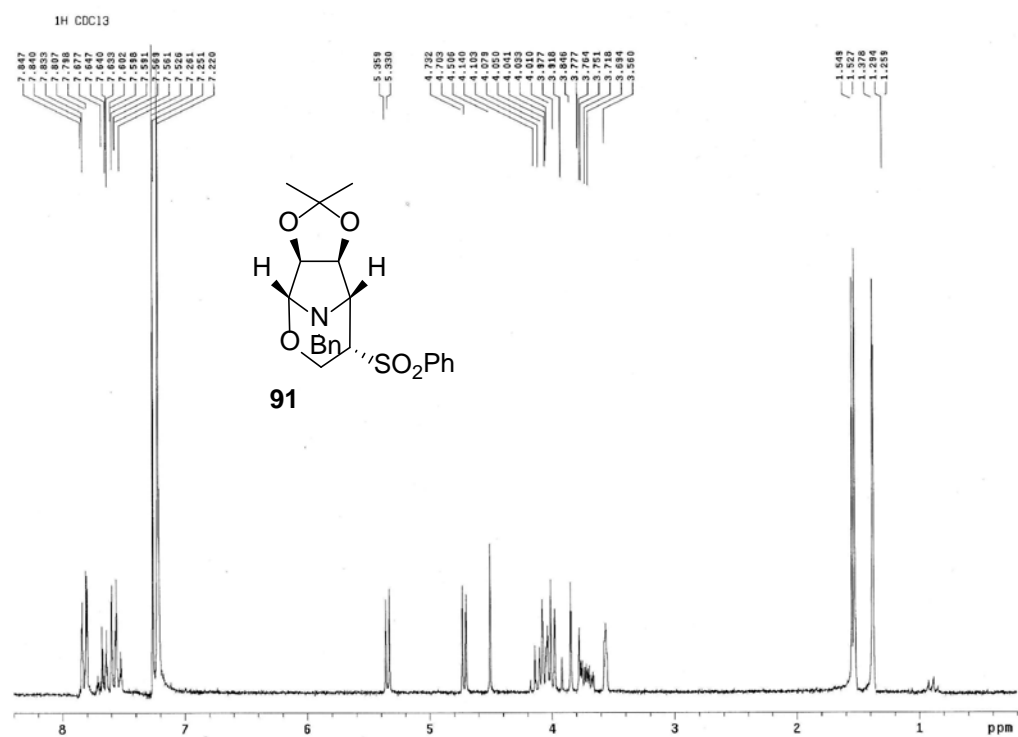
IR y HRMS del compuesto **89**:



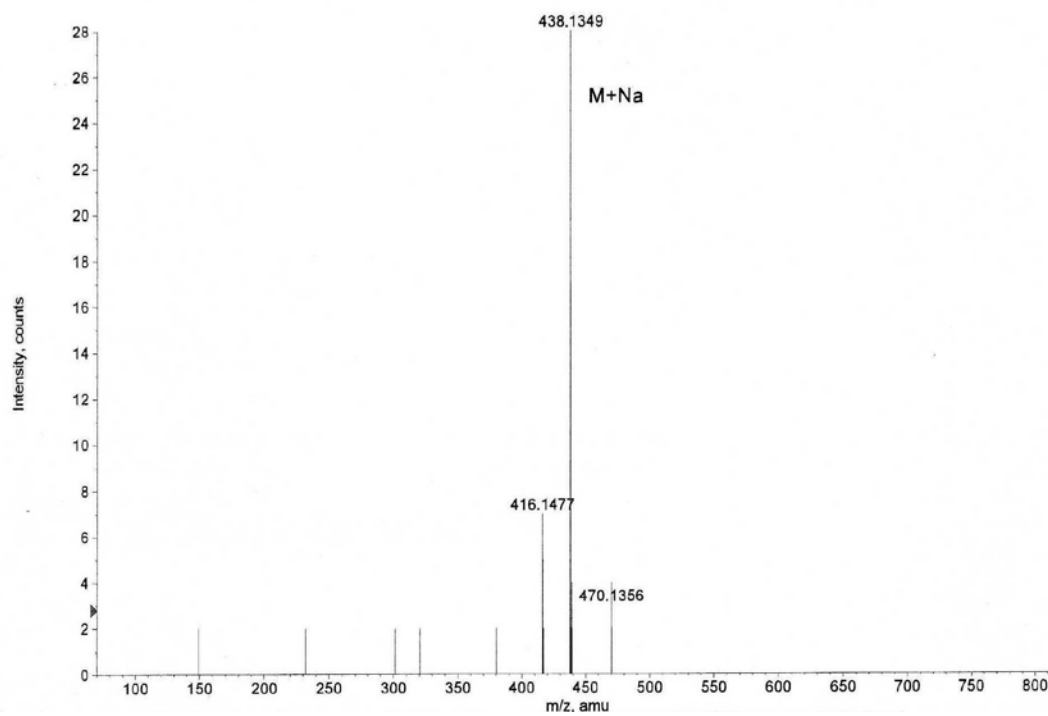
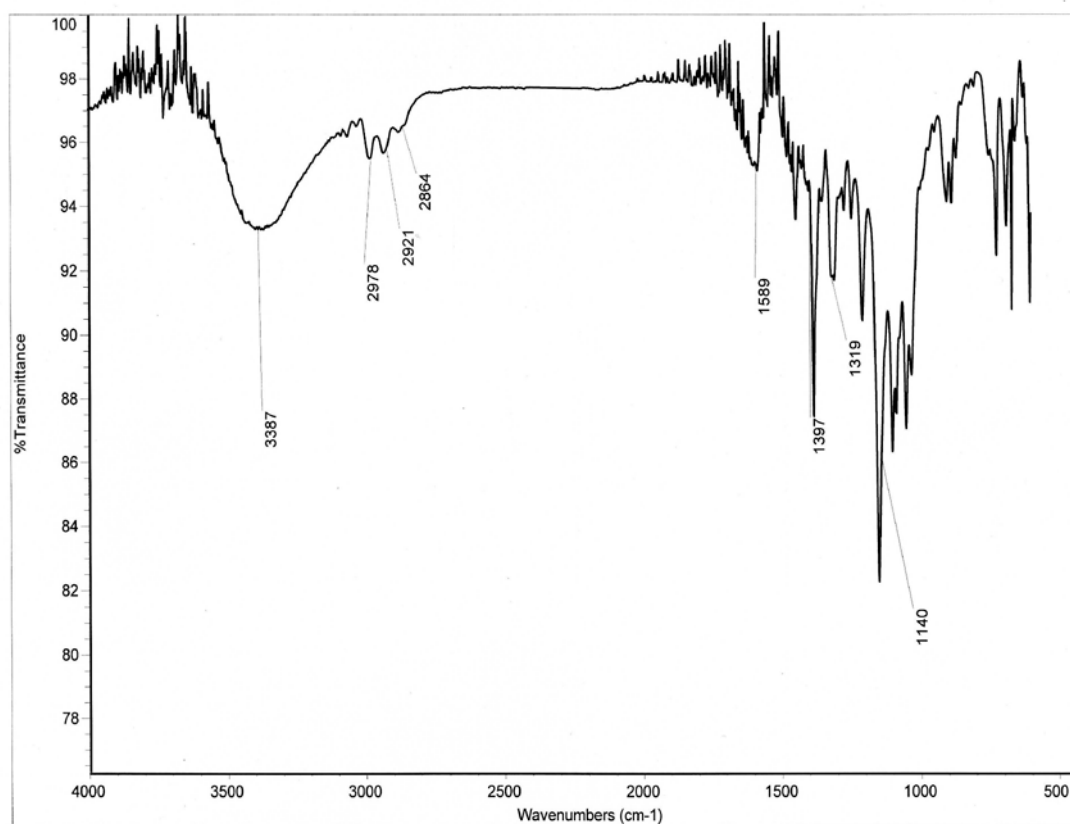
IR y HRMS del compuesto **90**:



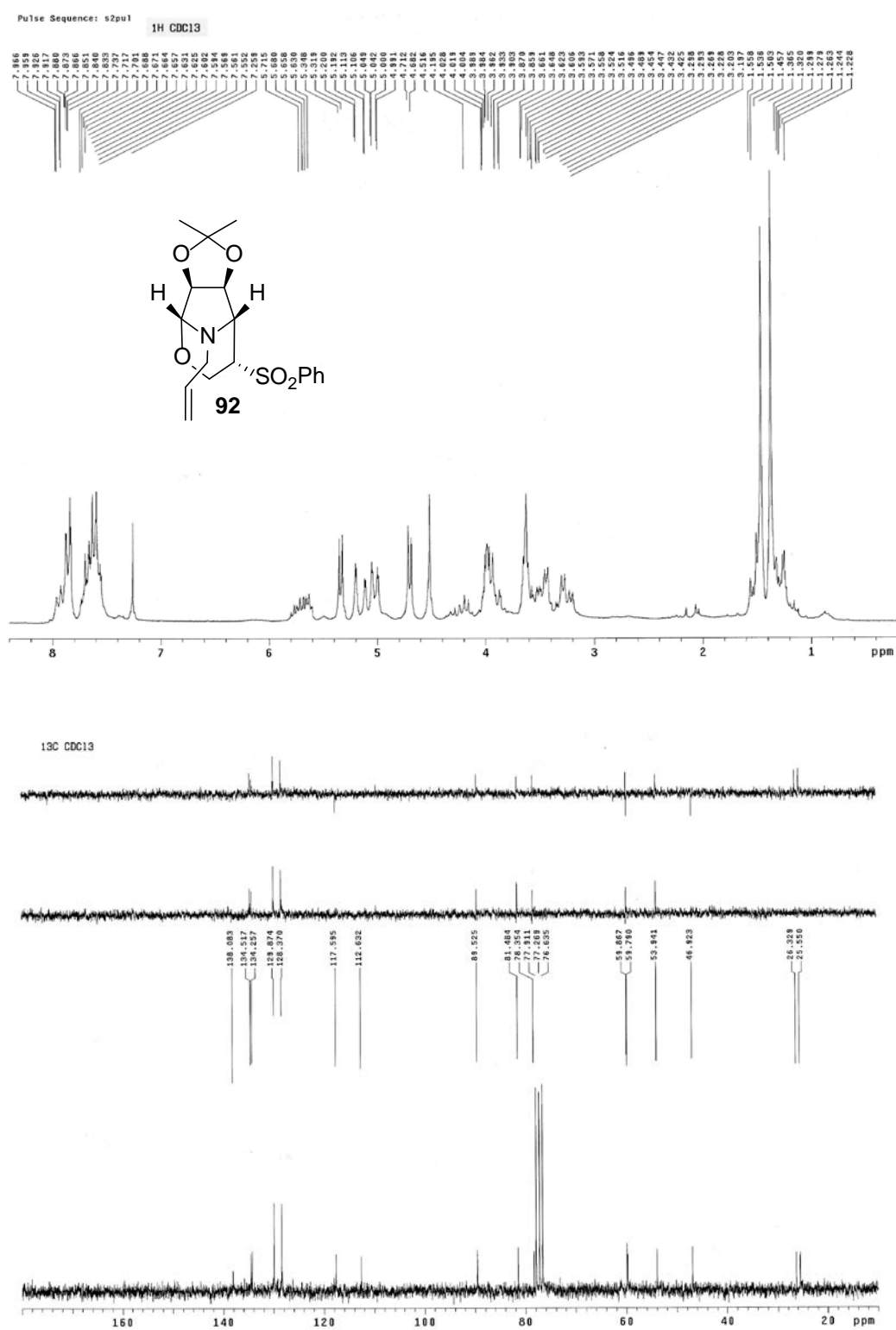
^1H y ^{13}C del compuesto **91**:



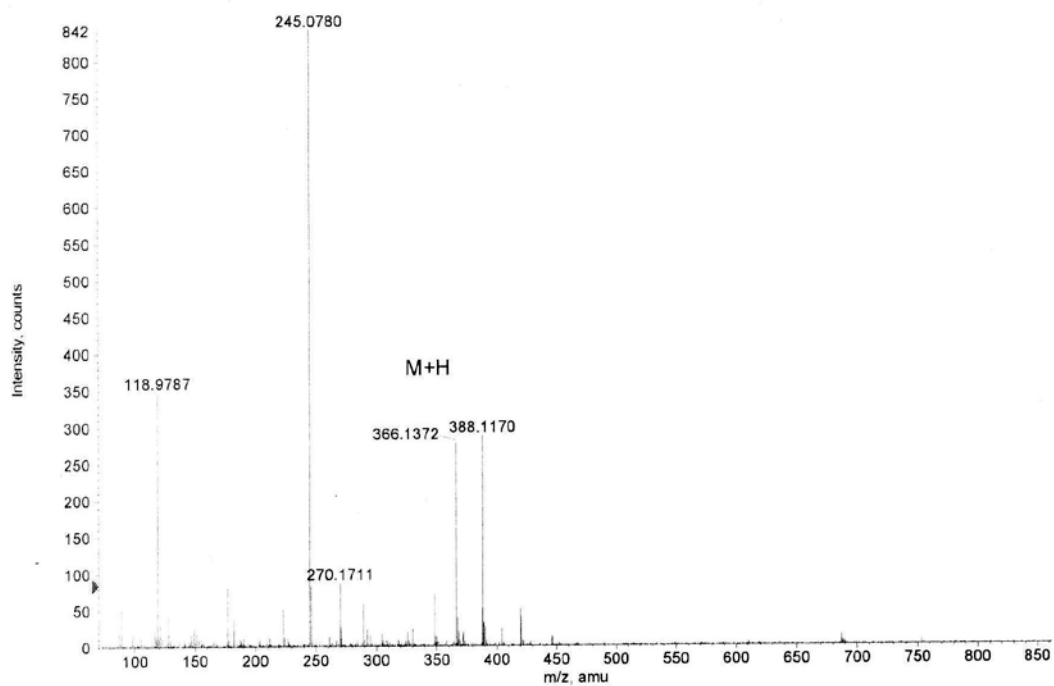
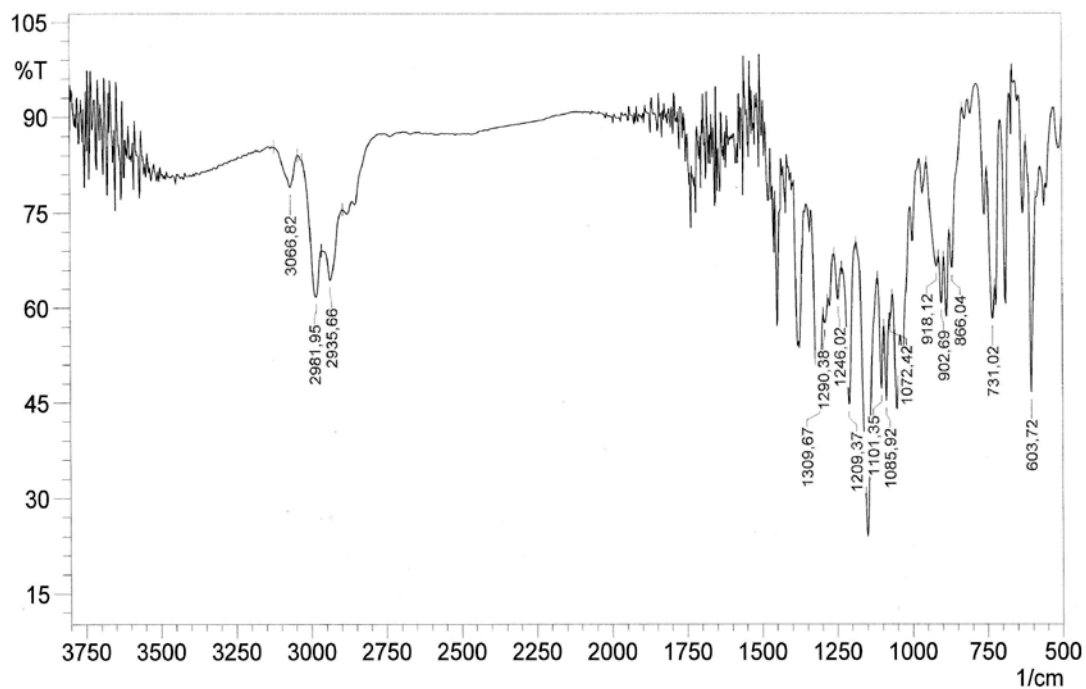
IR y HRMS del compuesto **91**:

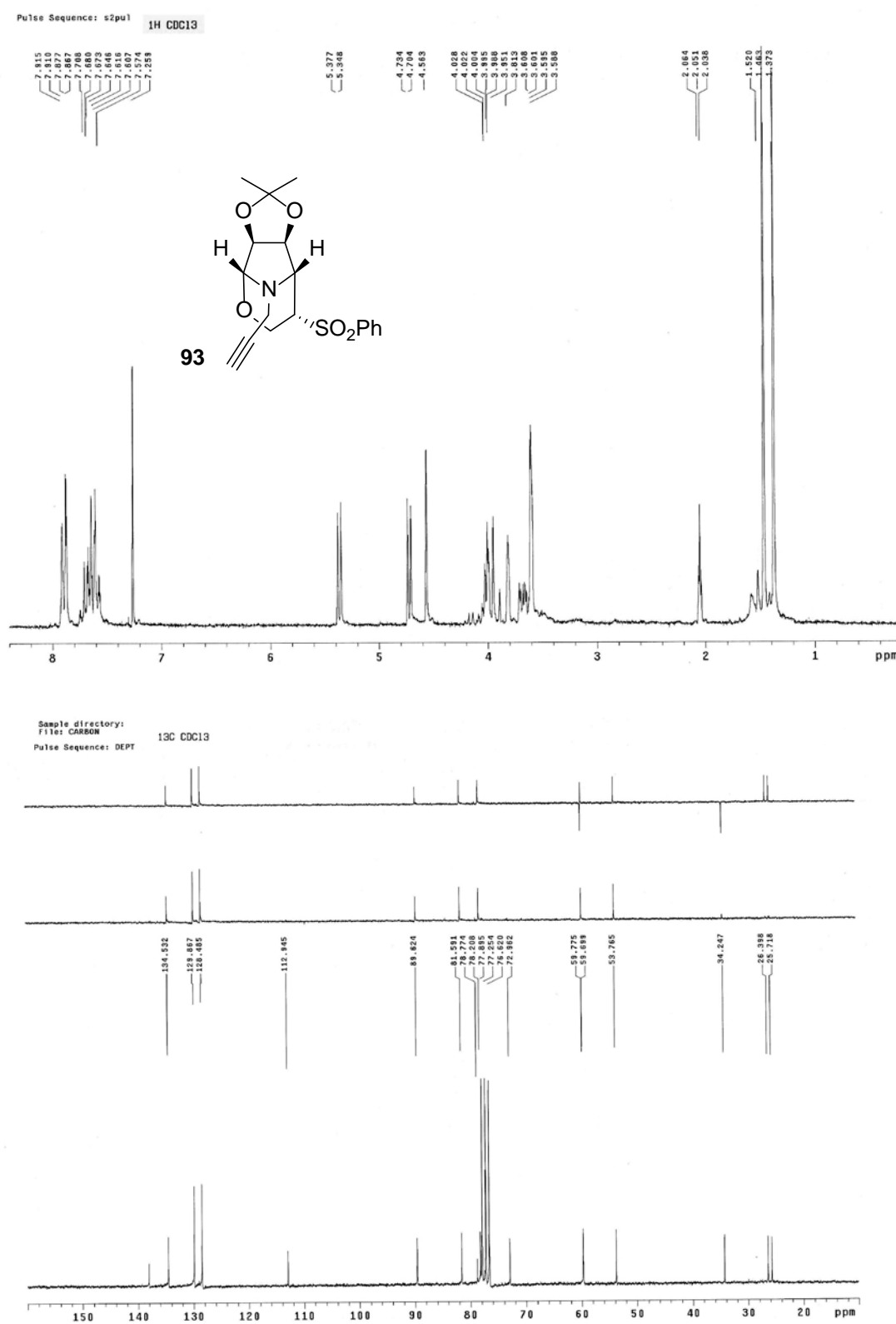


^1H y ^{13}C del compuesto **92**:

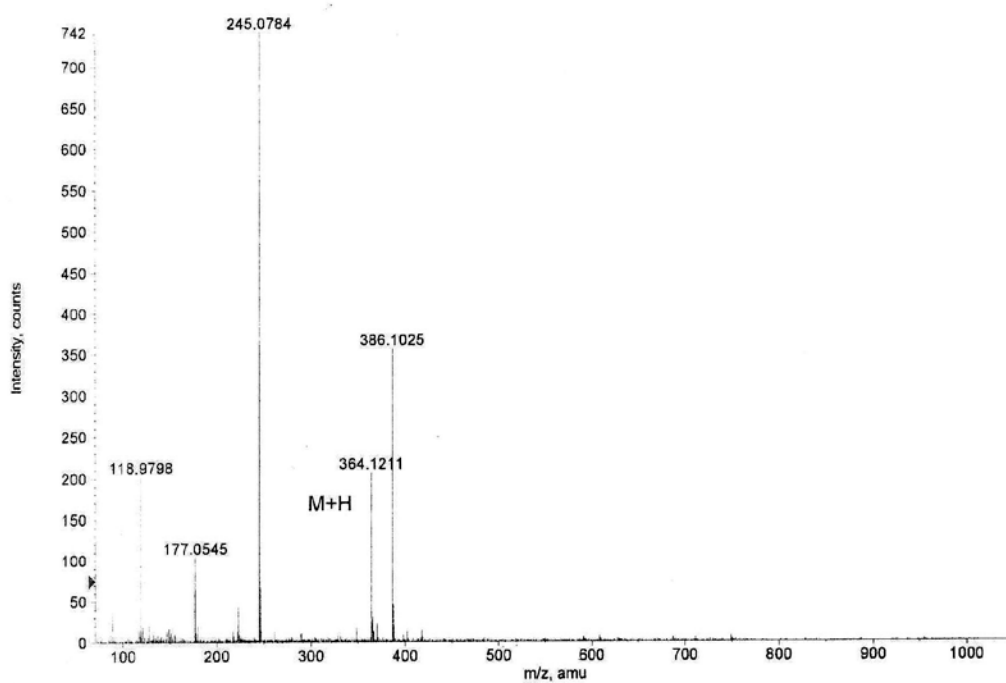
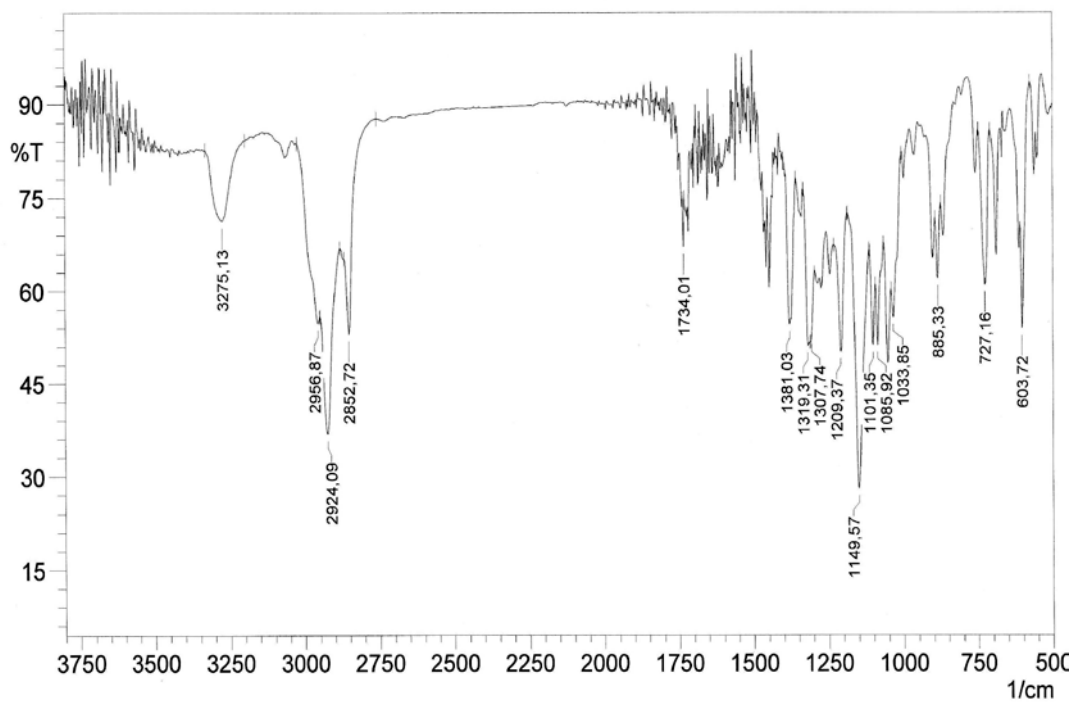


IR y HRMS del compuesto **92**:

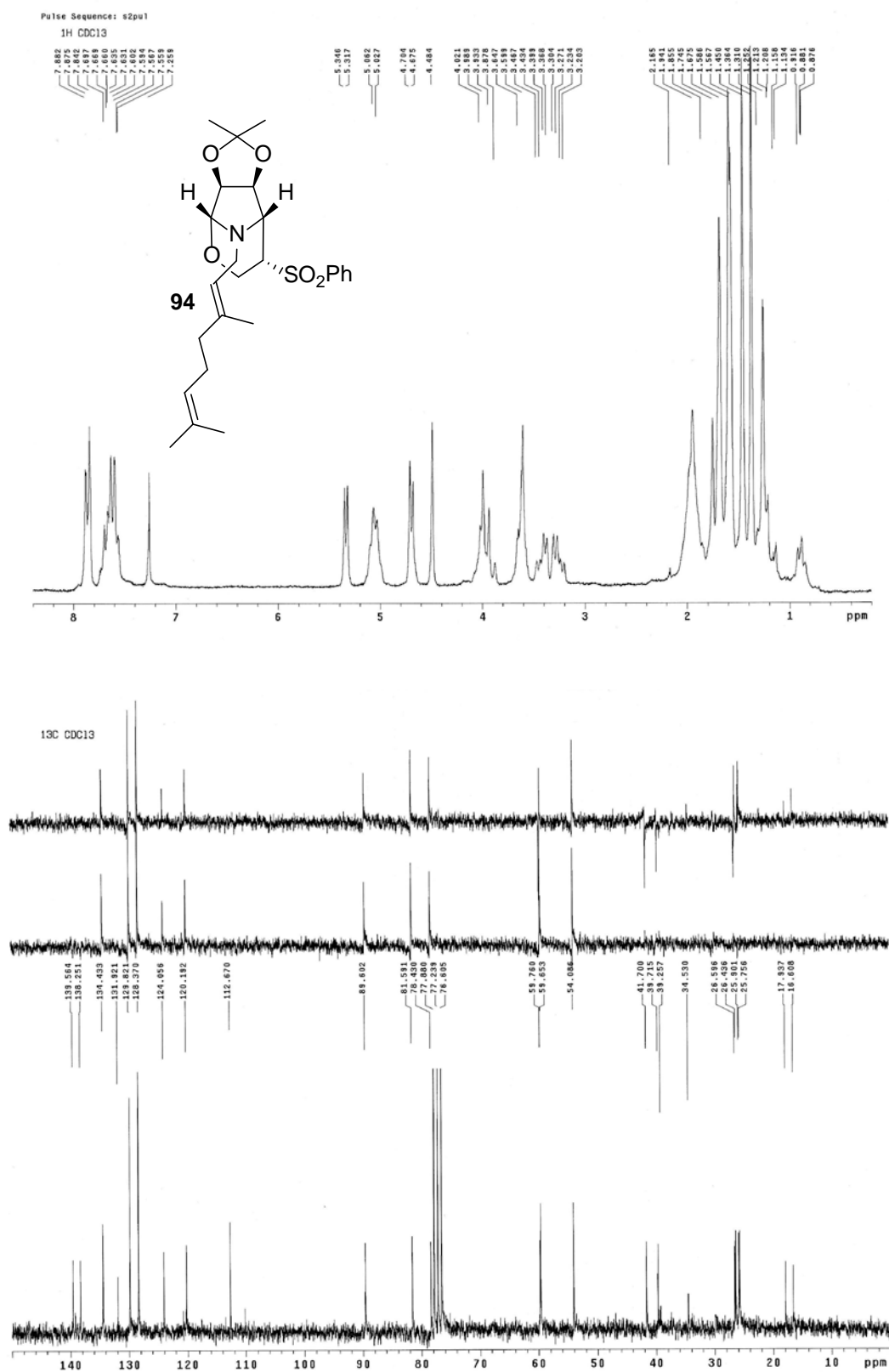


^1H y ^{13}C del compuesto **93**:

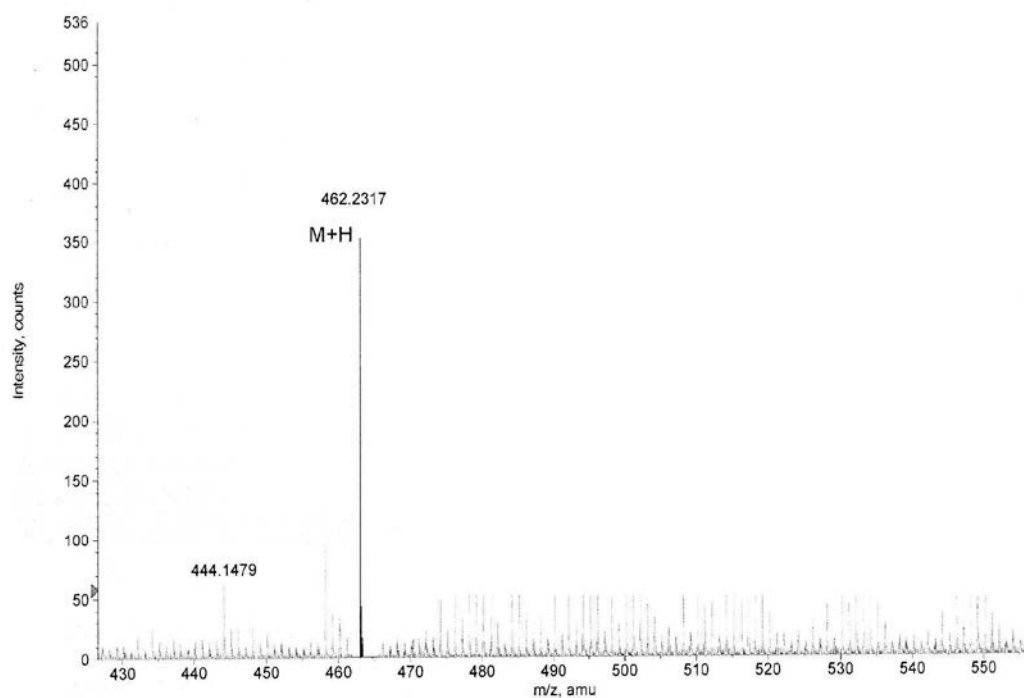
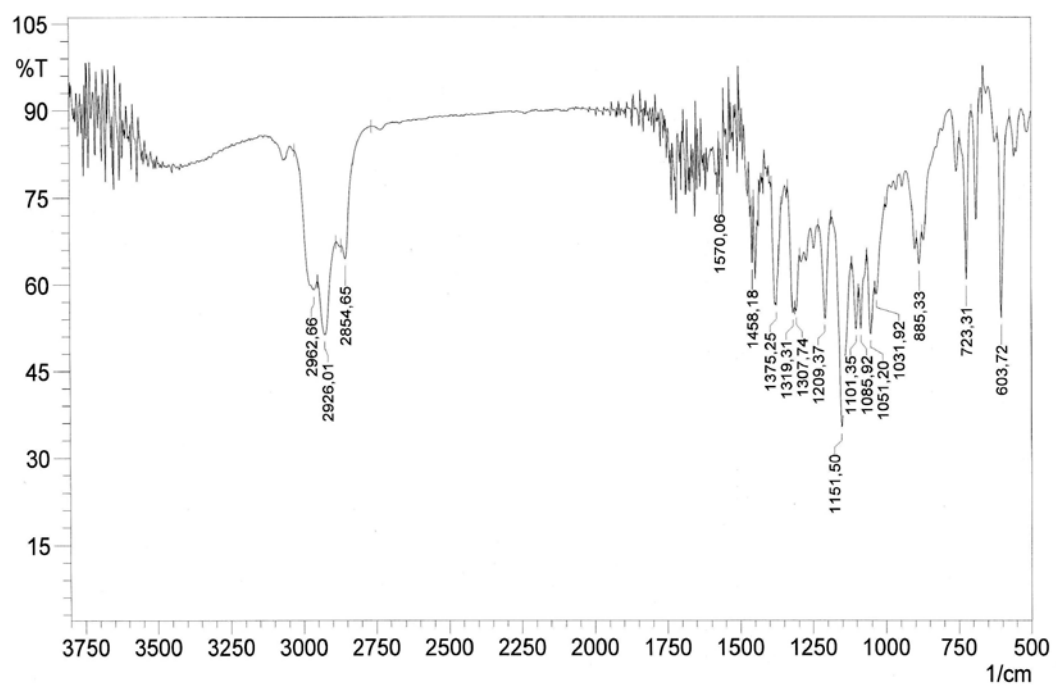
IR y HRMS del compuesto **93**:



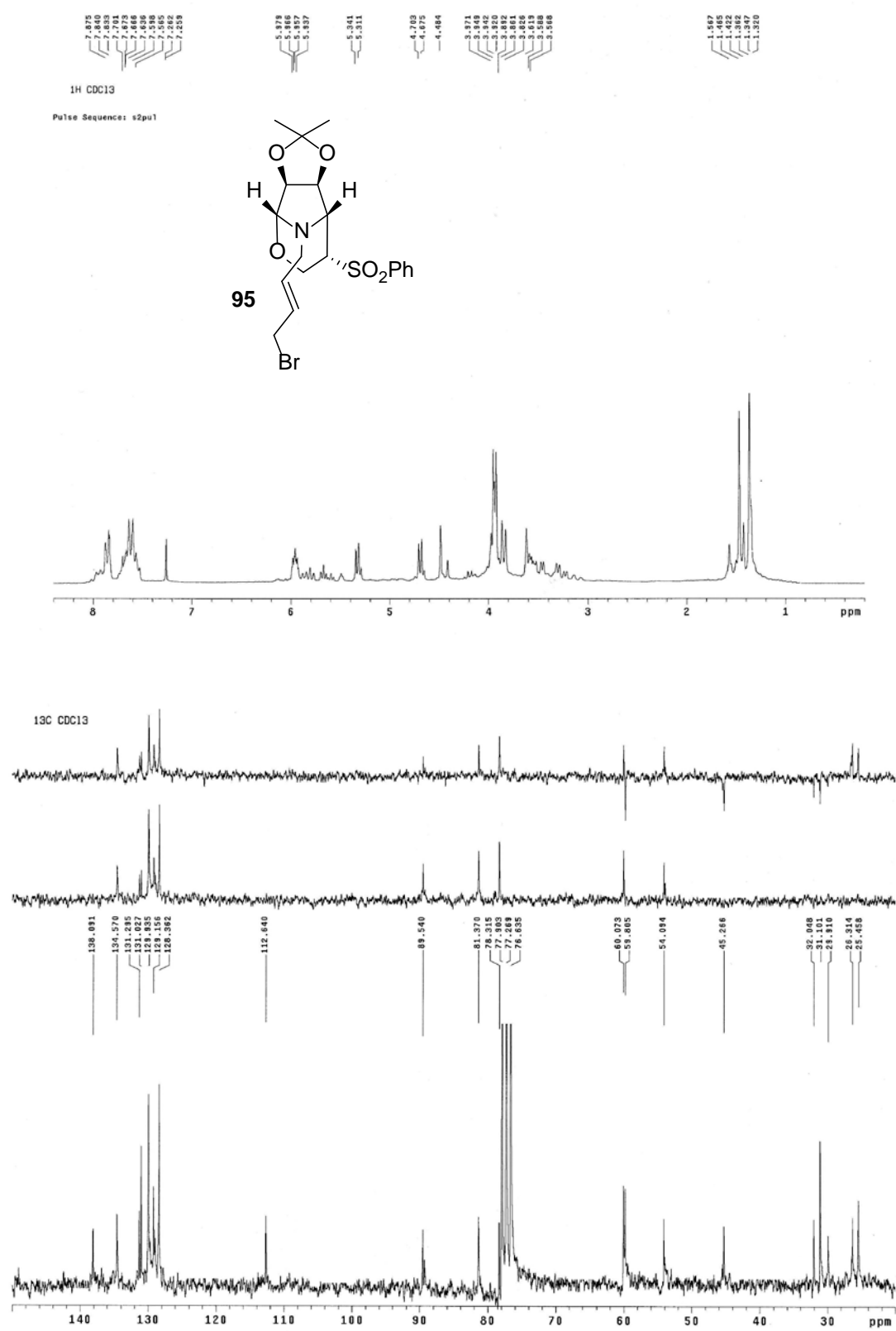
^1H y ^{13}C del compuesto **94**:

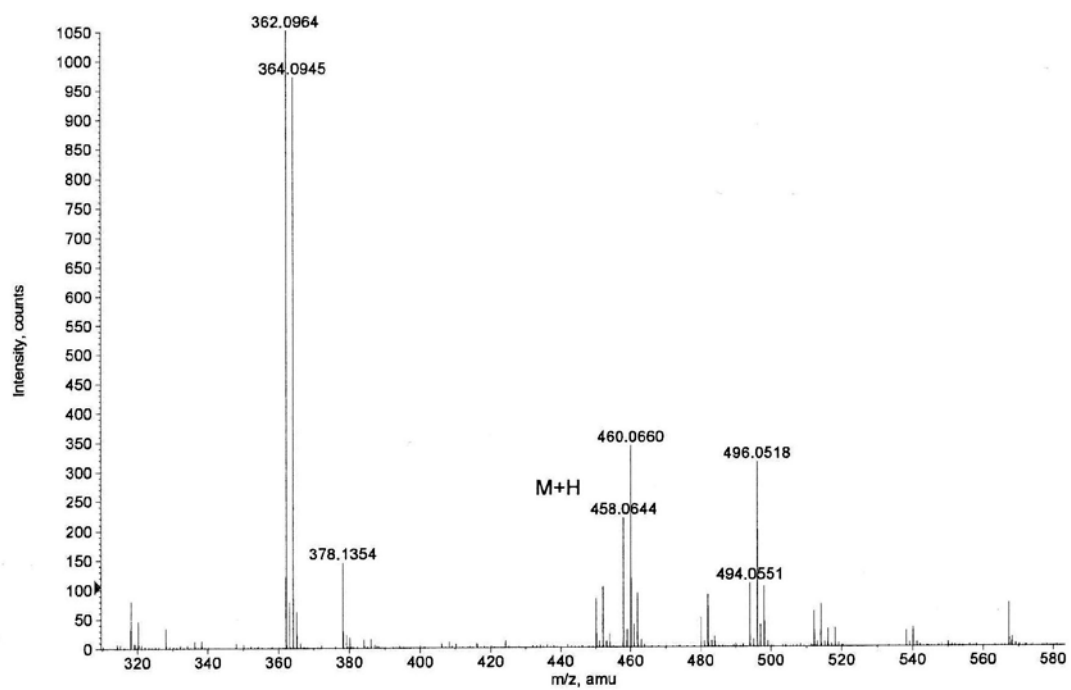
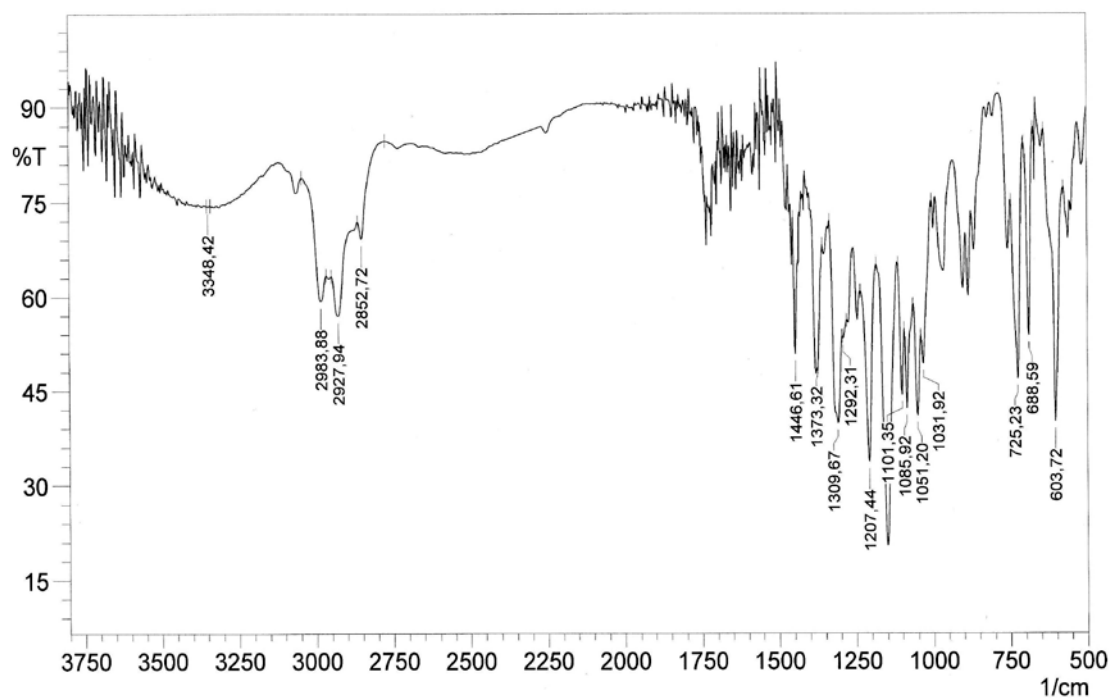


IR y HRMS del compuesto **94**:

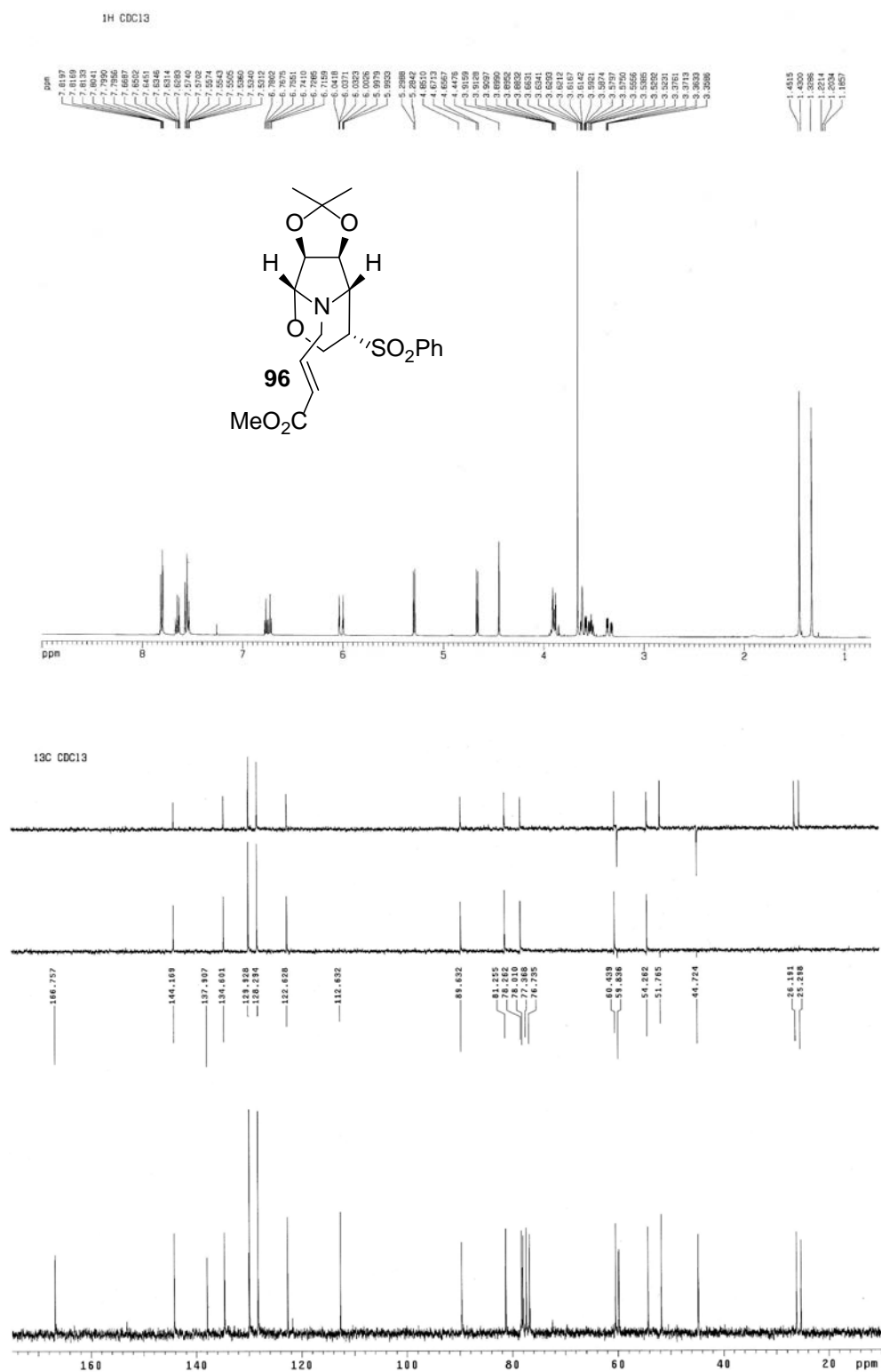


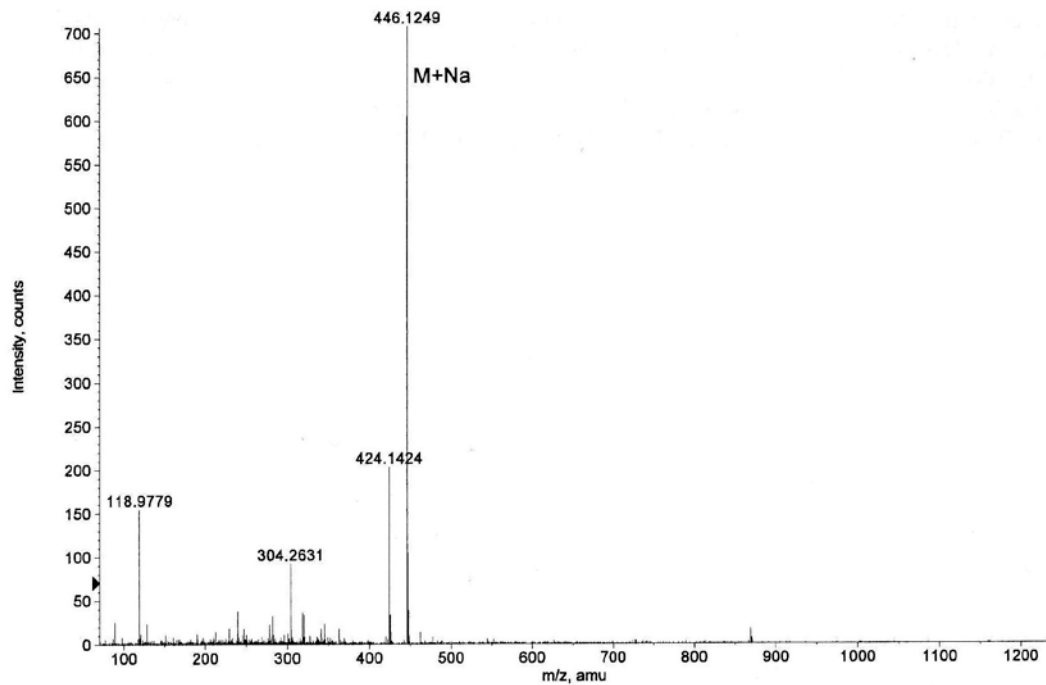
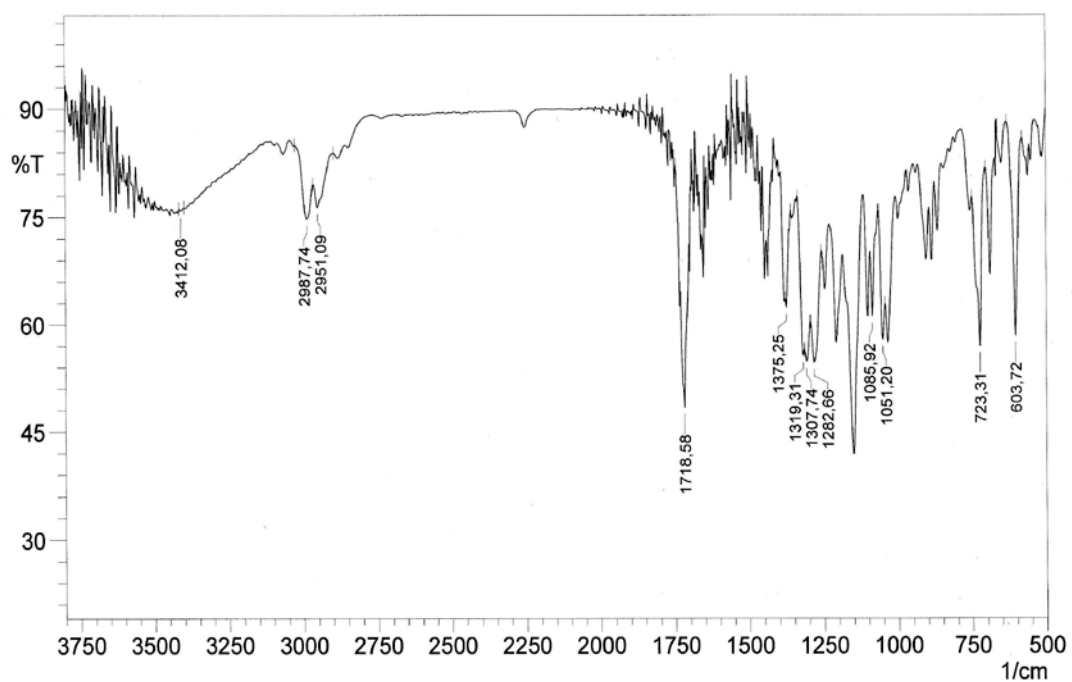
^1H y ^{13}C del compuesto **95**:



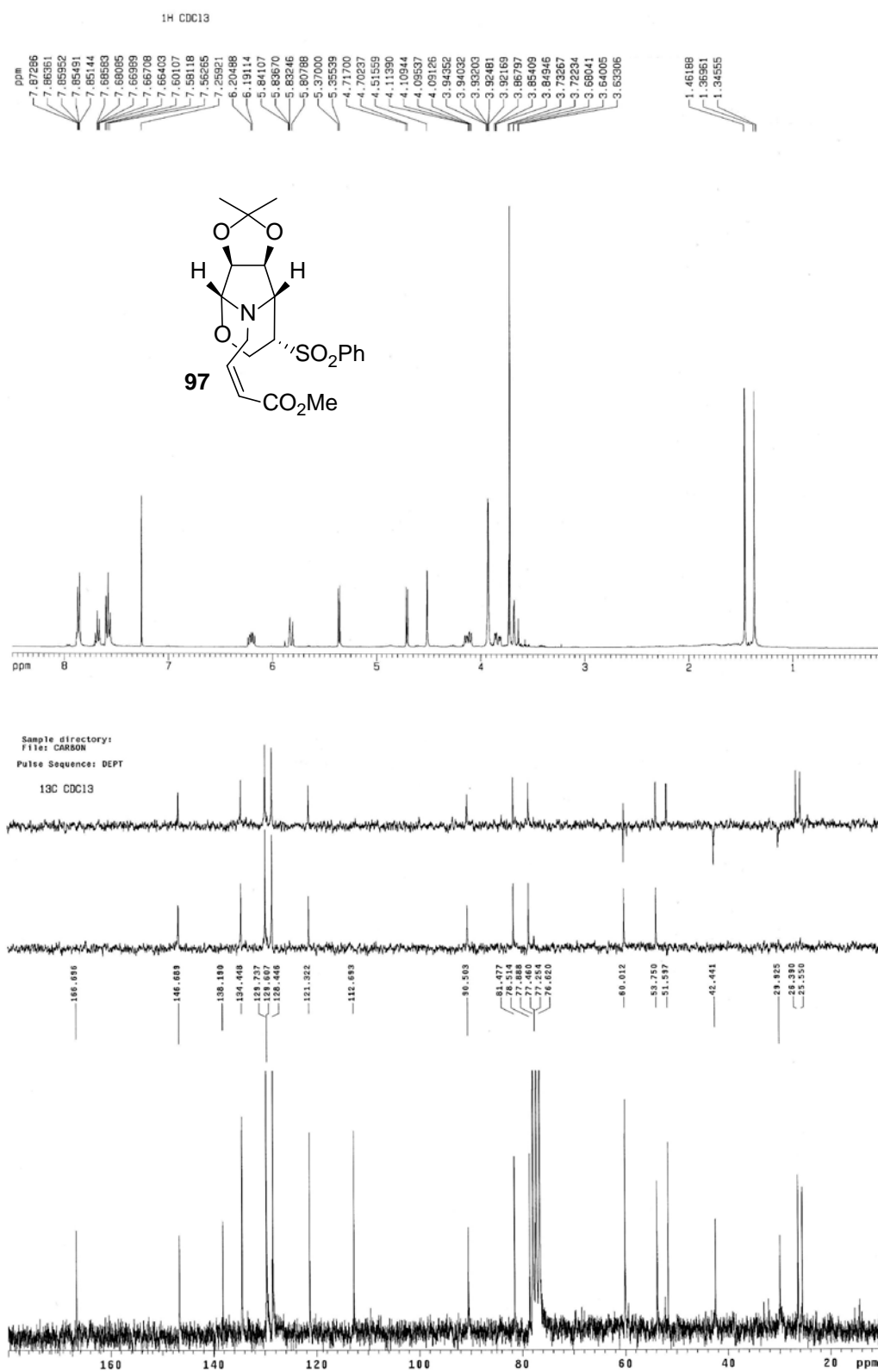
IR y HRMS del compuesto **95**:

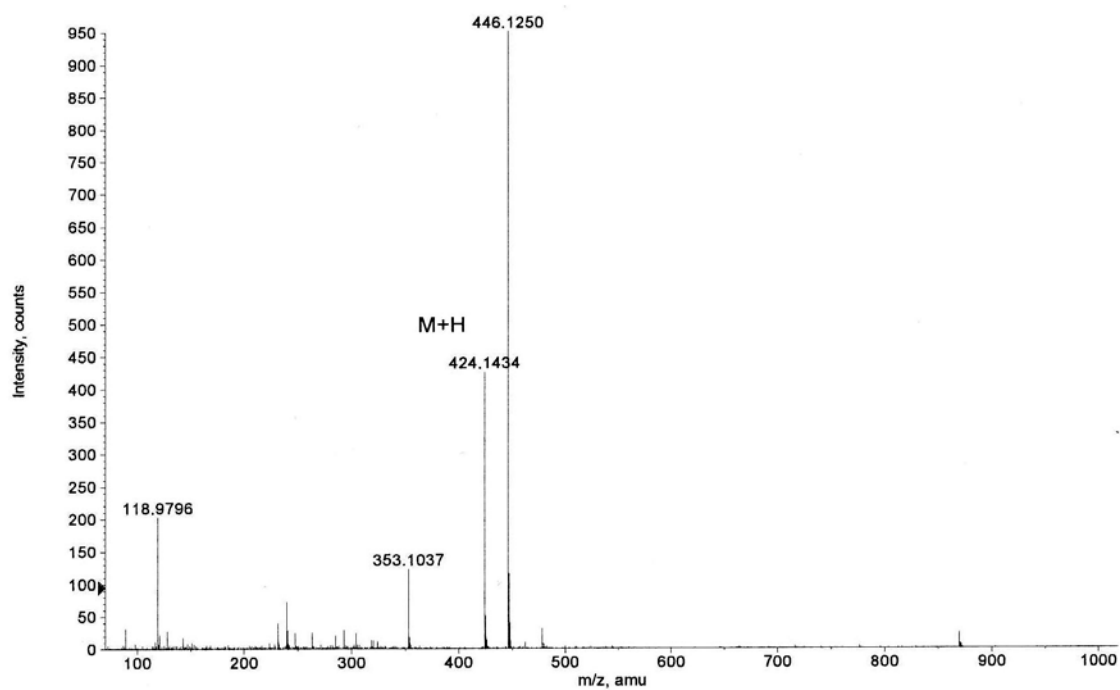
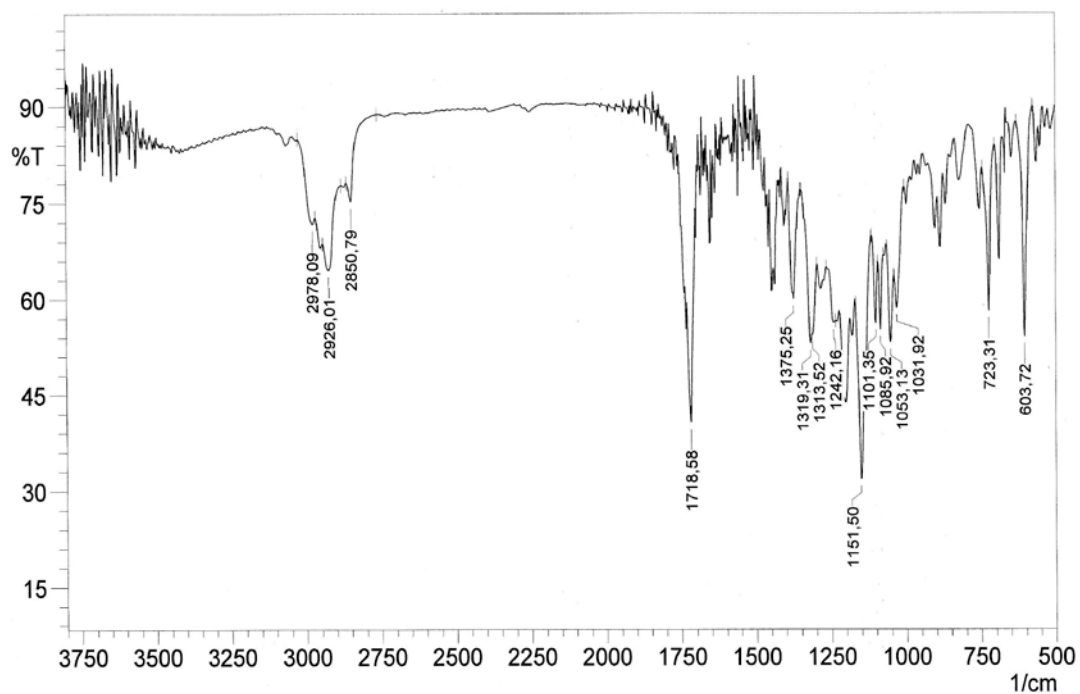
^1H y ^{13}C del compuesto **96**:



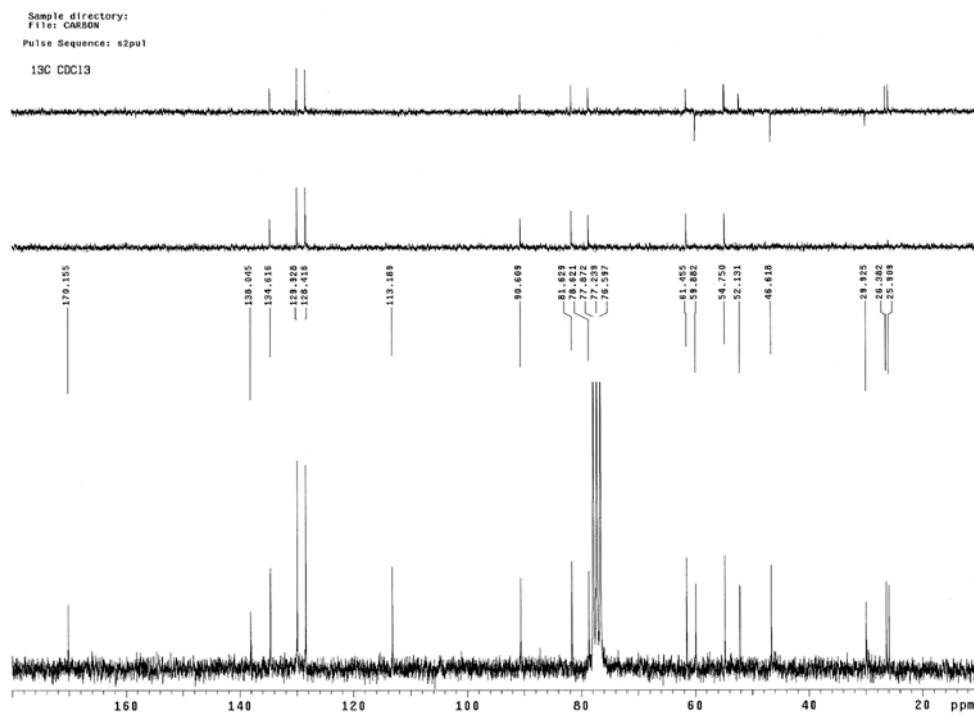
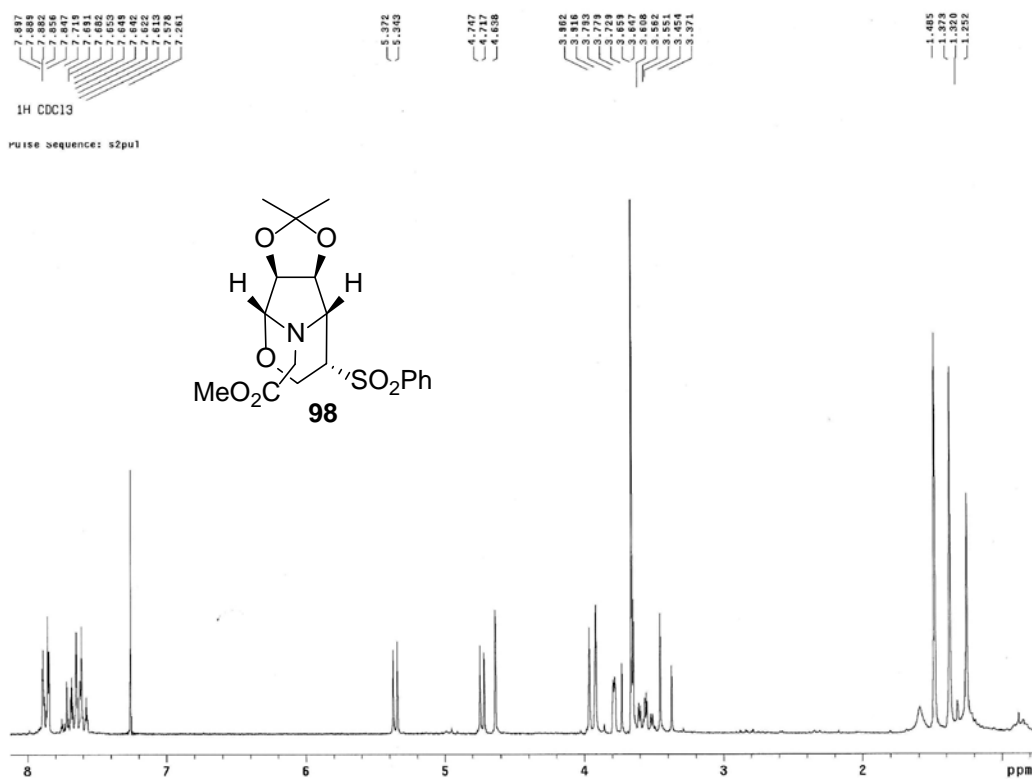
IR y HRMS del compuesto **96**:

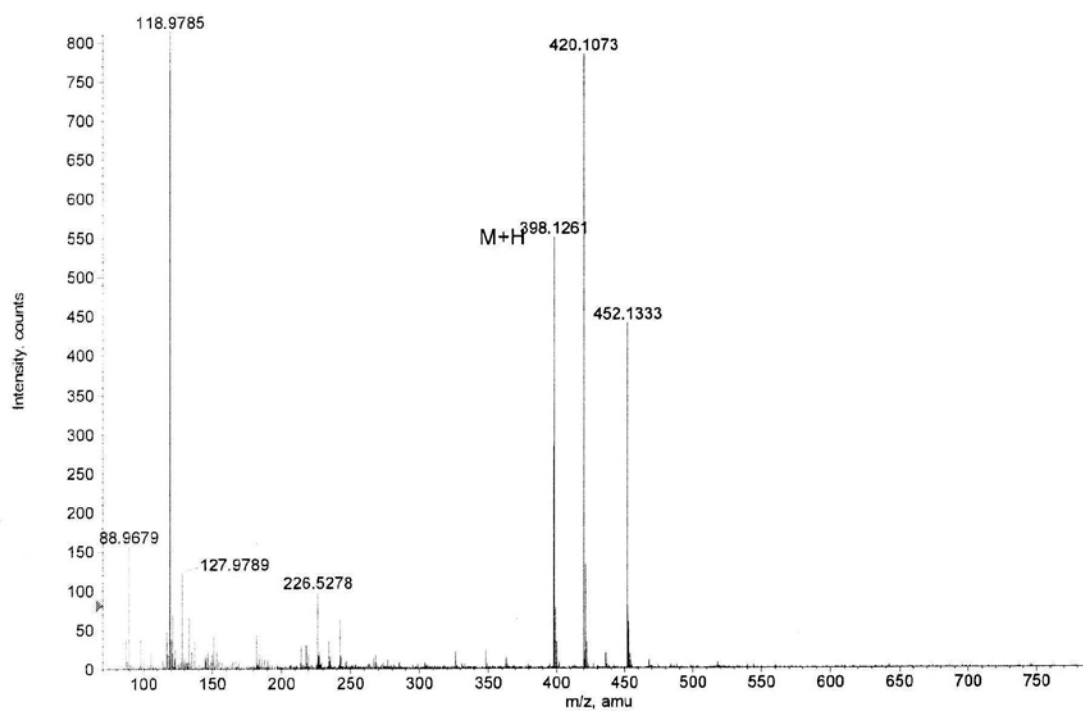
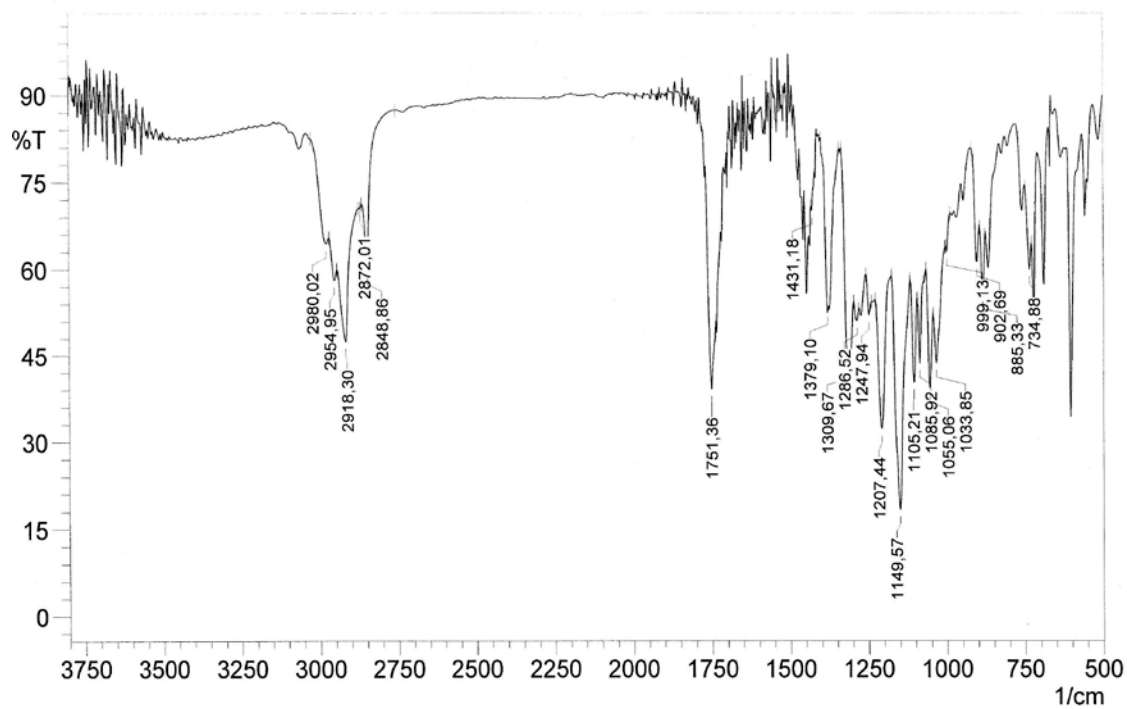
^1H y ^{13}C del compuesto **97**:

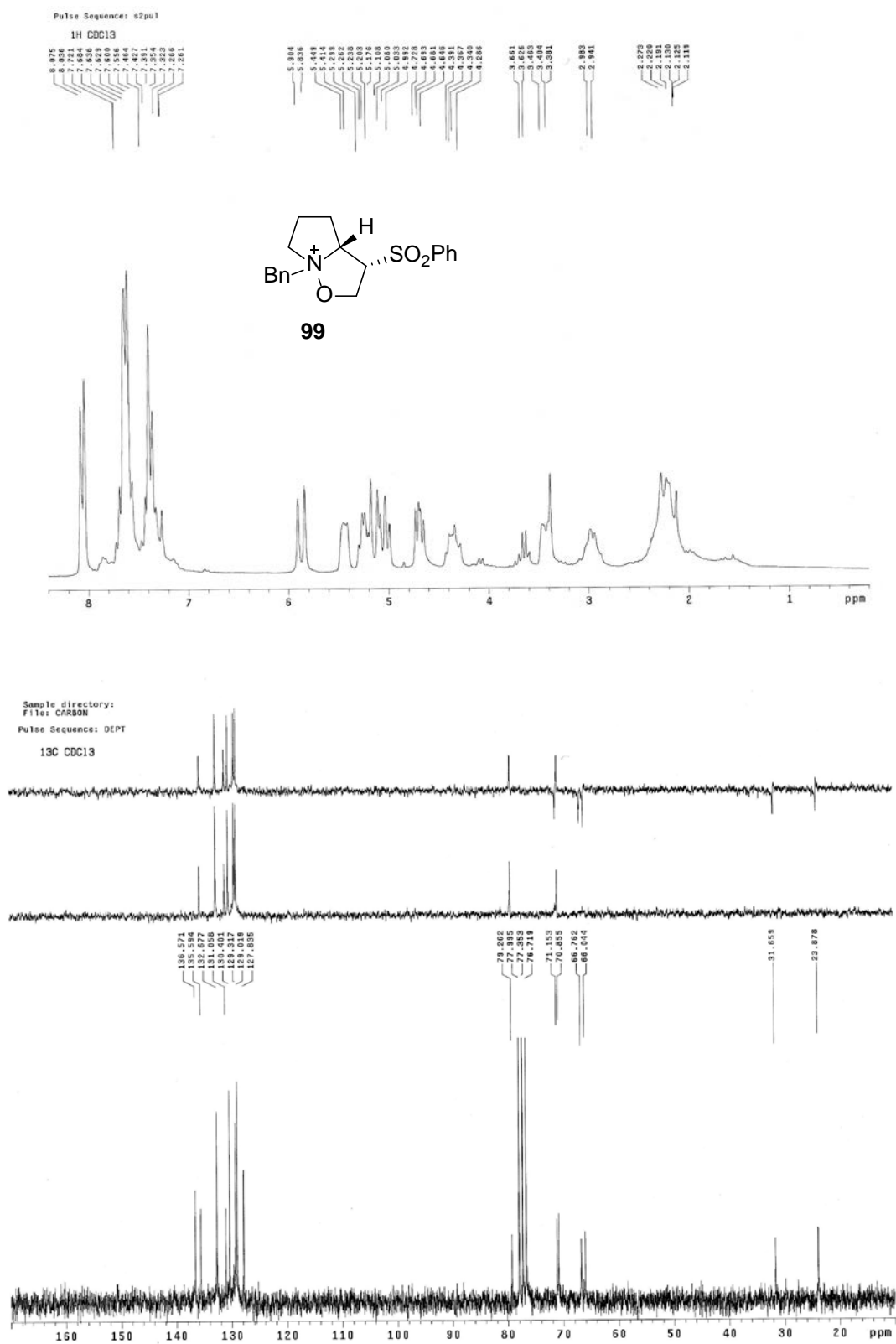


IR y HRMS del compuesto **97**:

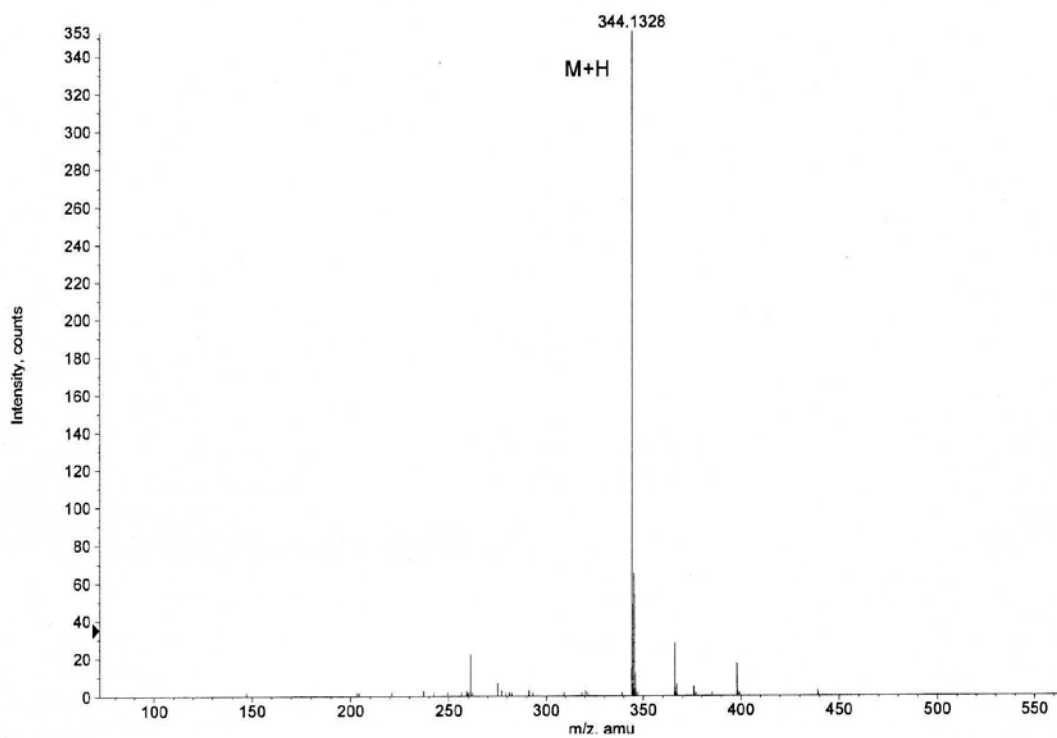
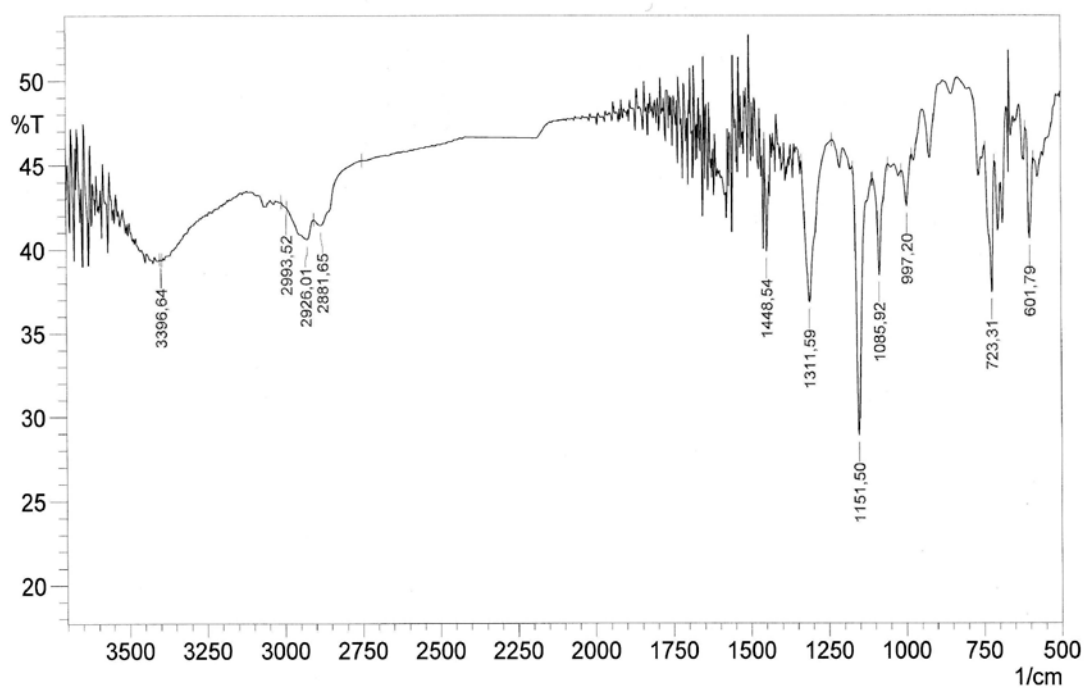
^1H y ^{13}C del compuesto **98**:



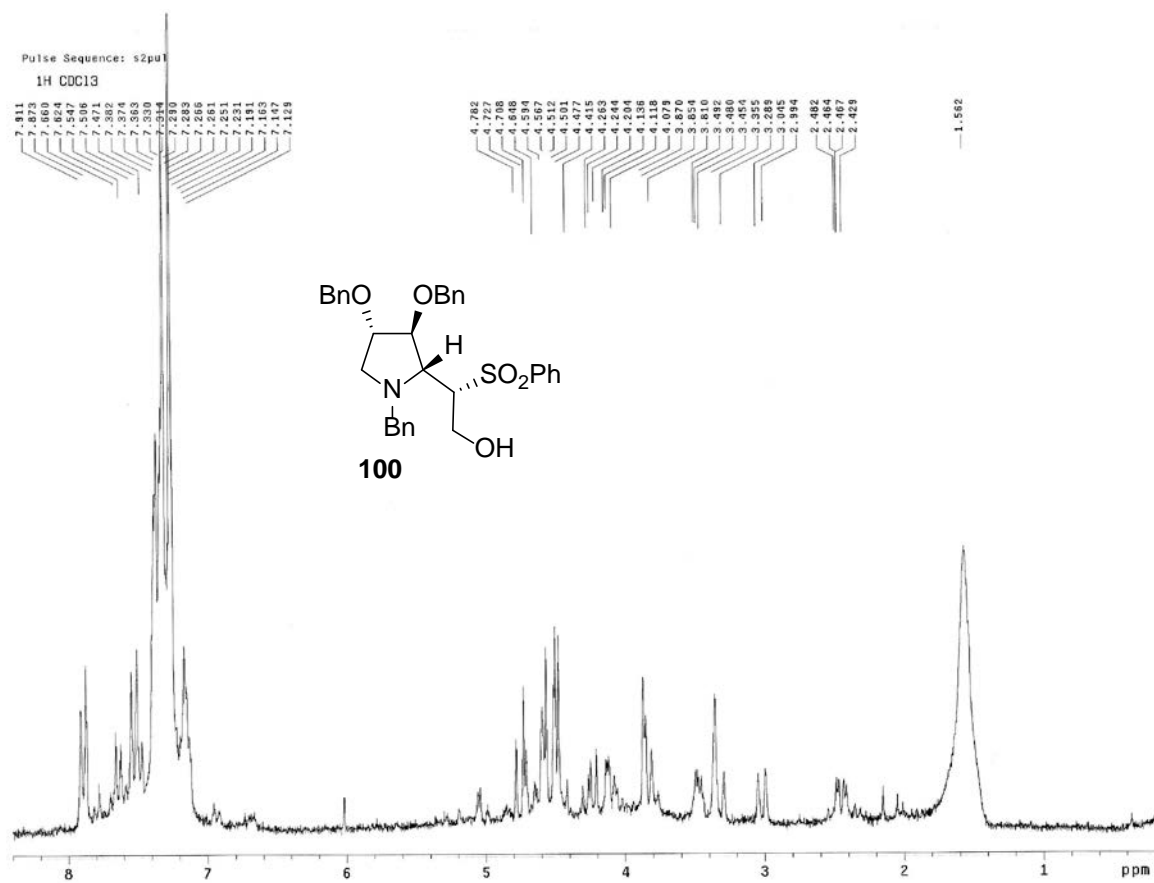
IR y HRMS del compuesto **98**:

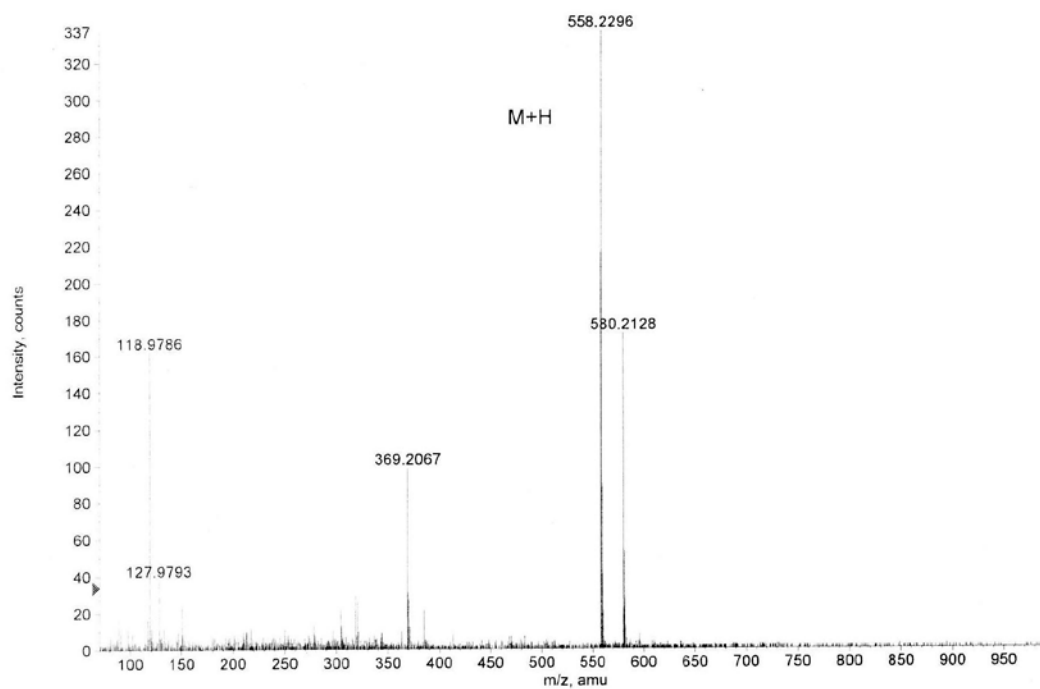
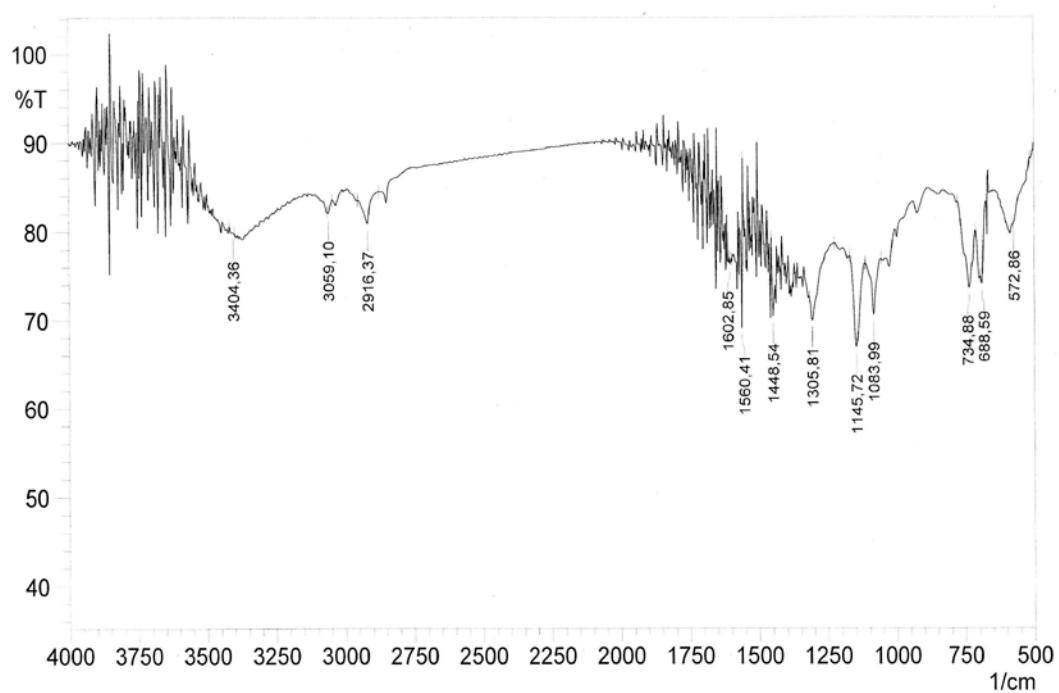
^1H y ^{13}C del compuesto **99**:

IR y HRMS del compuesto **99**:

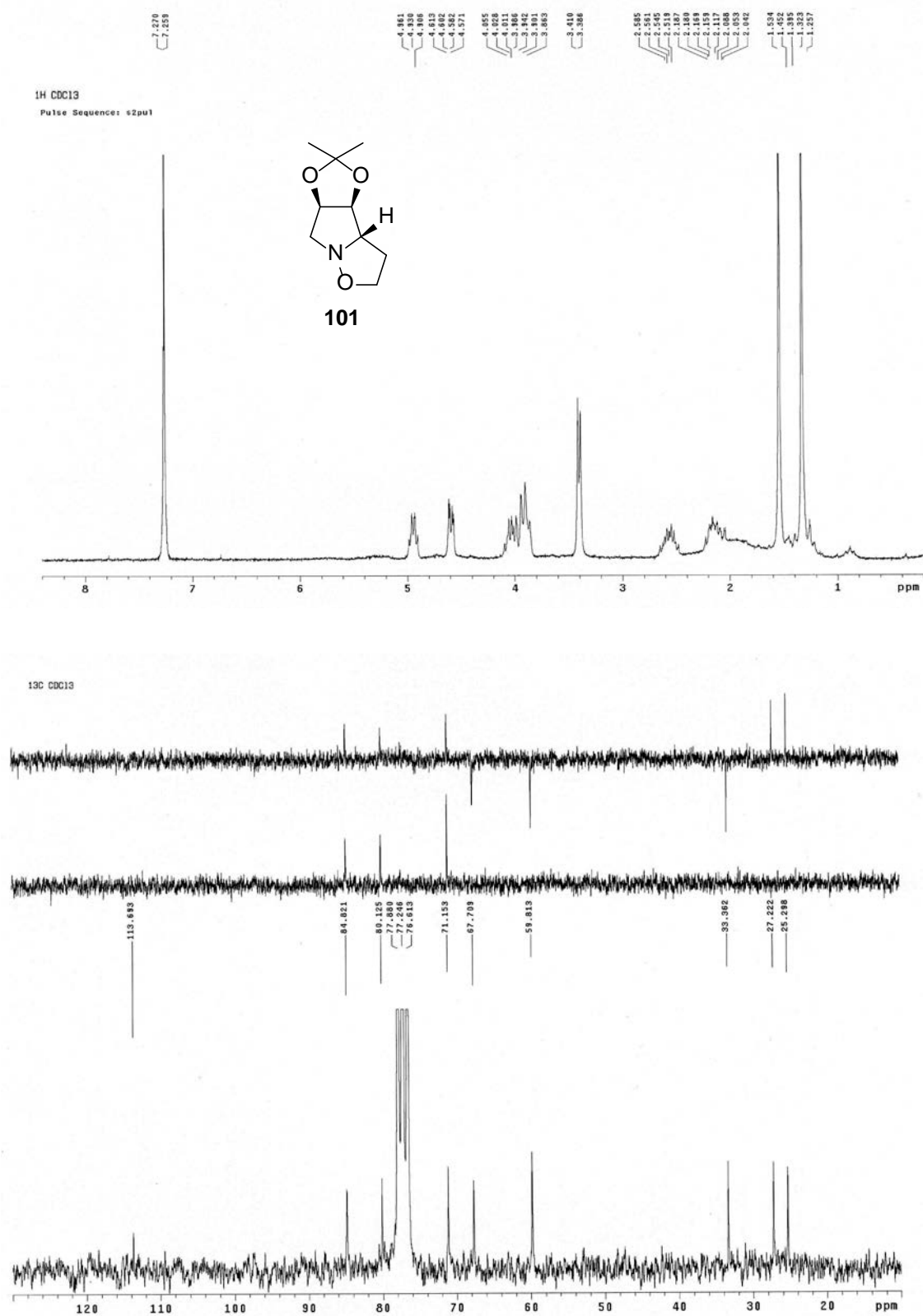


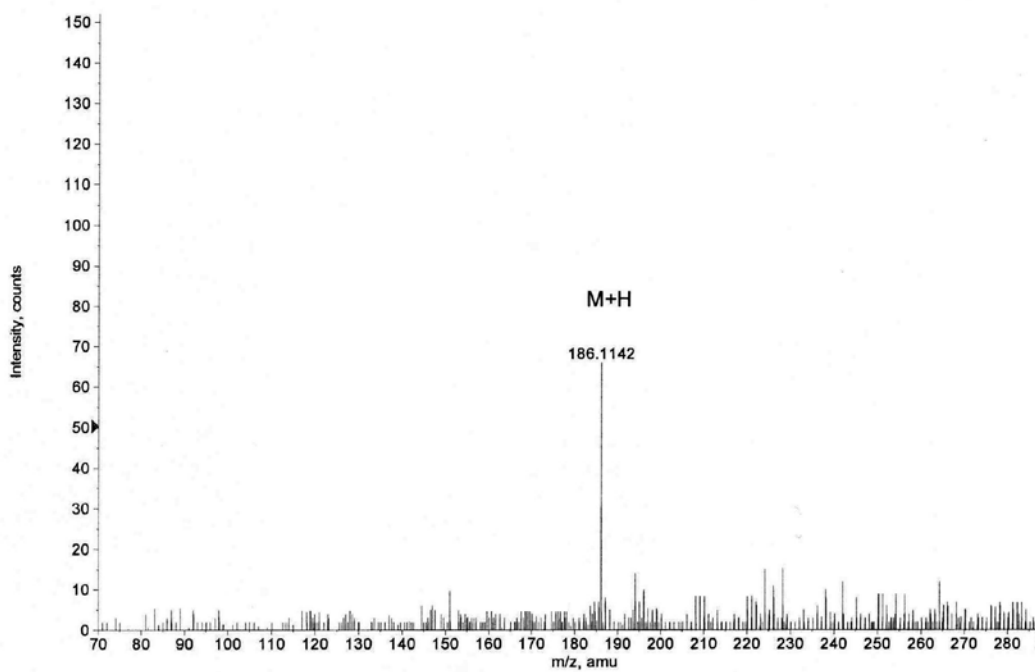
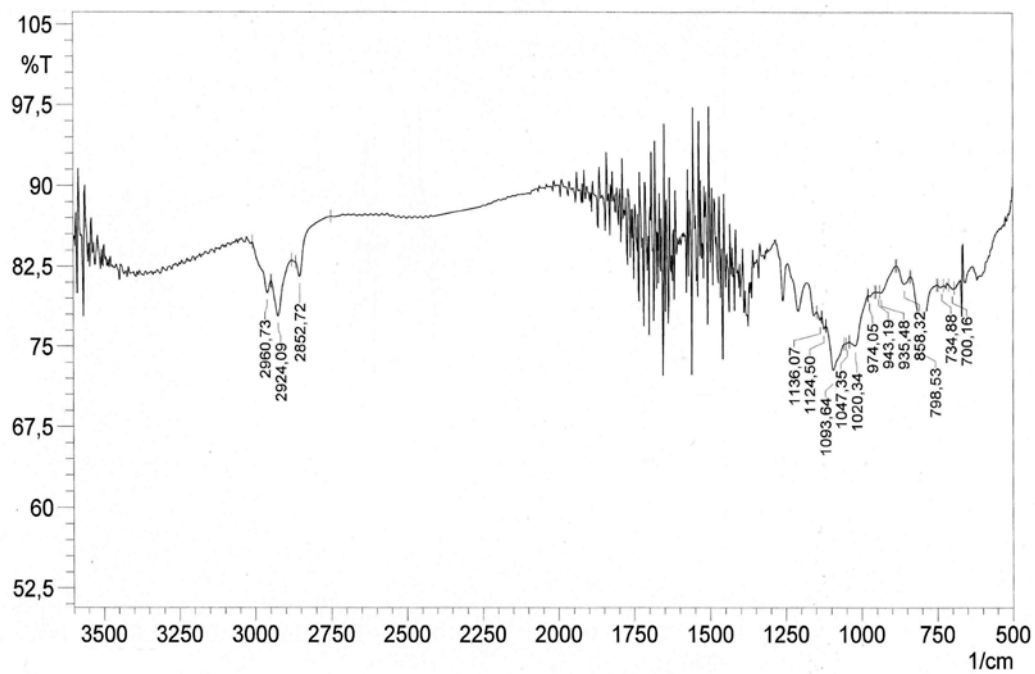
^1H del compuesto **100**:



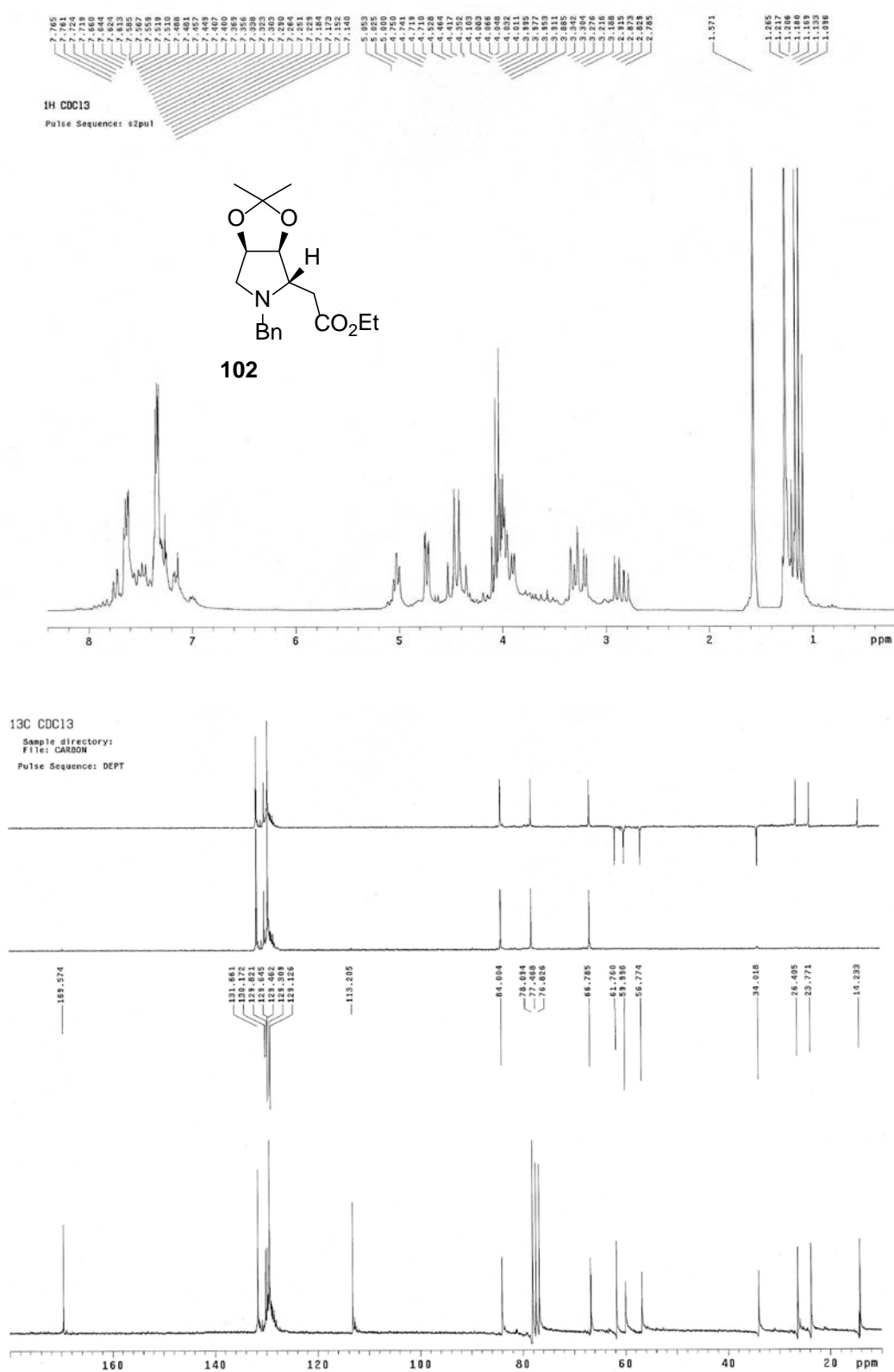
IR y HRMS del compuesto **100**:

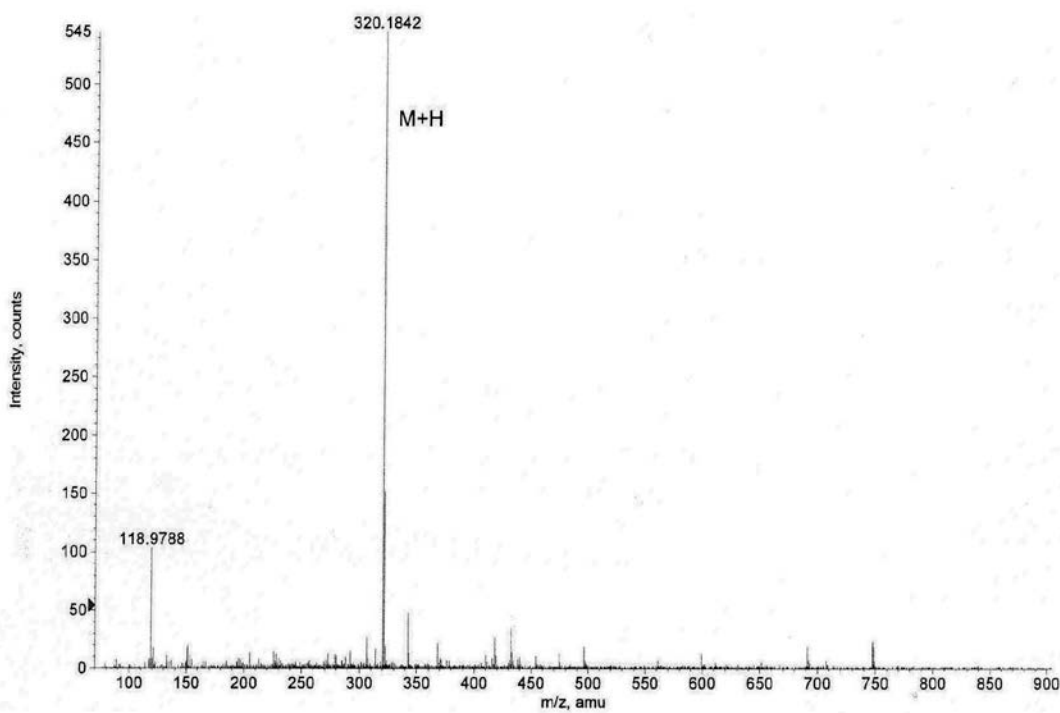
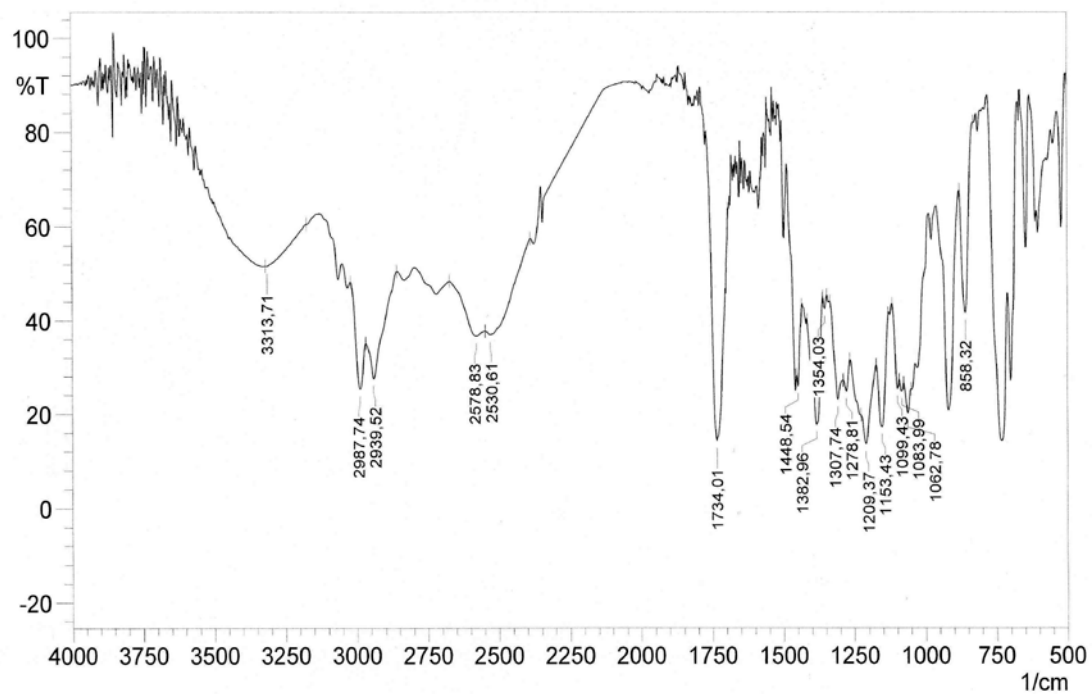
^1H y ^{13}C del compuesto **101**:



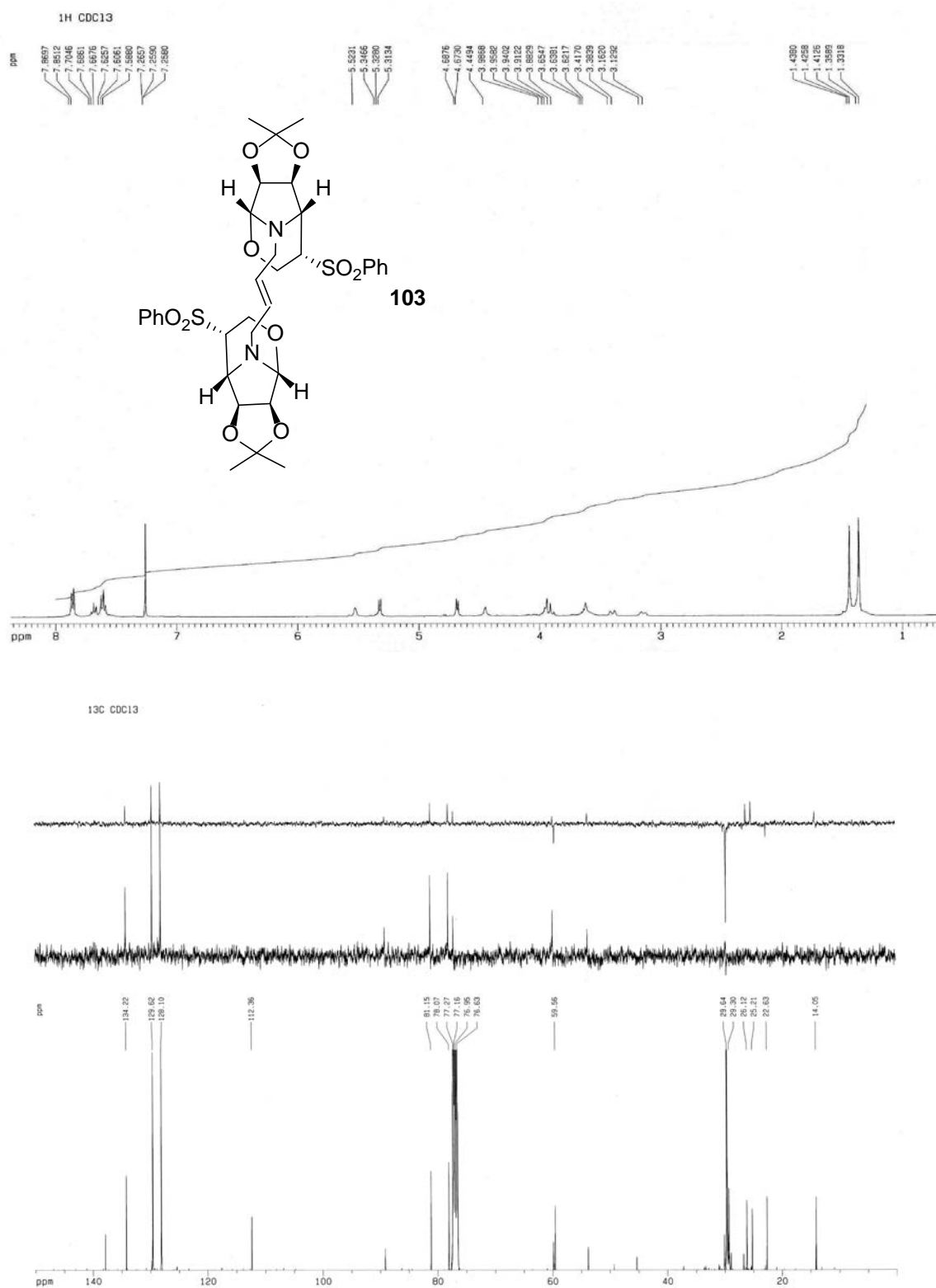
IR y HRMS del compuesto **101**:

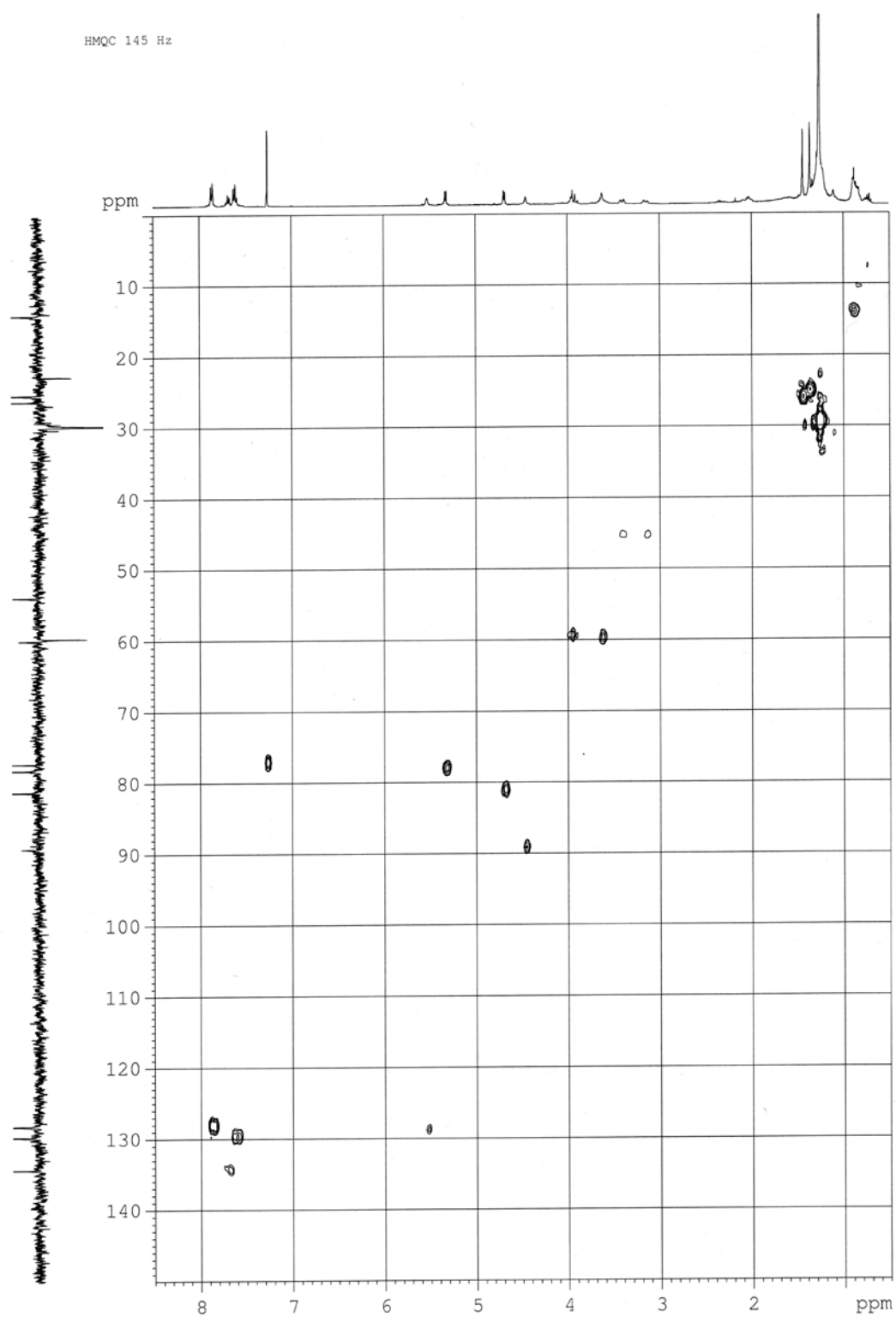
^1H y ^{13}C del compuesto **102**:

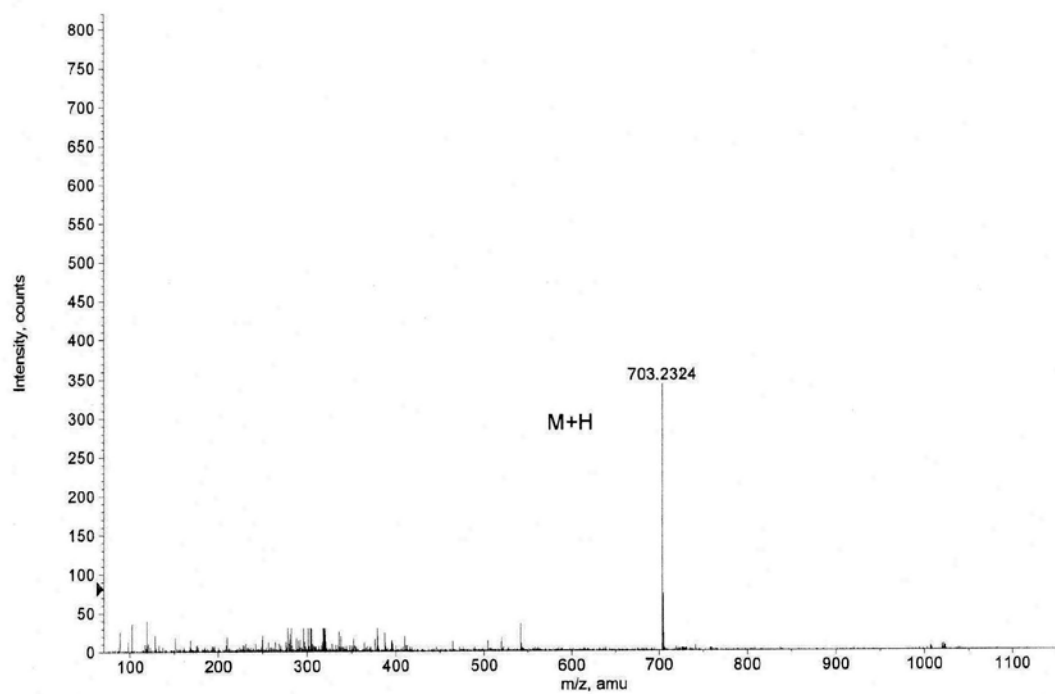
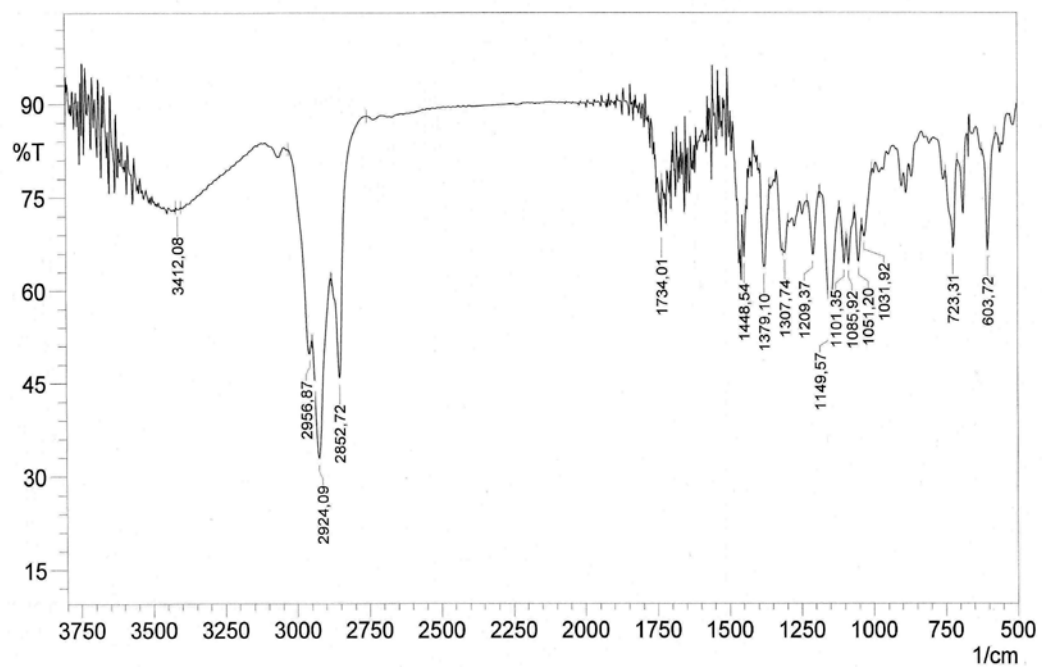


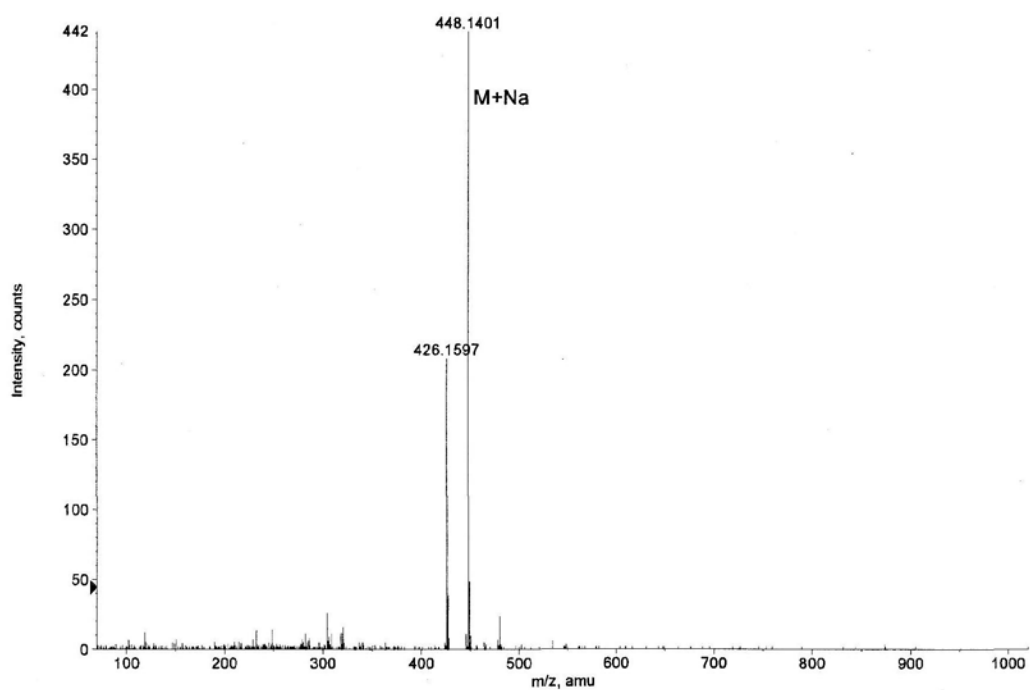
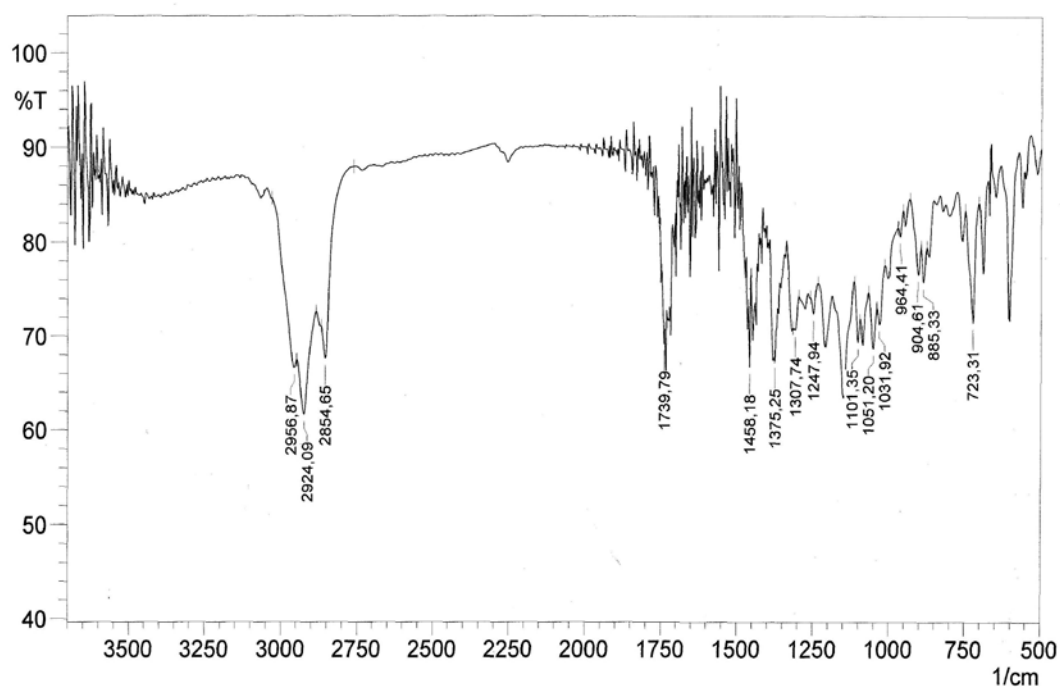
IR y HRMS del compuesto **102**:

^1H y ^{13}C del compuesto **103**:

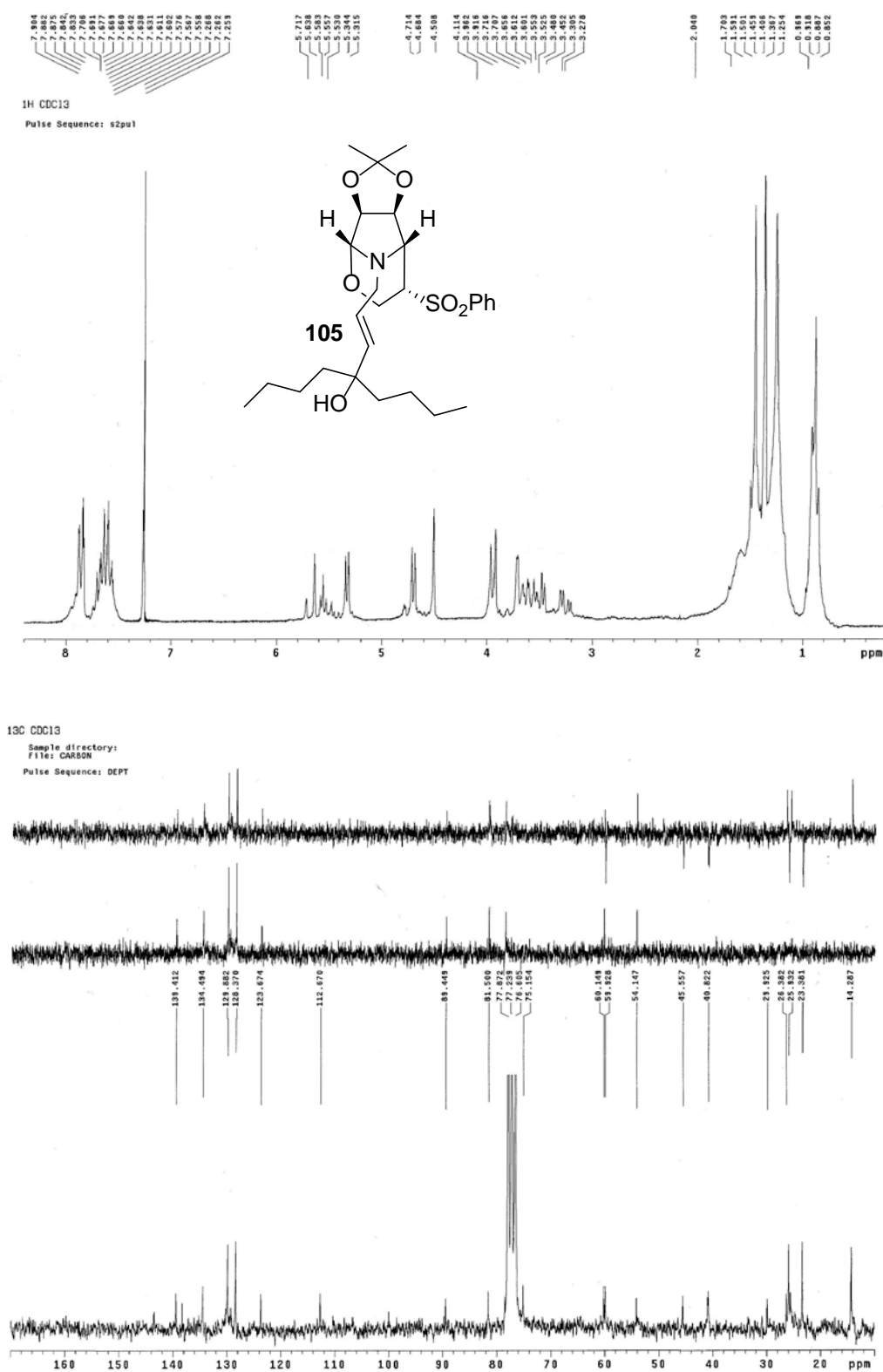


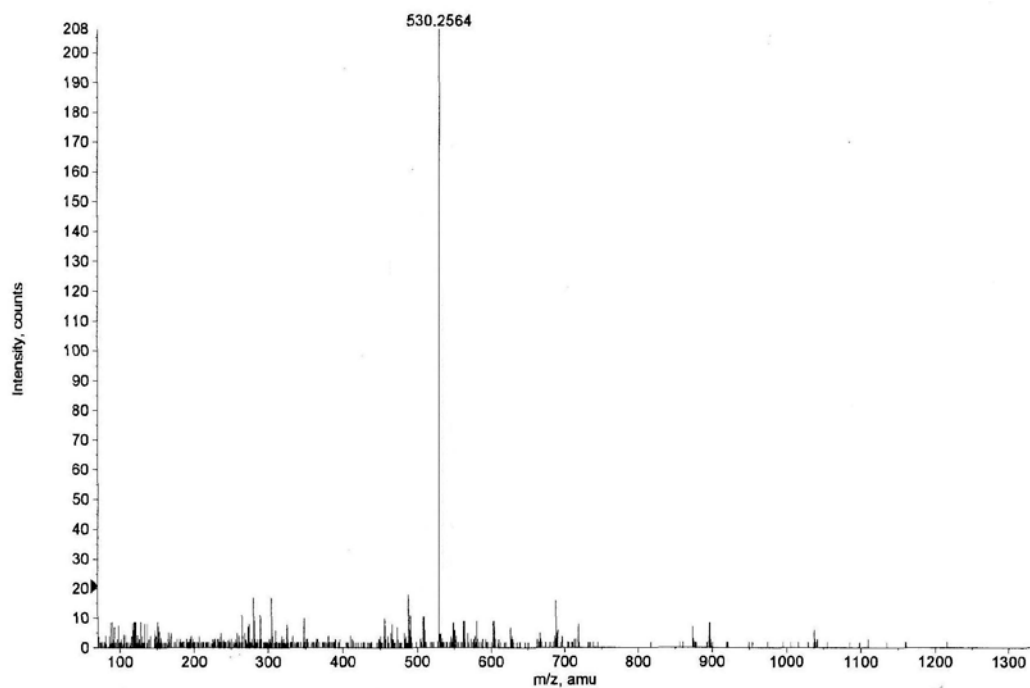
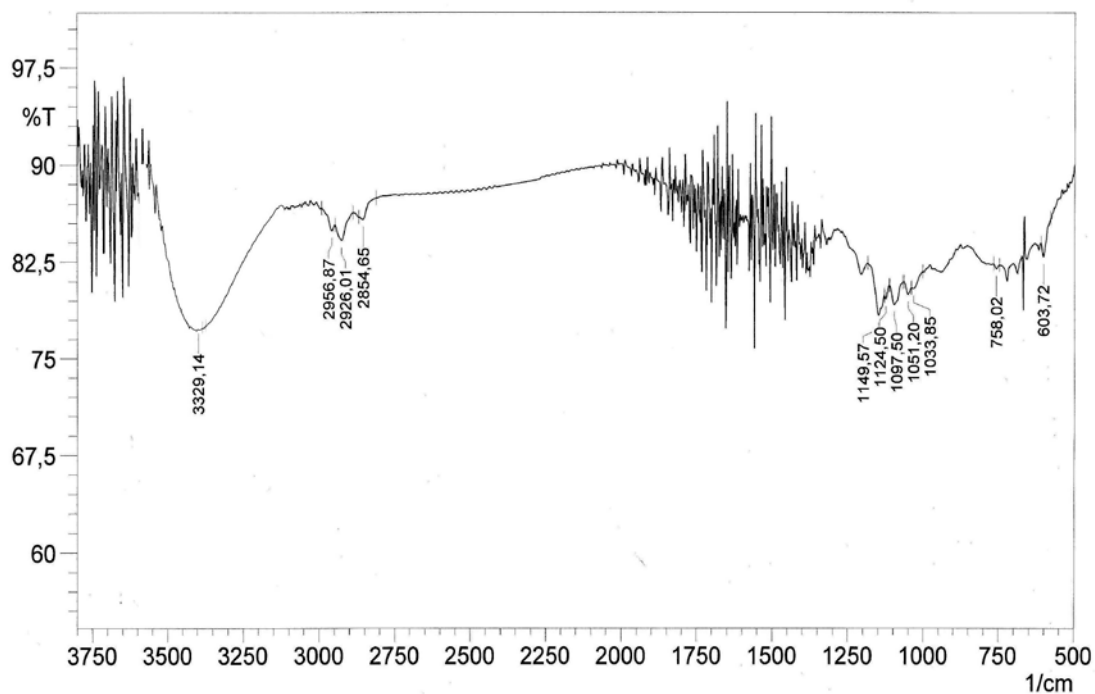
HMQC del compuesto **103**:

IR y HRMS del compuesto **103**:

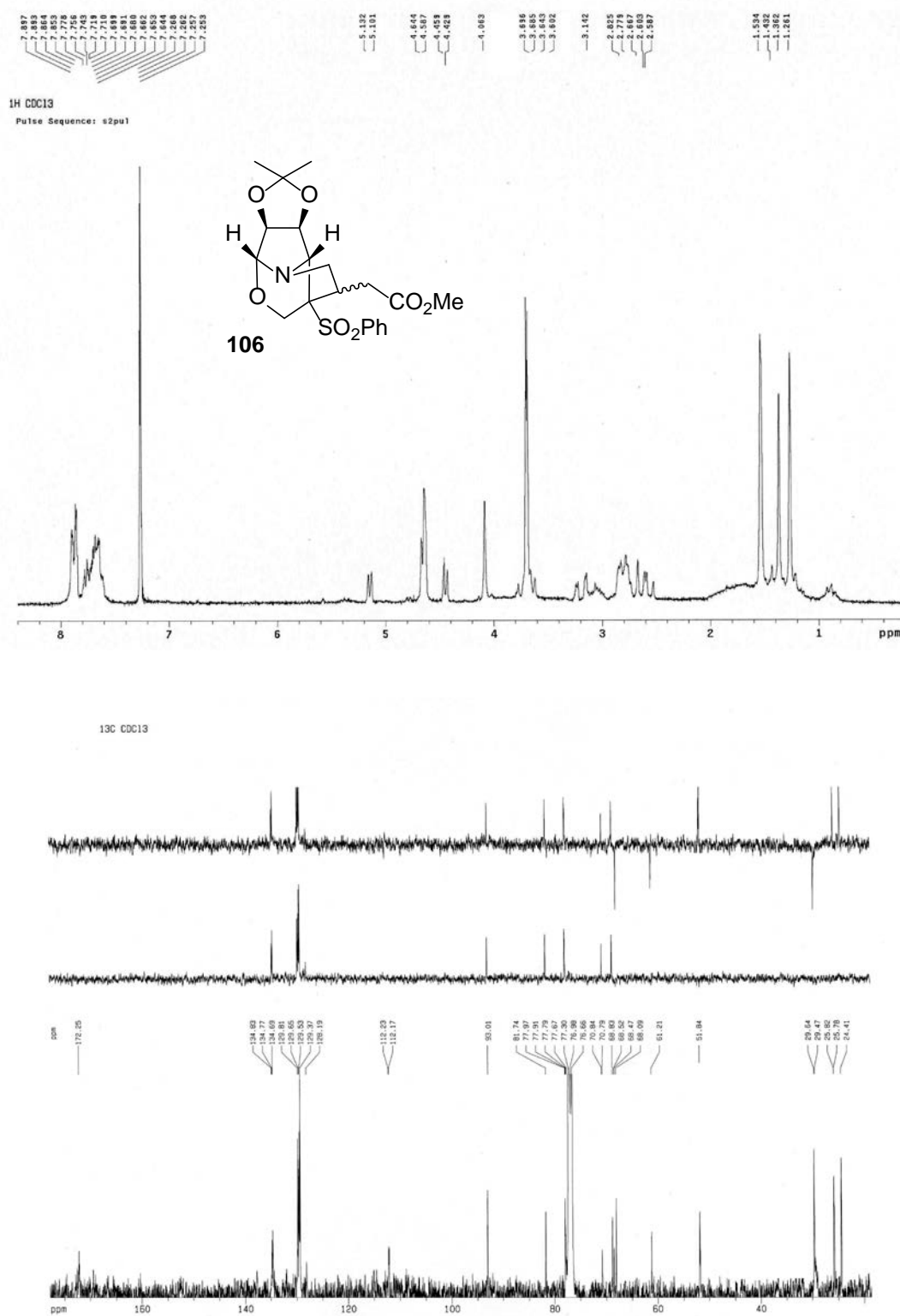
IR y HRMS del compuesto **104**:

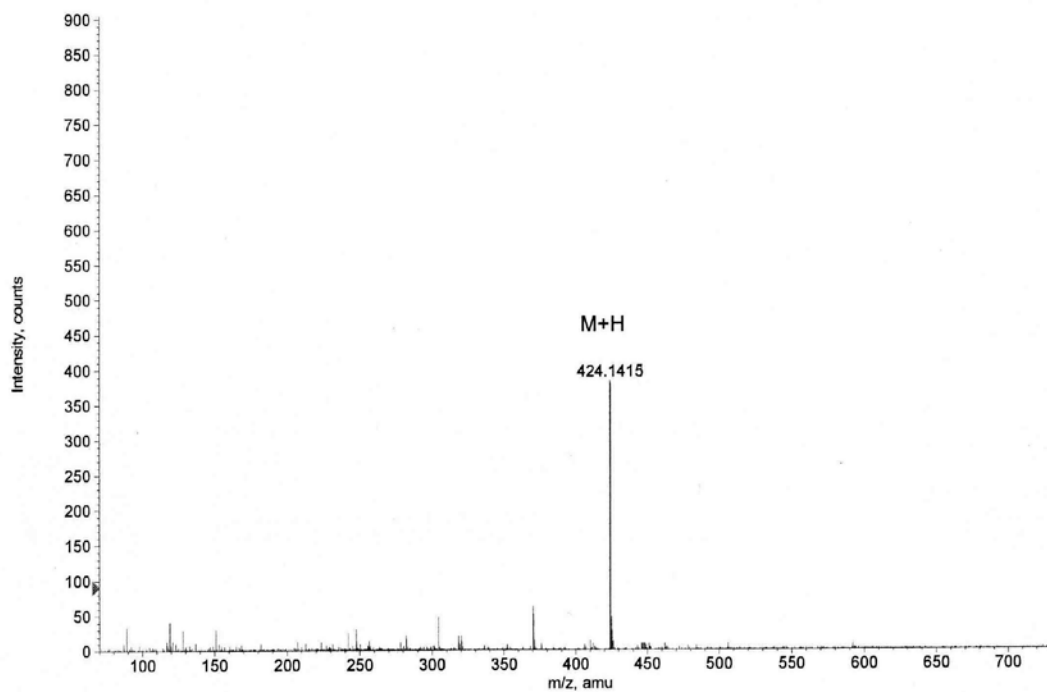
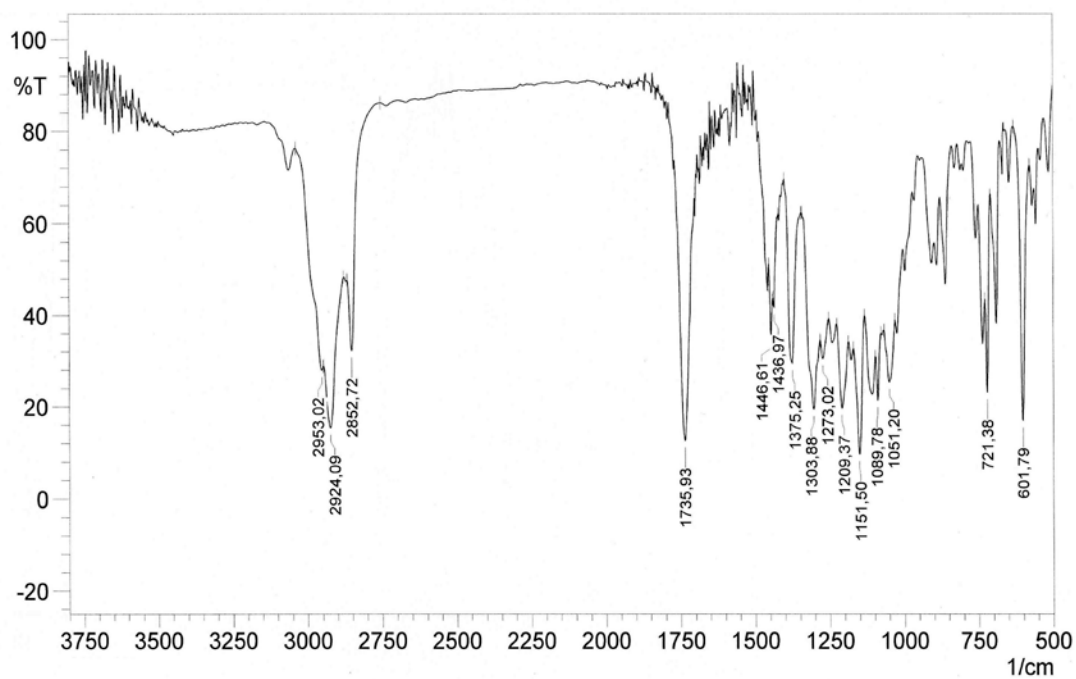
^1H y ^{13}C del compuesto **105**:



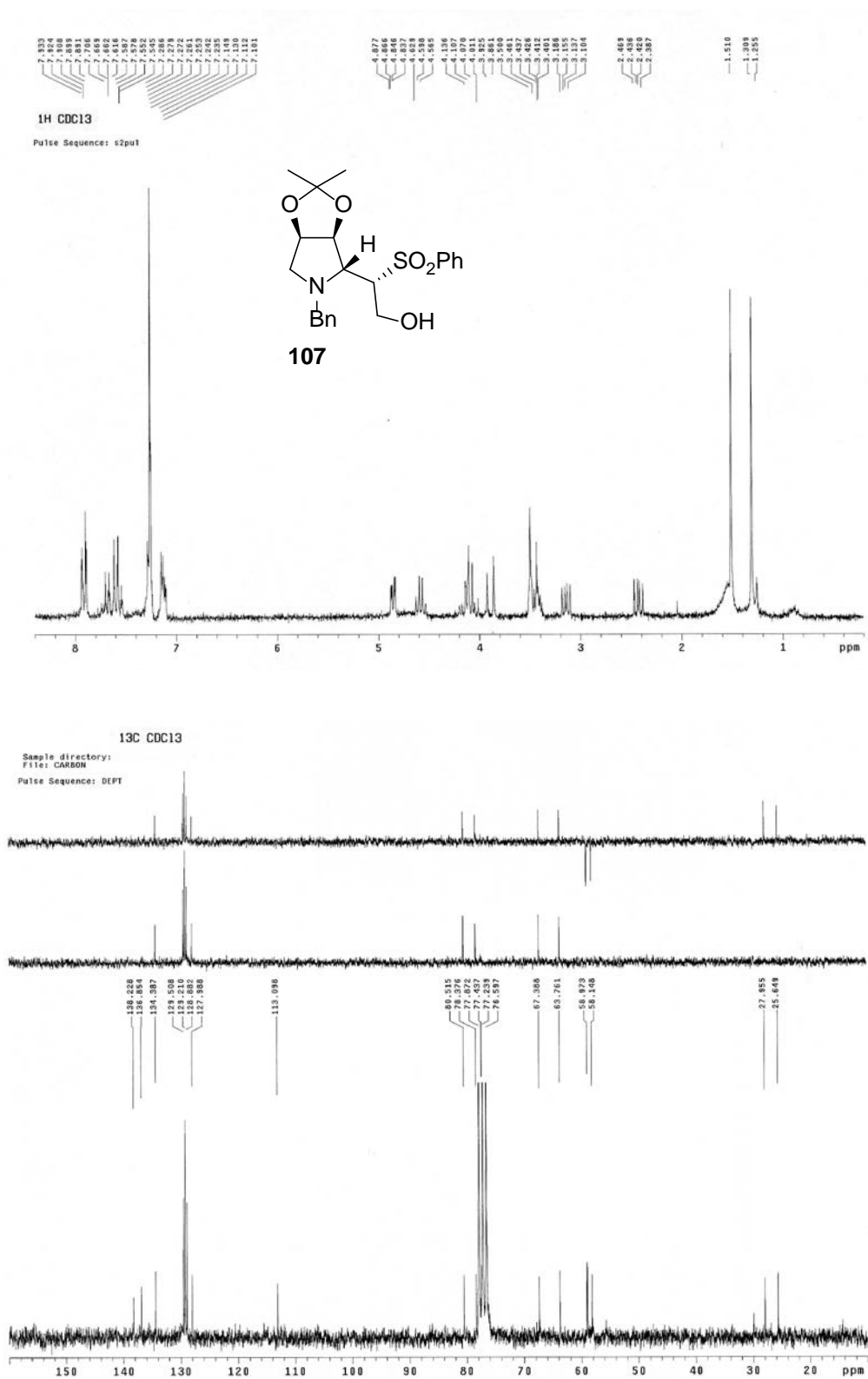
IR y HRMS del compuesto **105**:

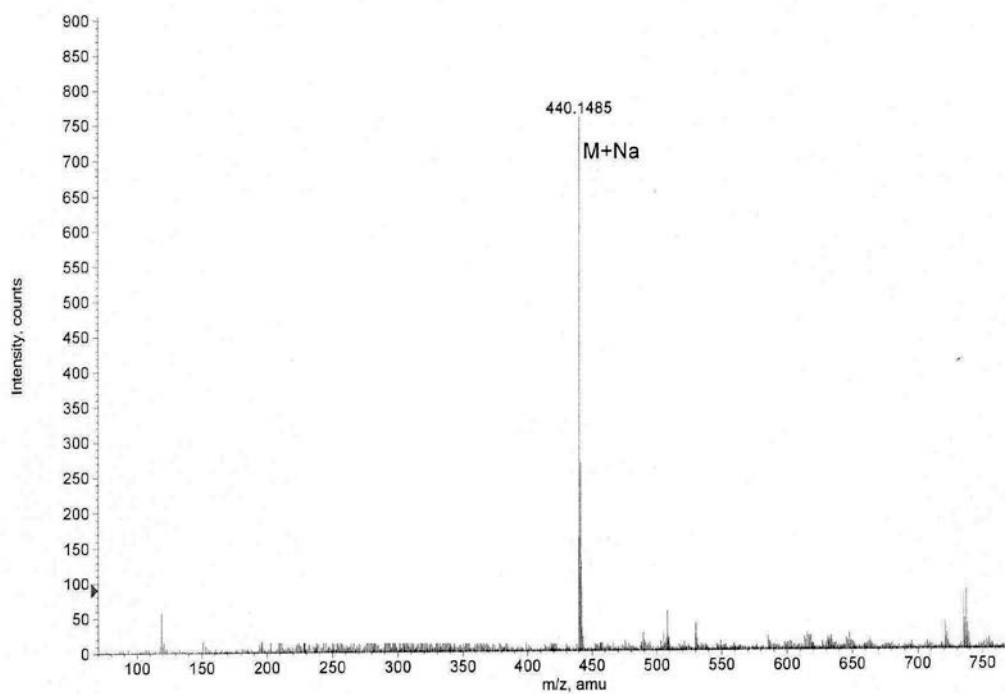
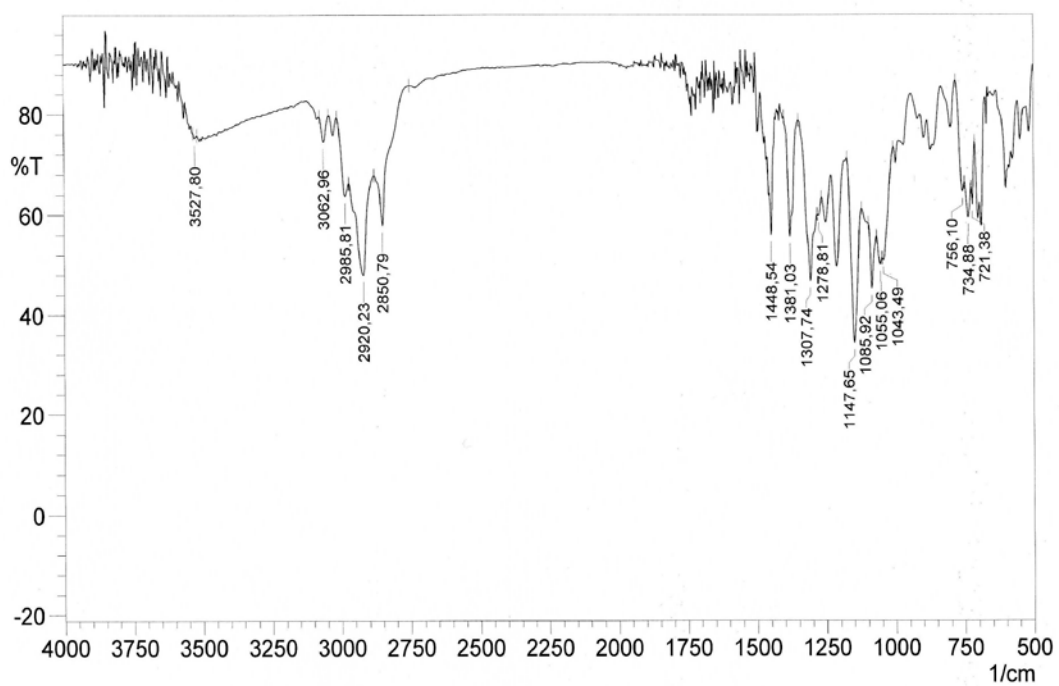
^1H y ^{13}C del compuesto **106**:



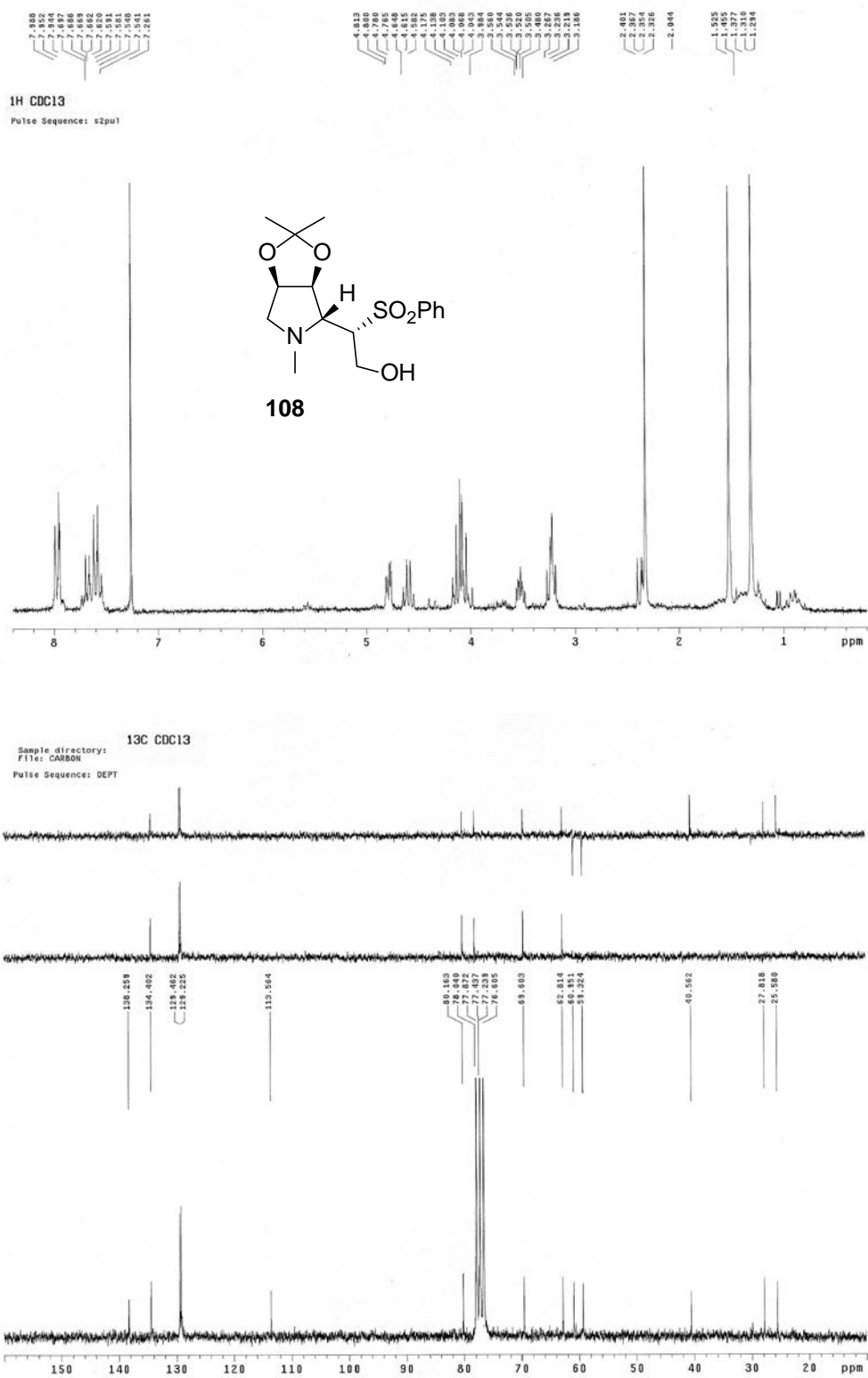
IR y HRMS del compuesto **106**:

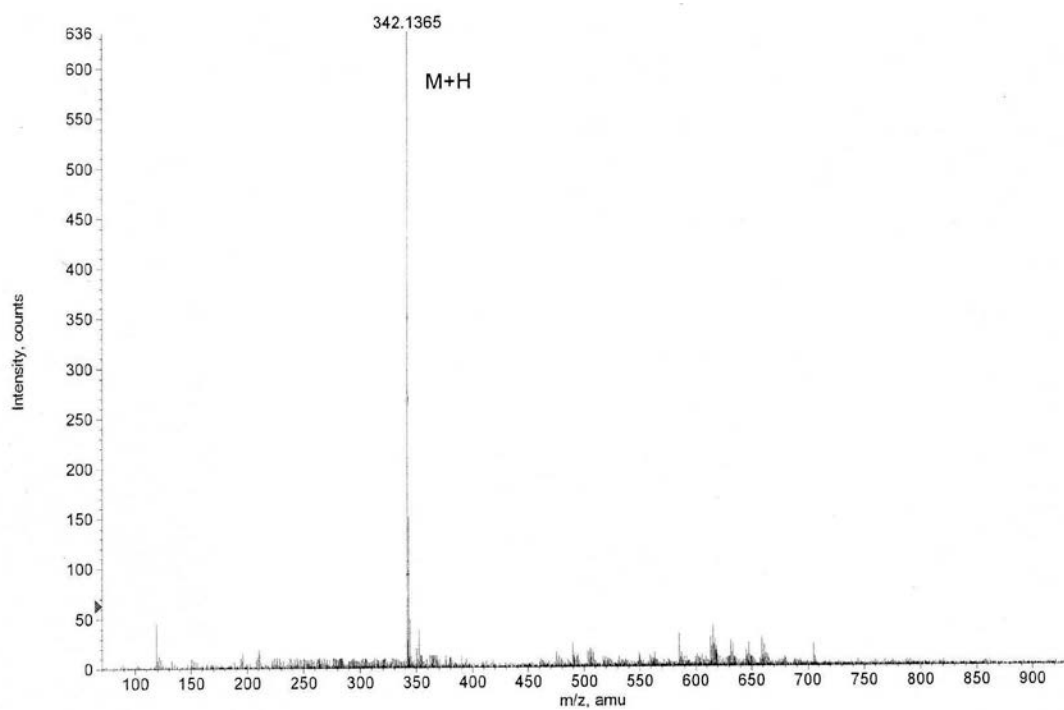
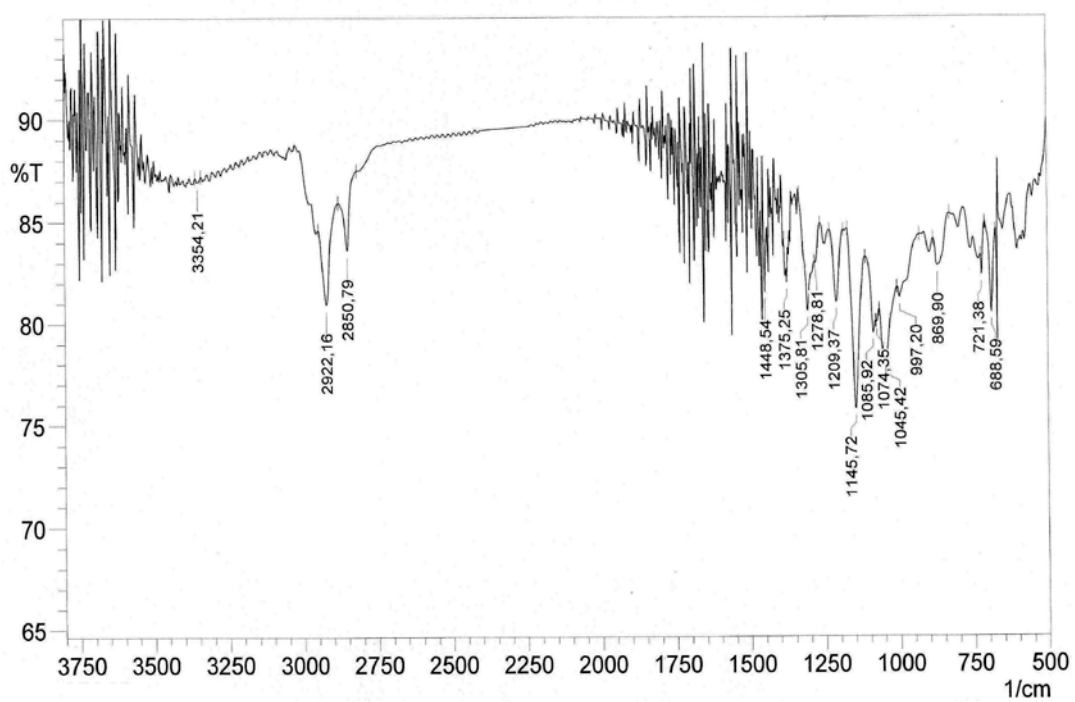
^1H y ^{13}C del compuesto **107**:



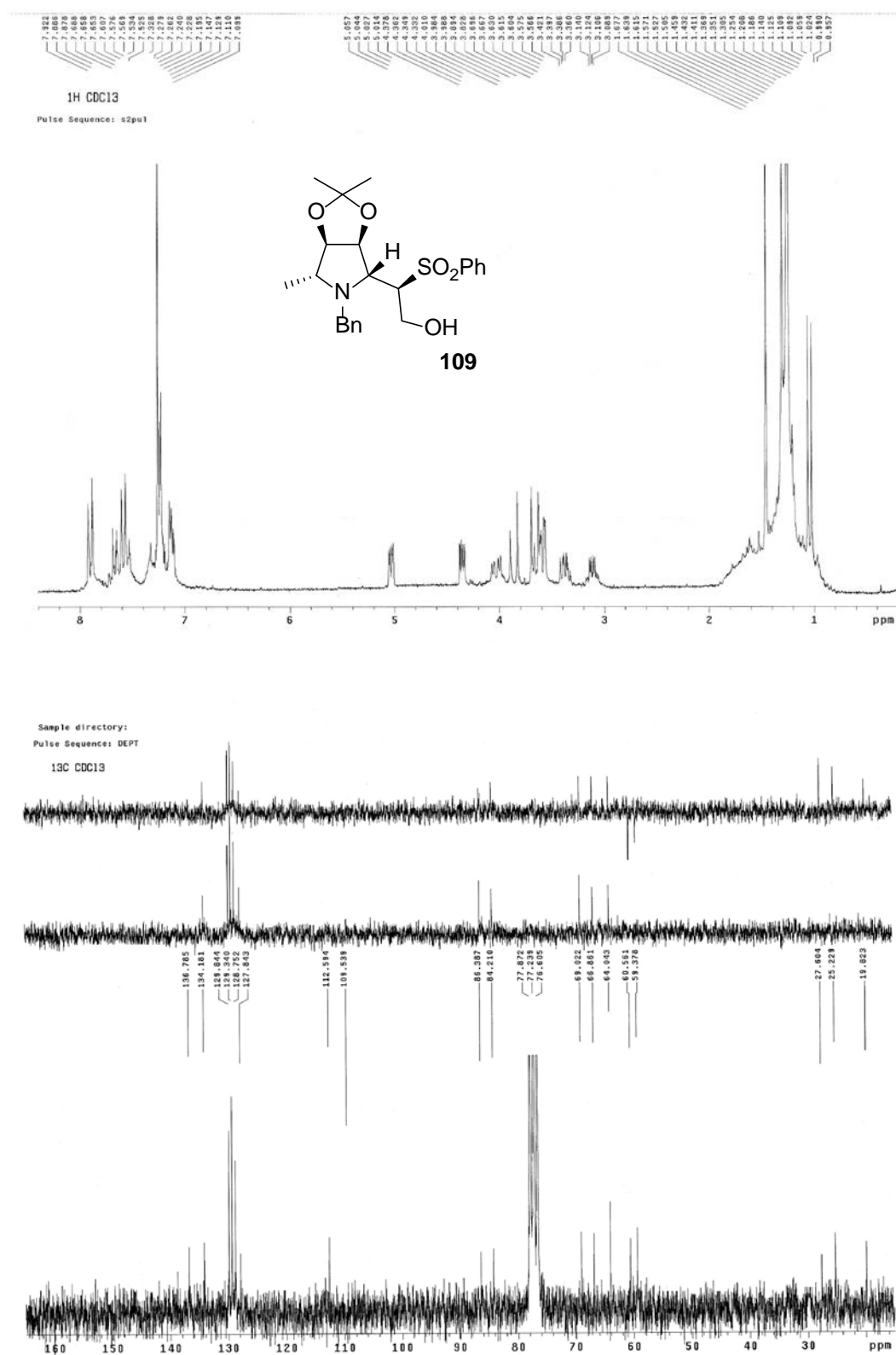
IR y HRMS del compuesto **107**:

^1H y ^{13}C del compuesto **108**:

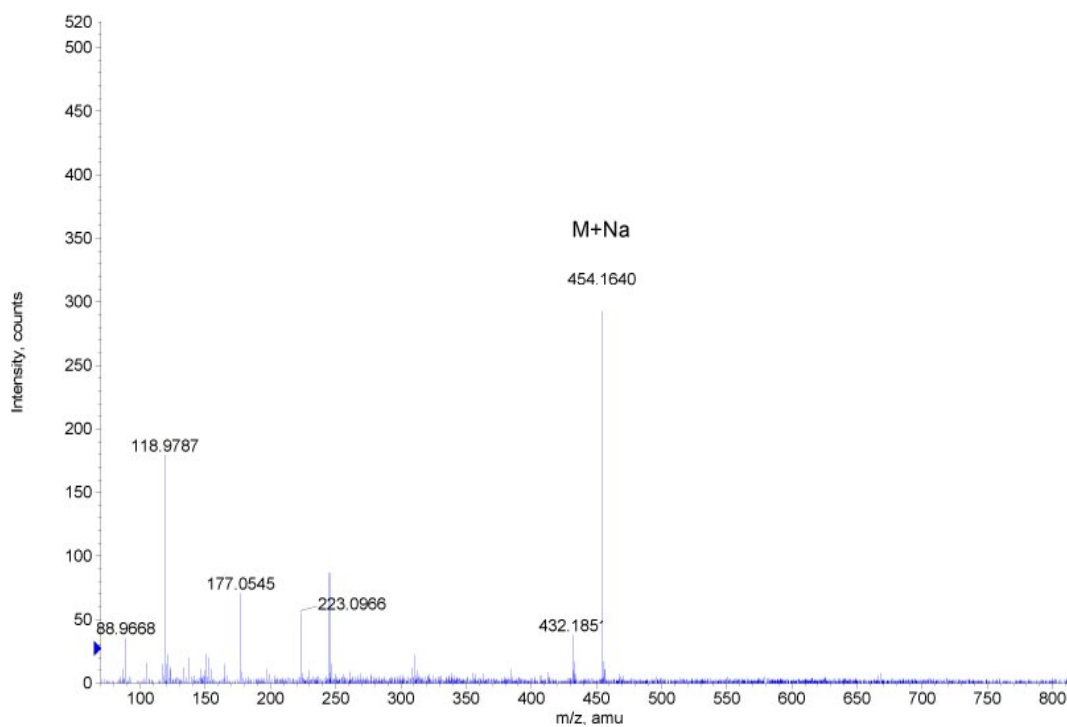
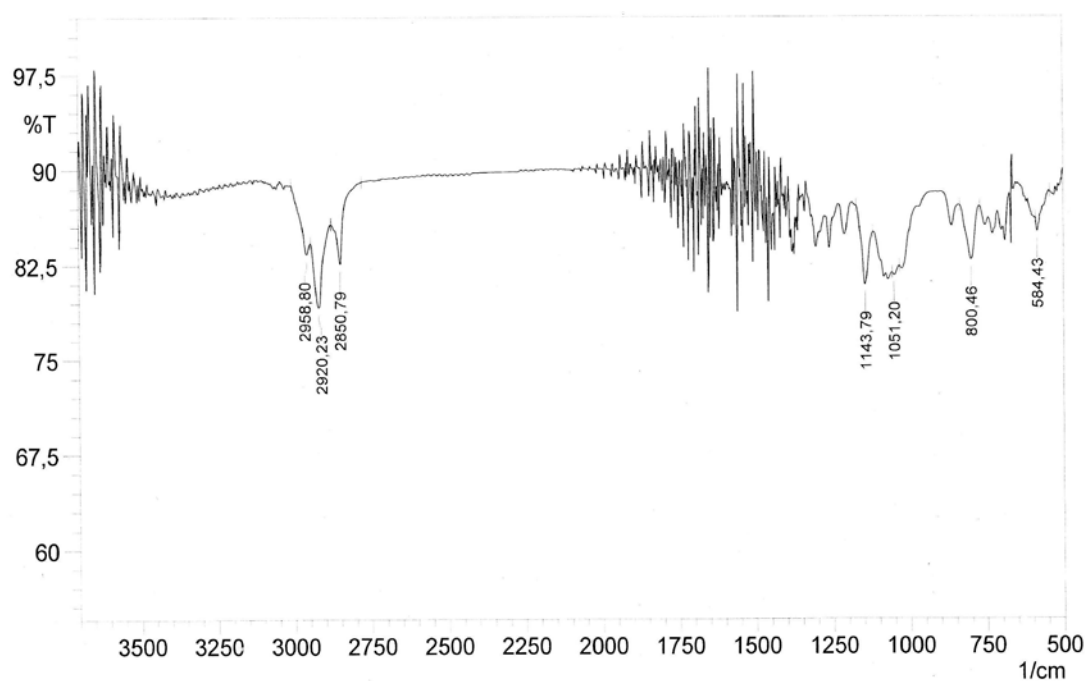


IR y HRMS del compuesto **108**:

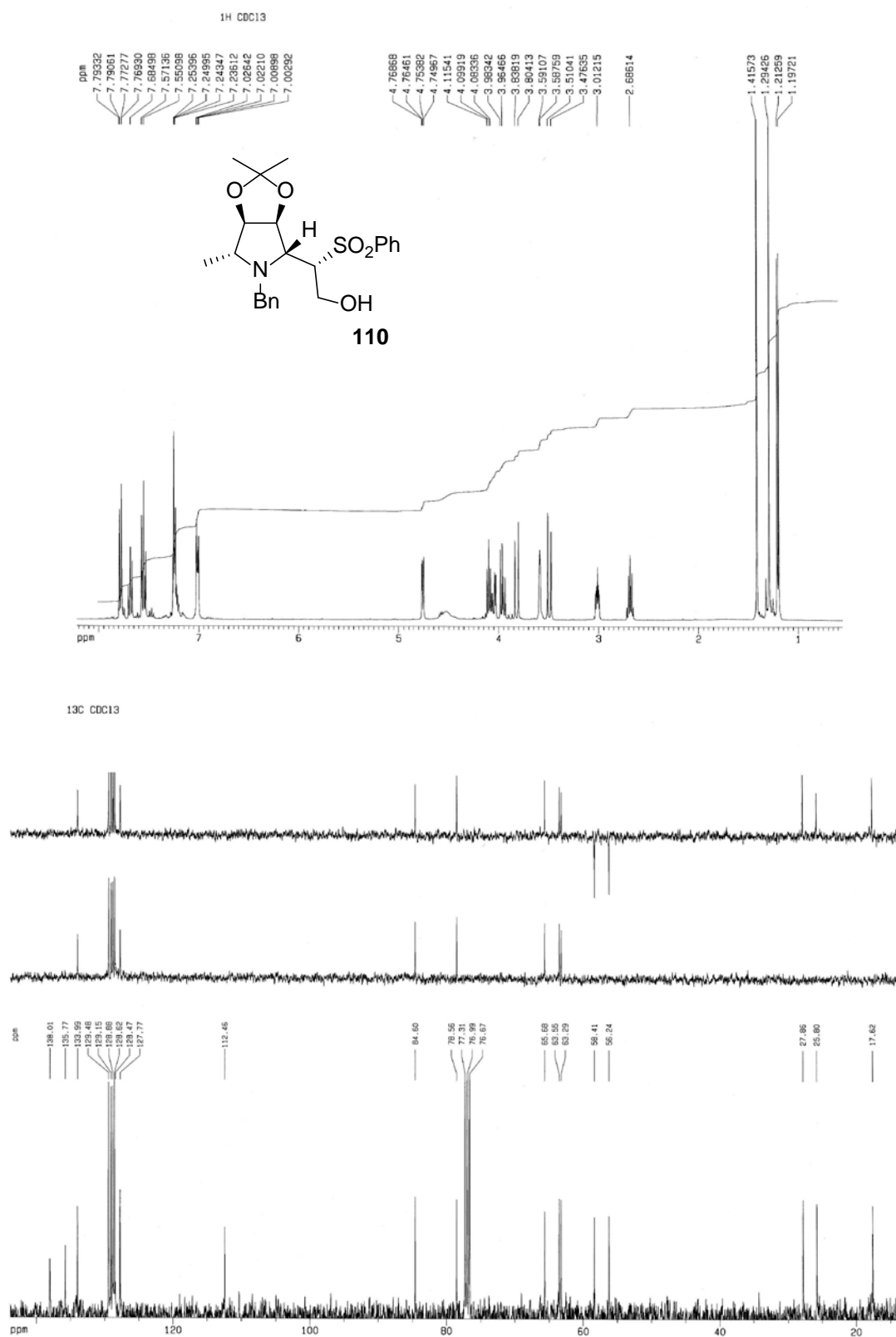
^1H y ^{13}C del compuesto **109**:

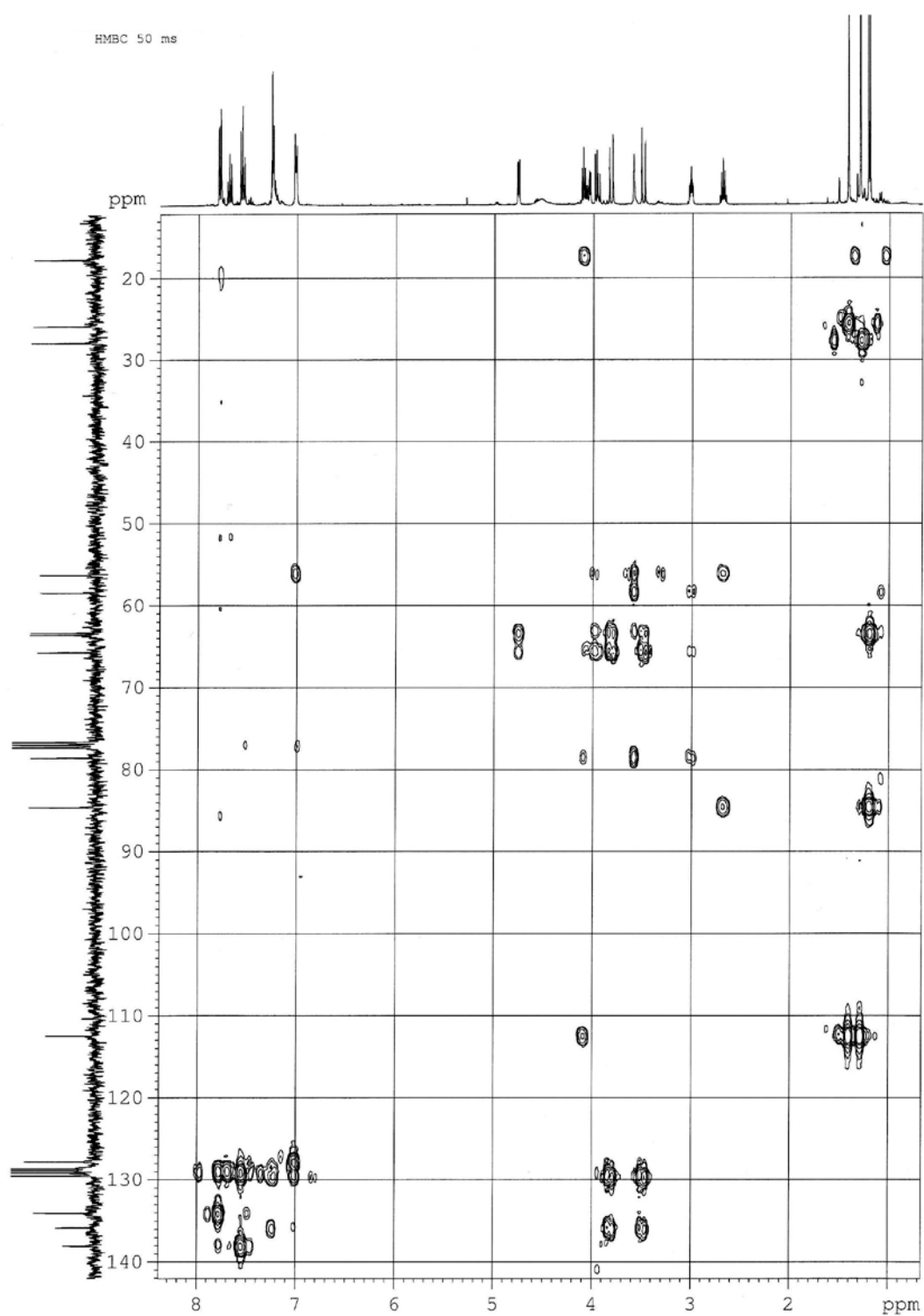


IR y HRMS del compuesto **109**:

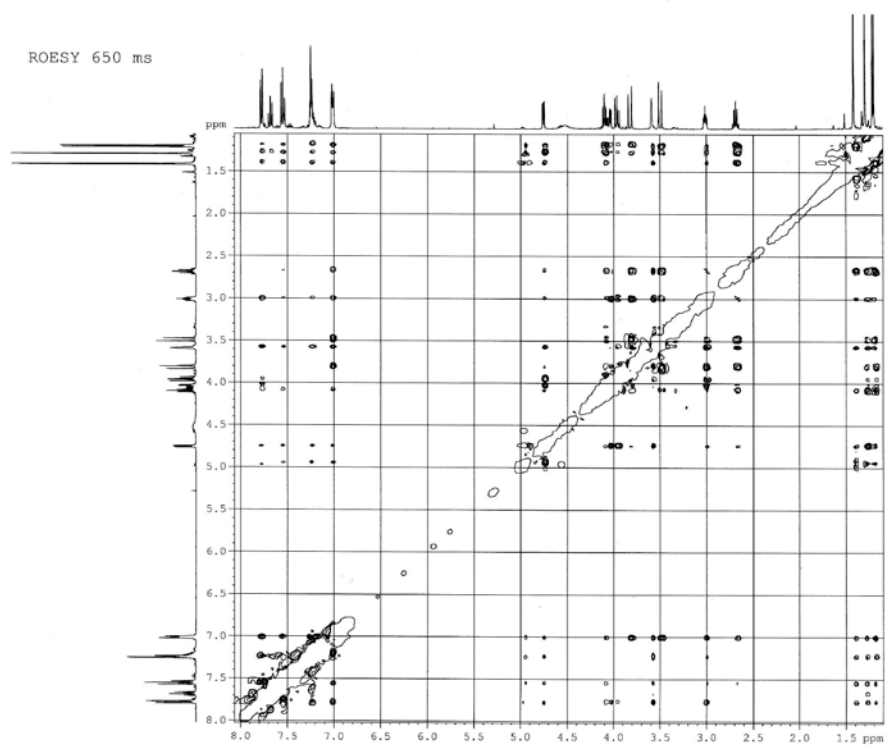
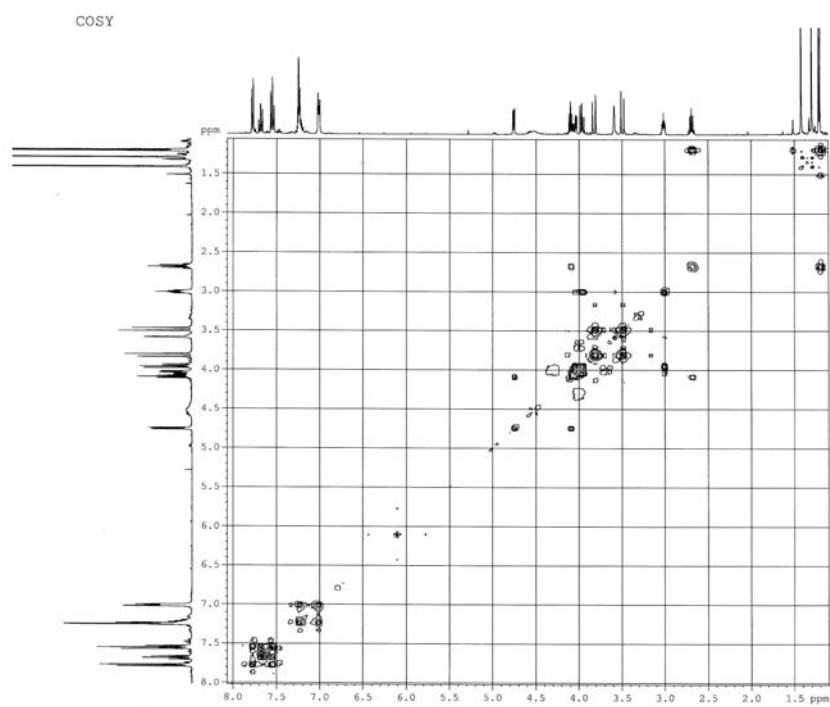


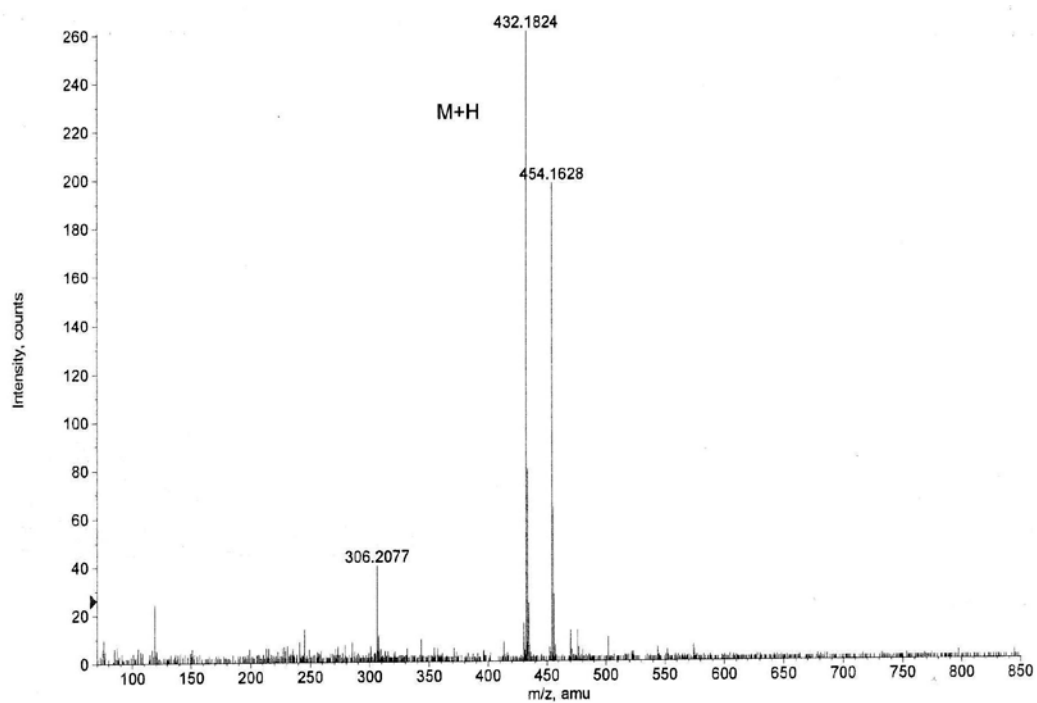
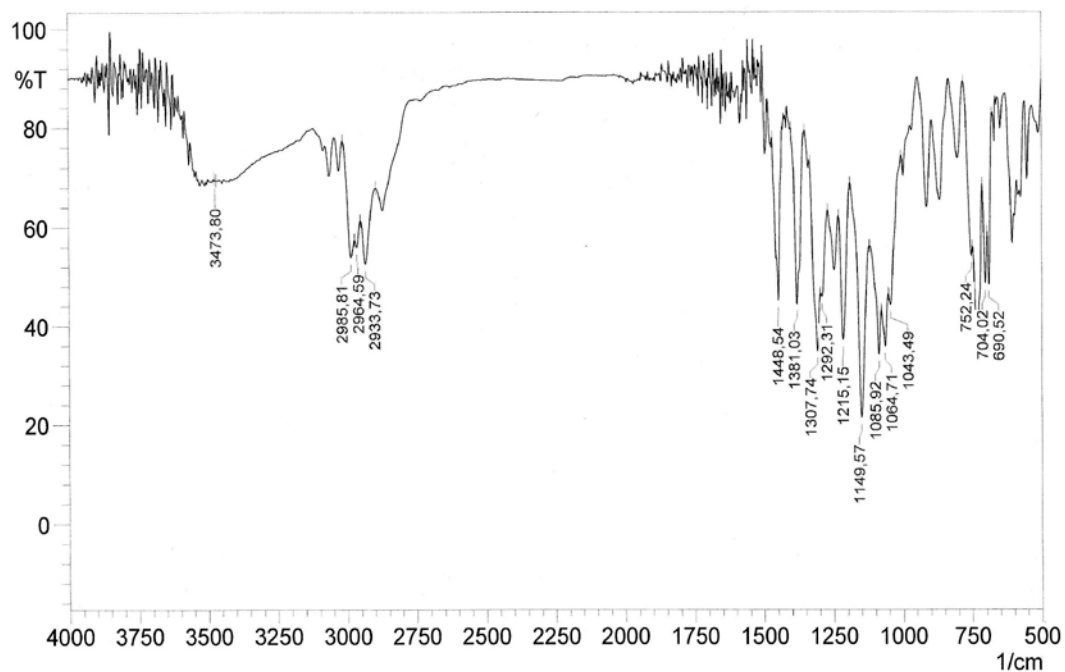
^1H y ^{13}C del compuesto **110**:



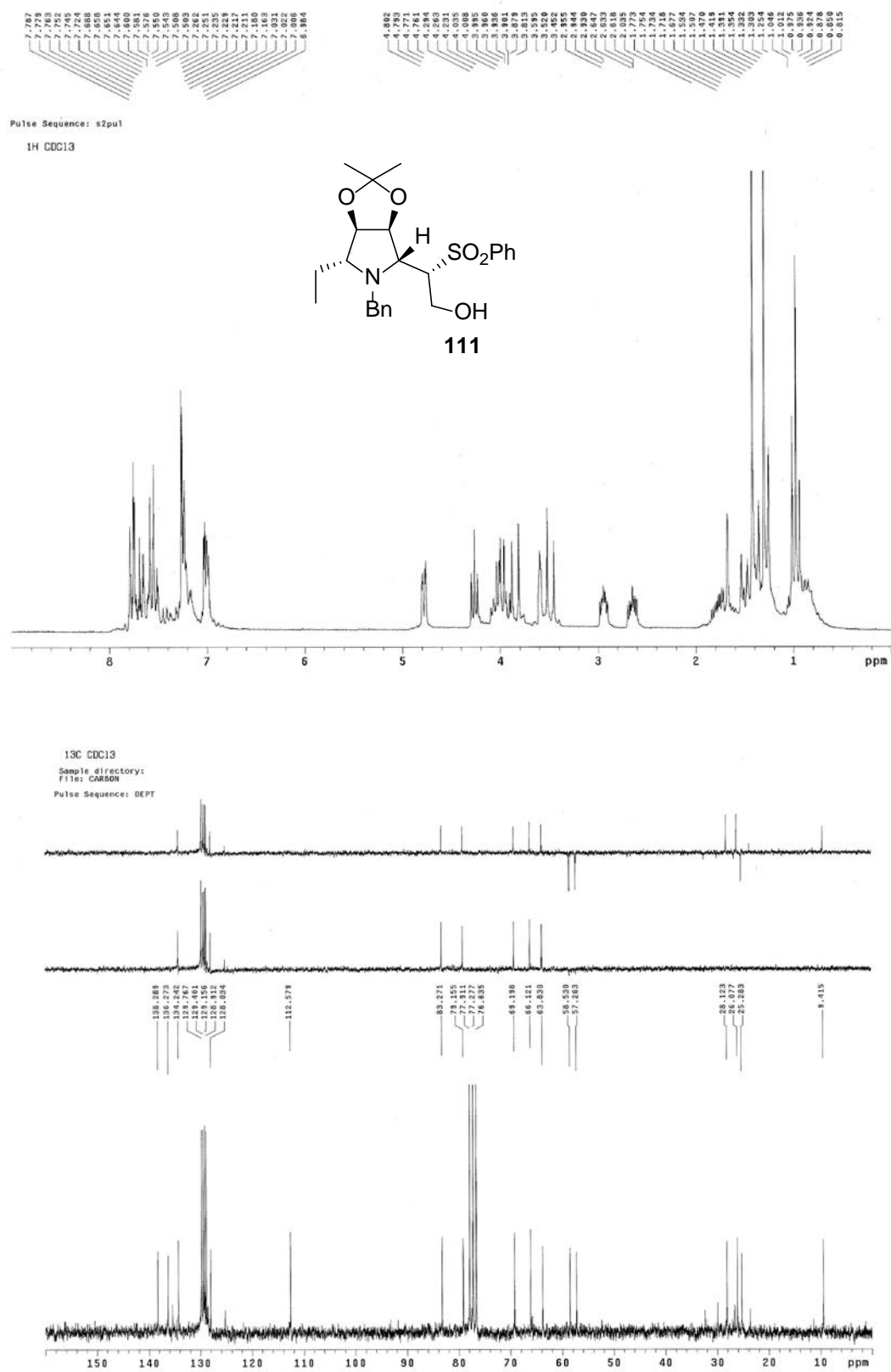
HMBC del compuesto **110**:

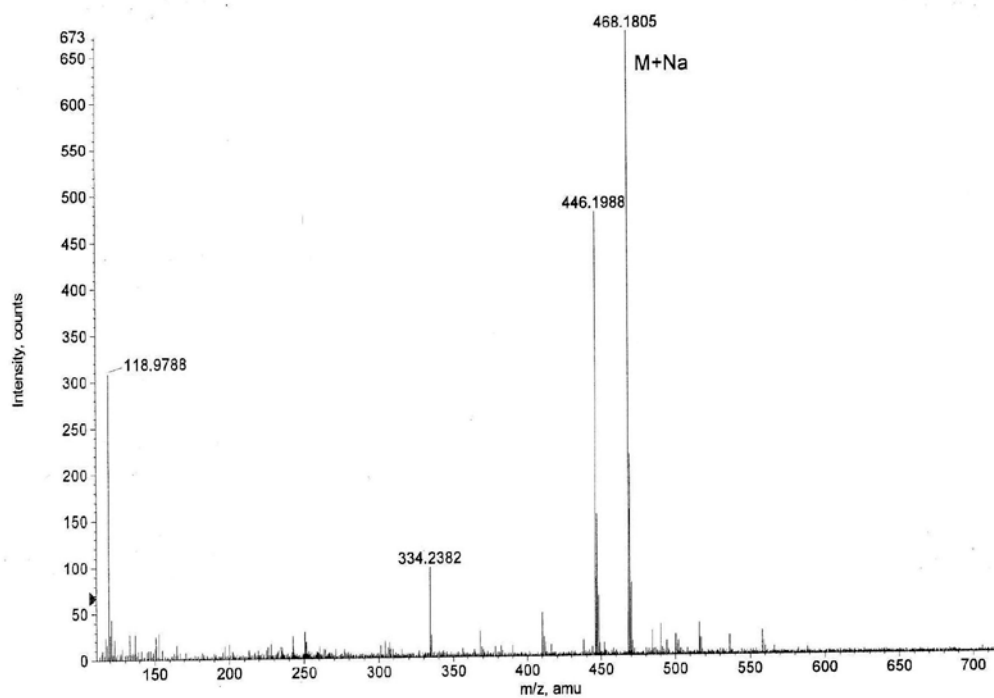
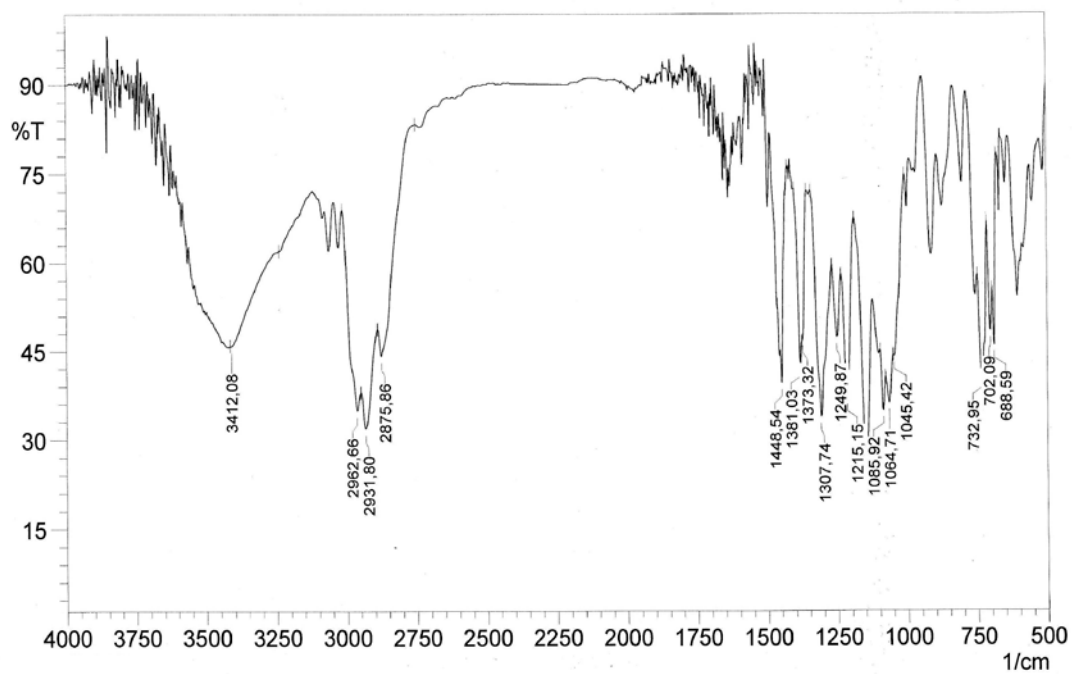
Cosy y Roesy del compuesto **110**:

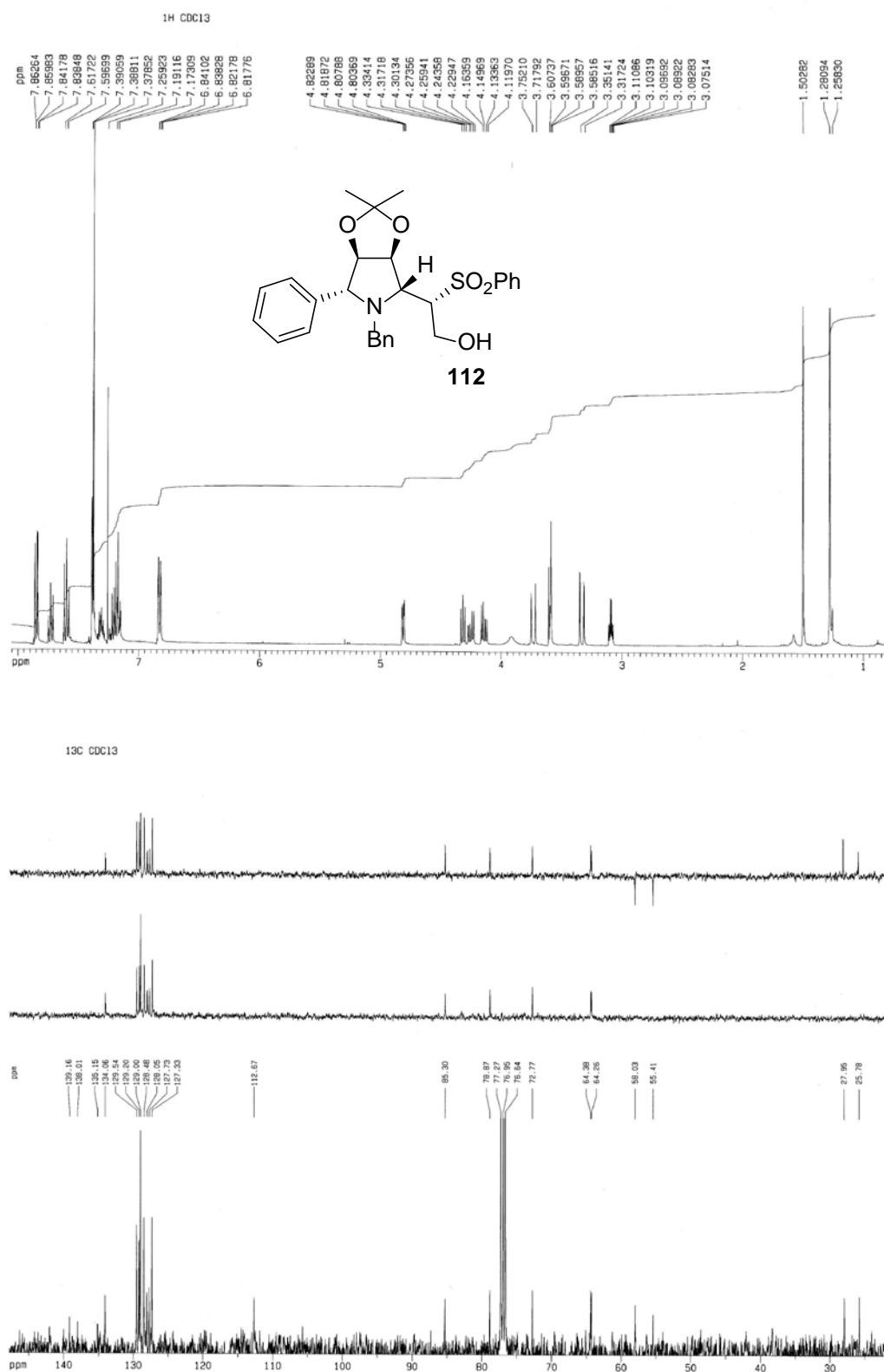


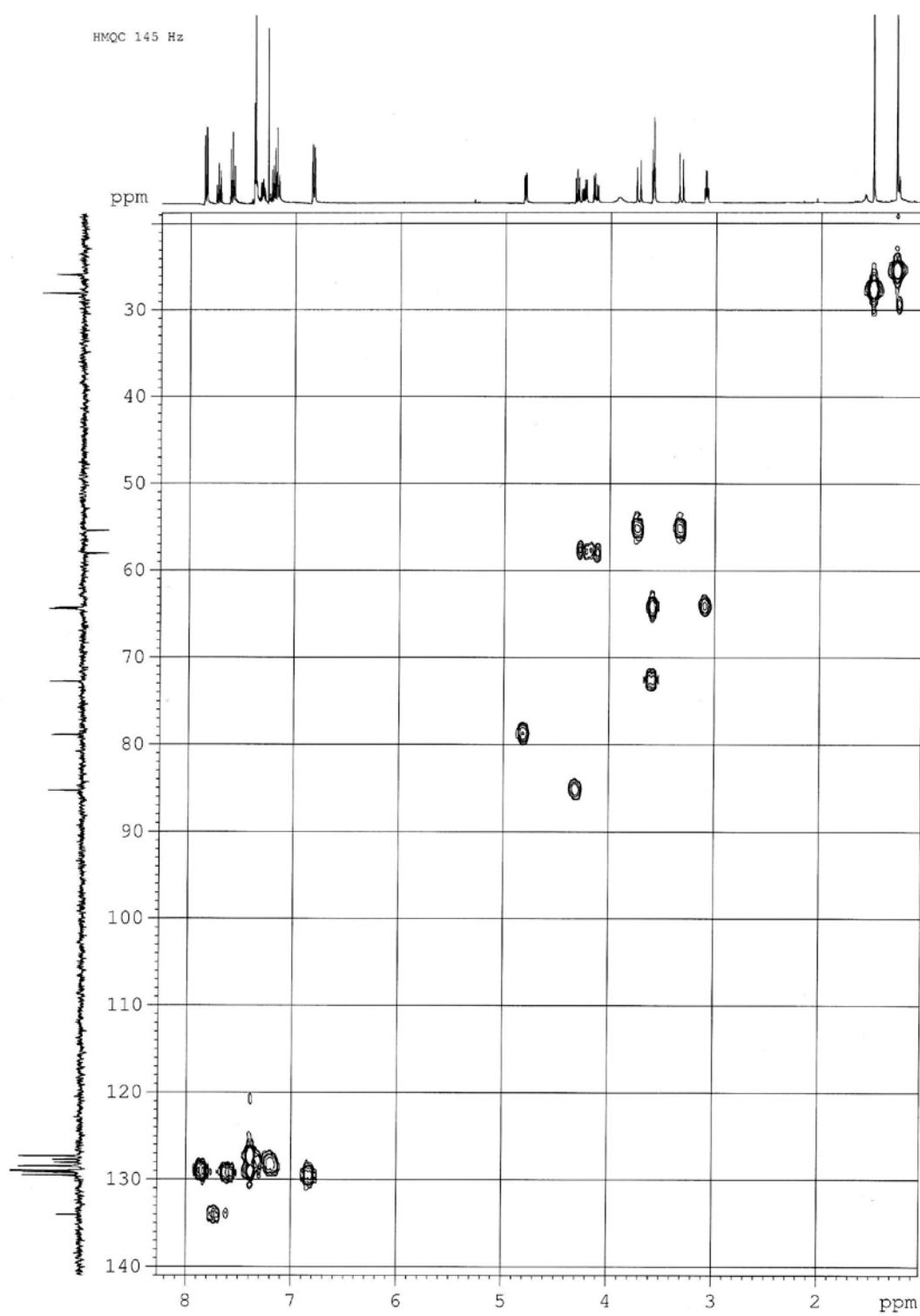
IR y HRMS del compuesto **110**:

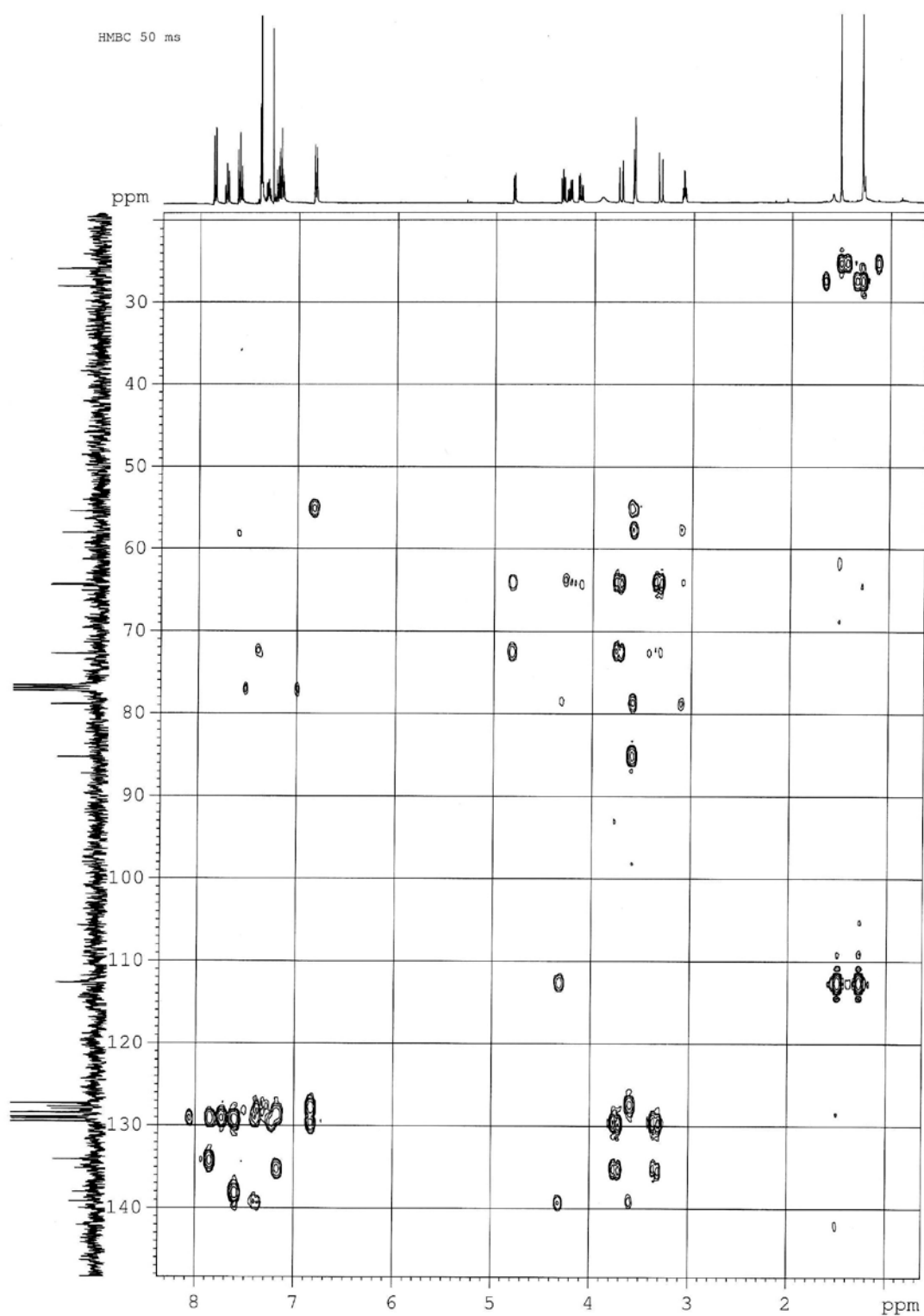
^1H y ^{13}C del compuesto **111**:



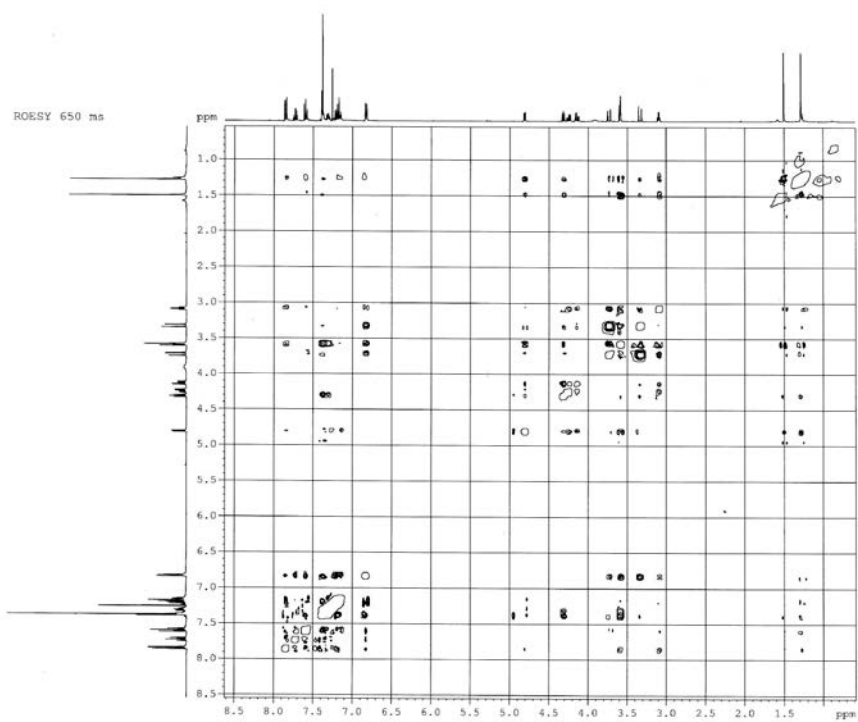
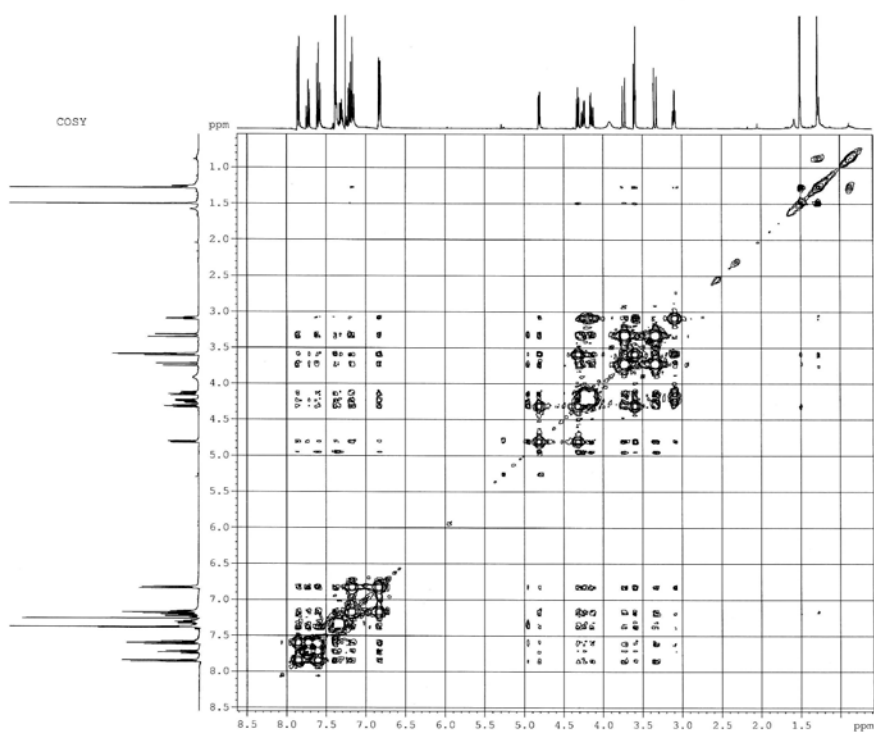
IR y HRMS del compuesto **111**:

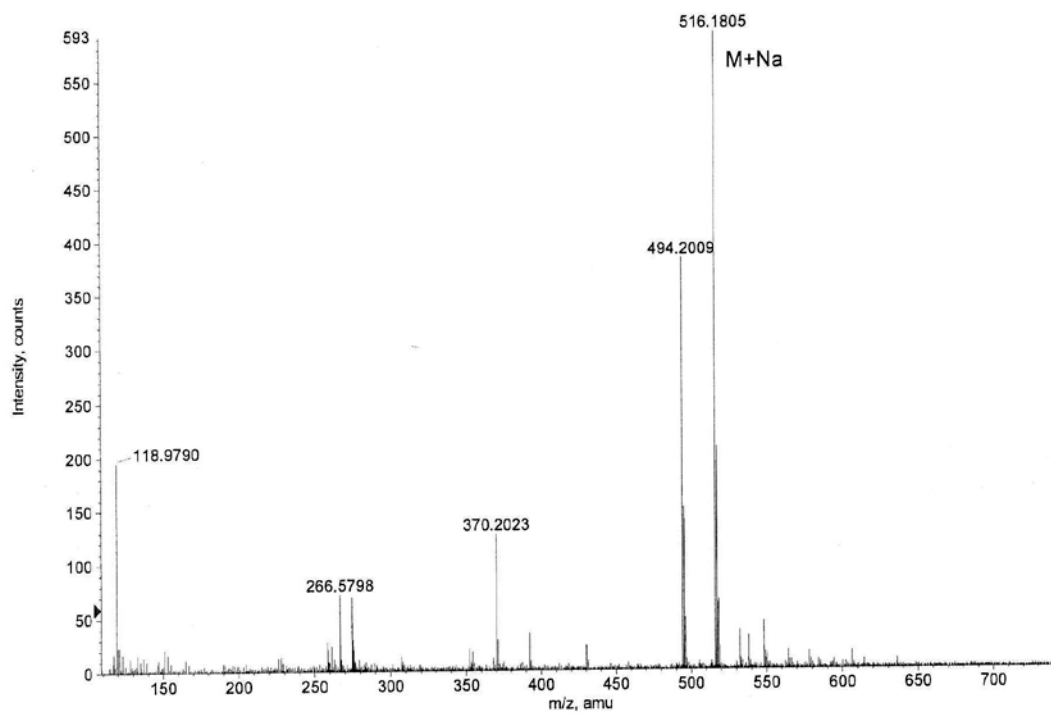
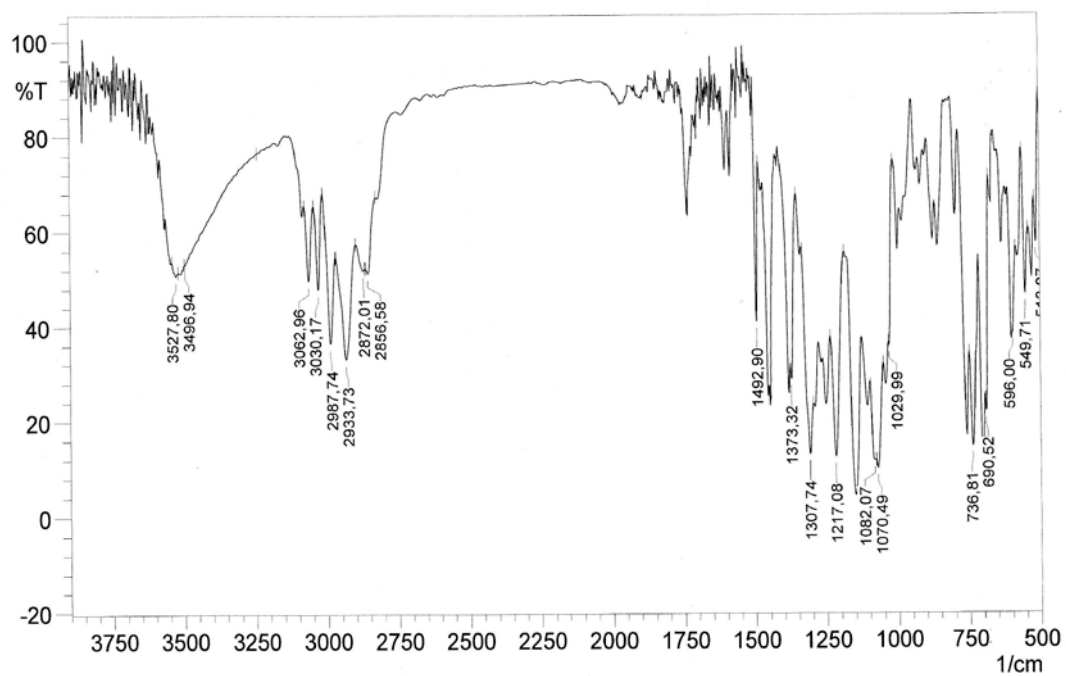
^1H y ^{13}C del compuesto **112**:

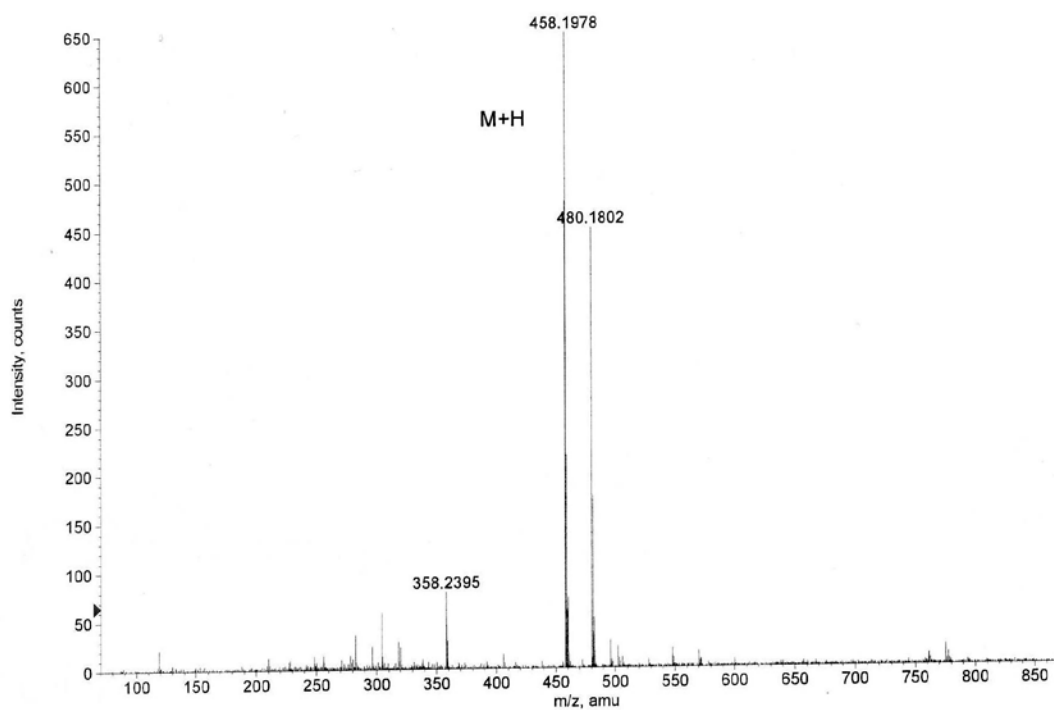
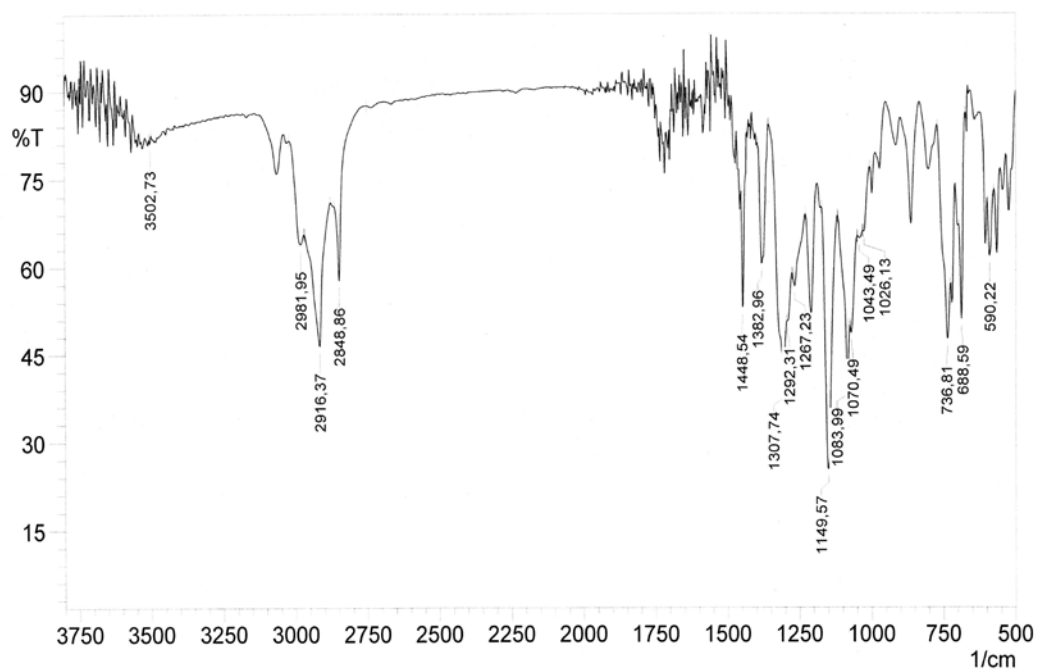
HMQC del compuesto **112**:

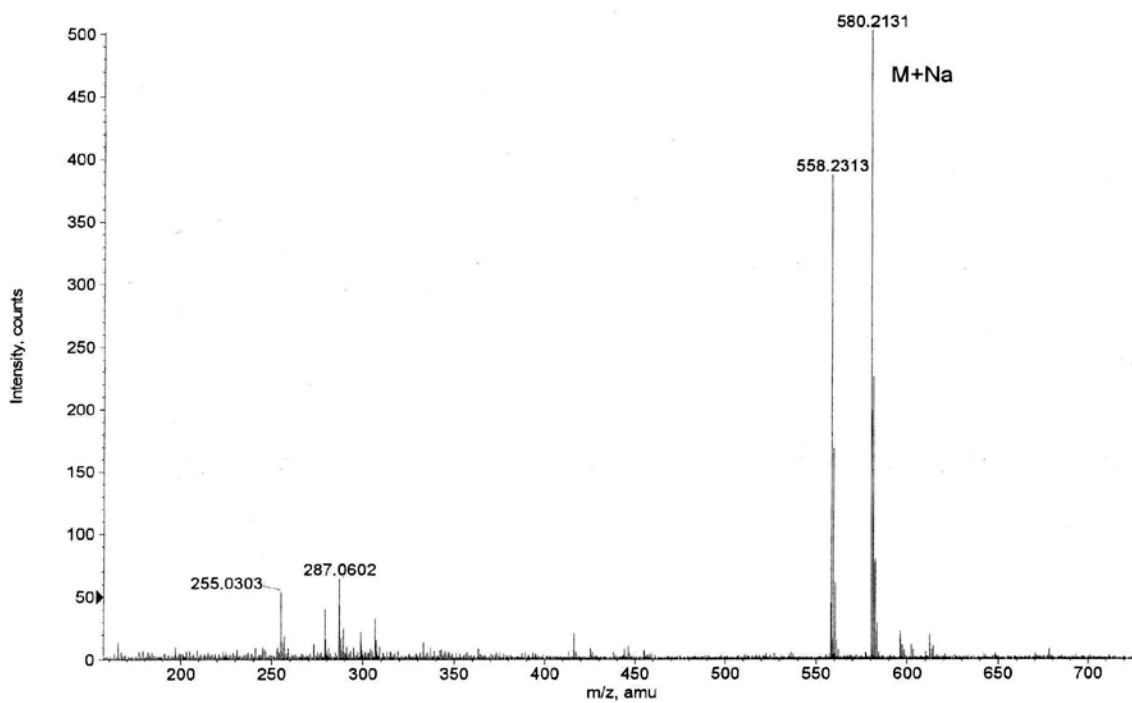
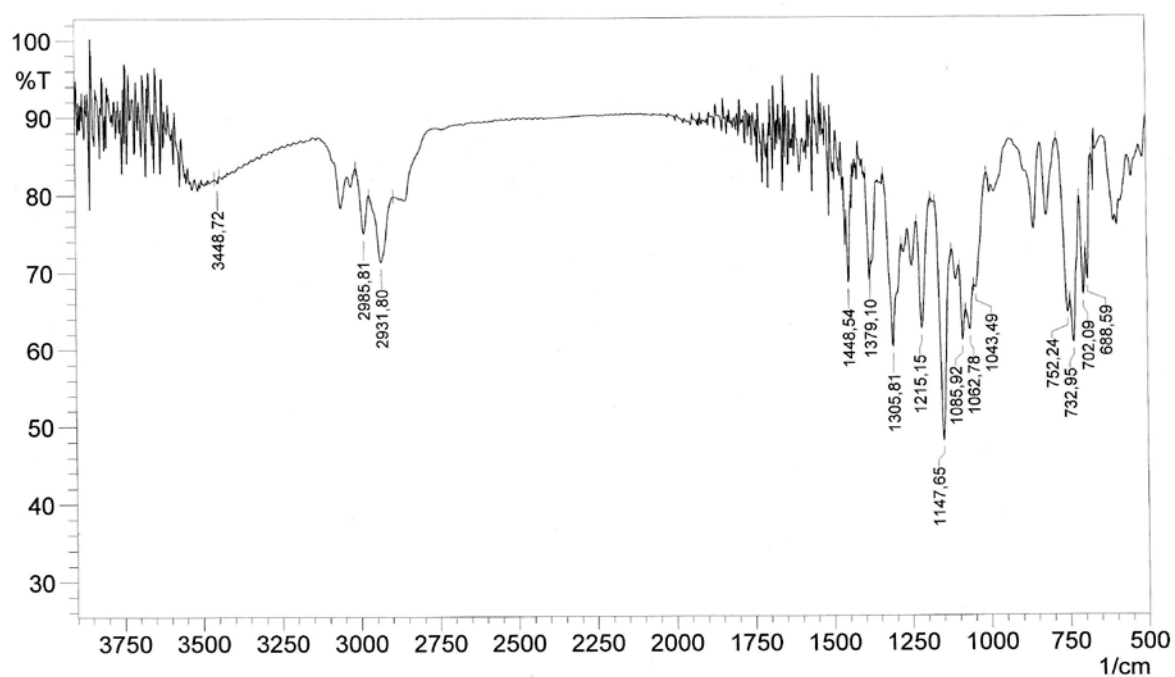
HMBC del compuesto **112**:

Cosy y Roesy del compuesto **112**:

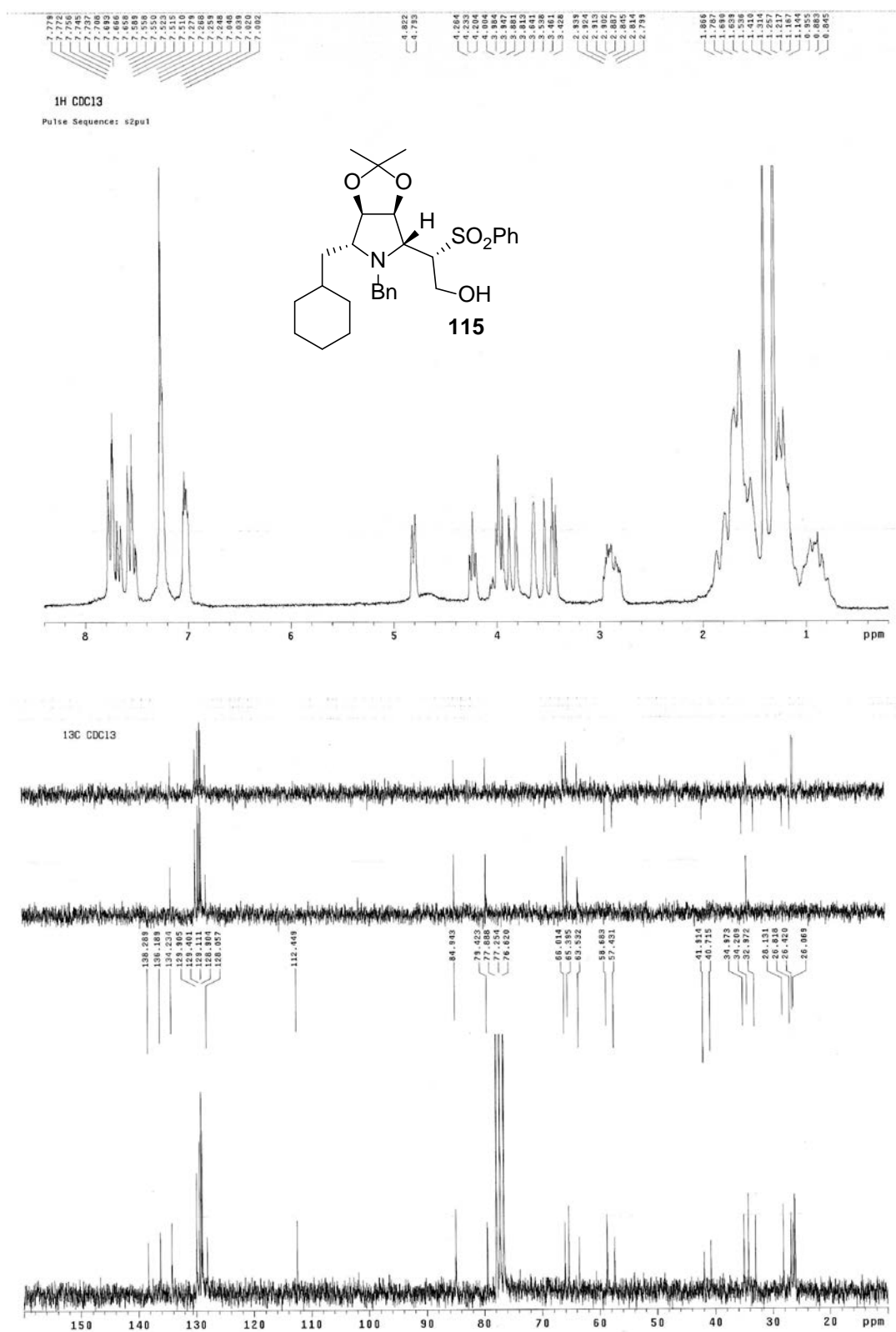


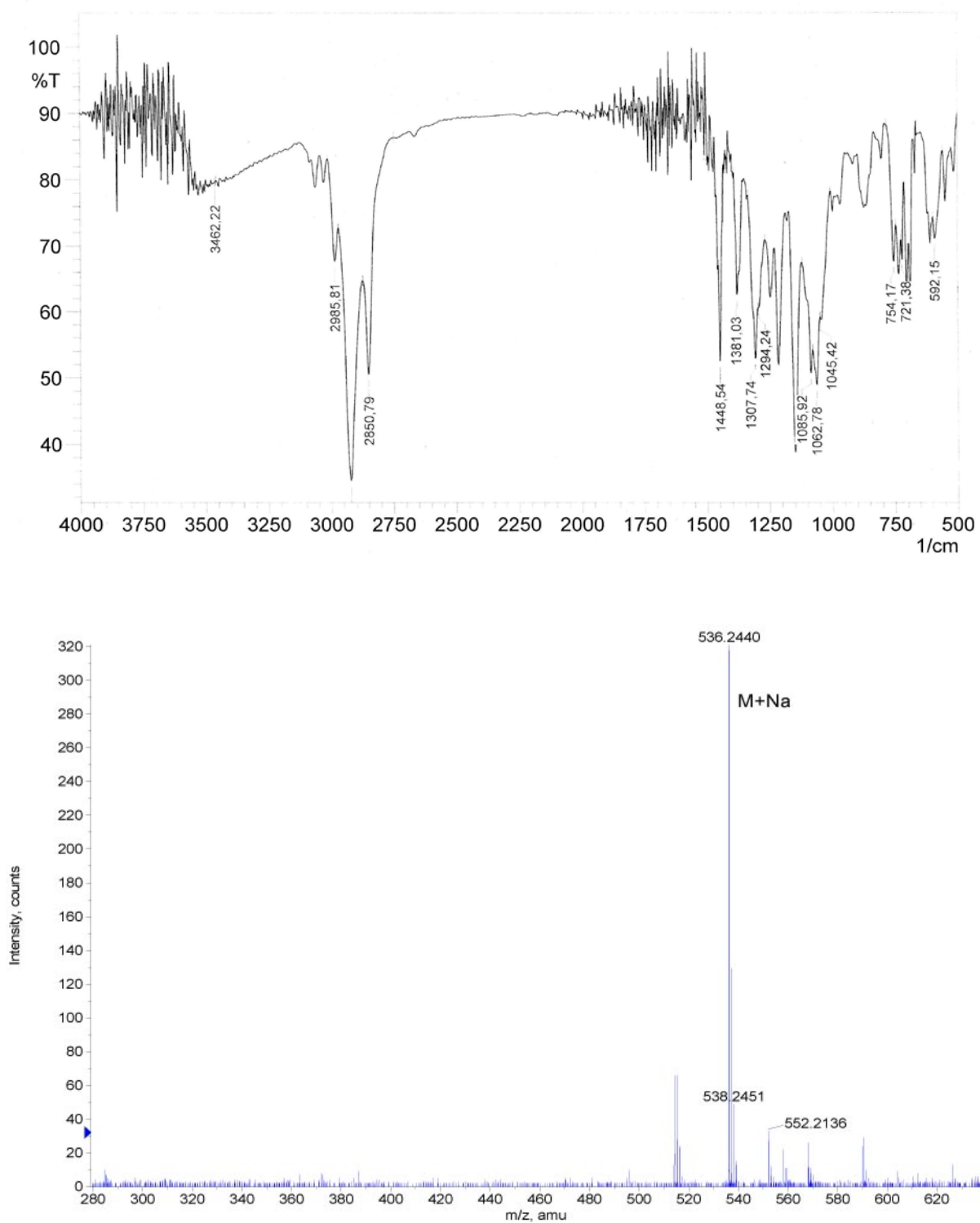
IR y HRMS del compuesto **112**:

IR y HRMS del compuesto **113**:

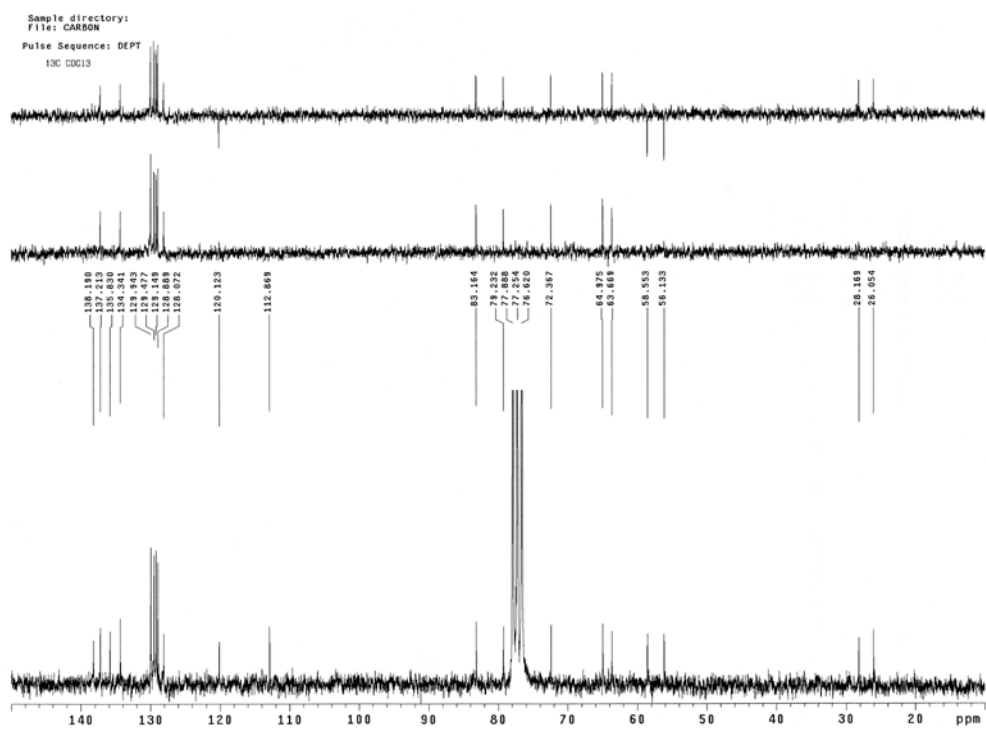
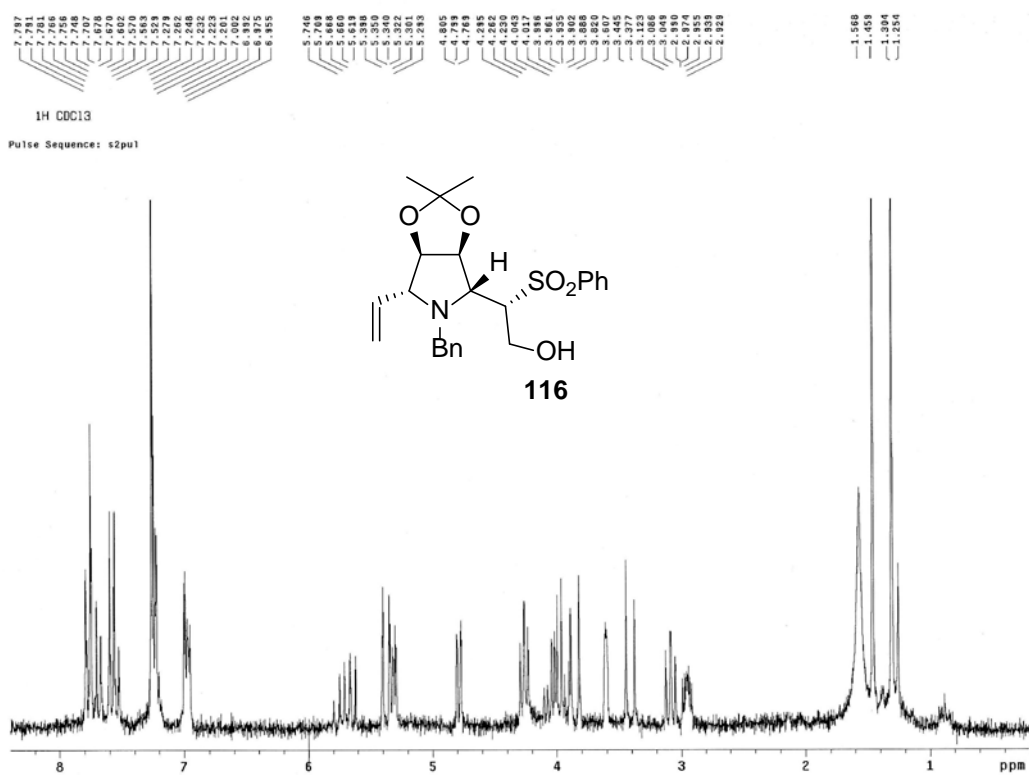
IR y HRMS del compuesto **114**:

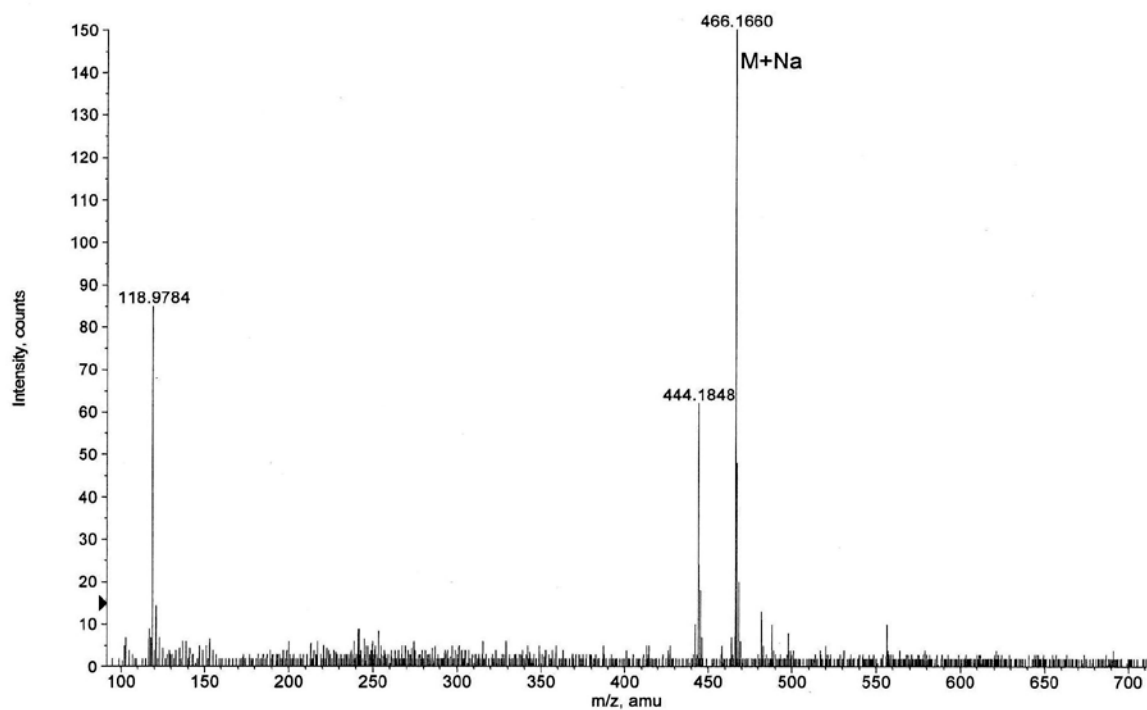
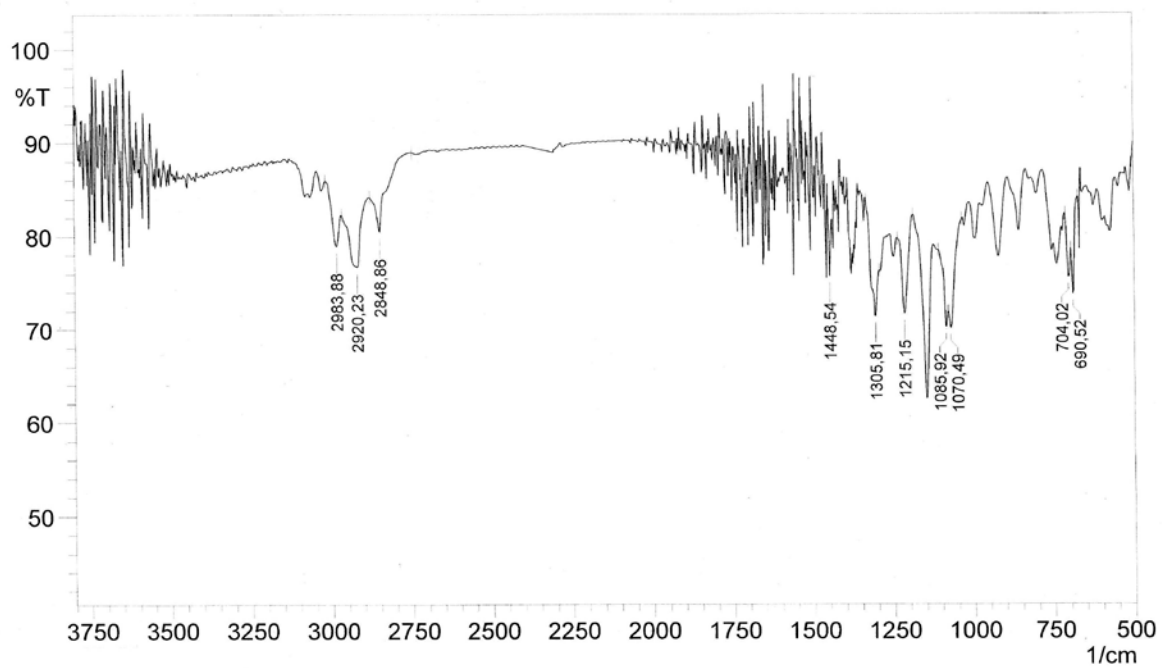
^1H y ^{13}C del compuesto **115**:



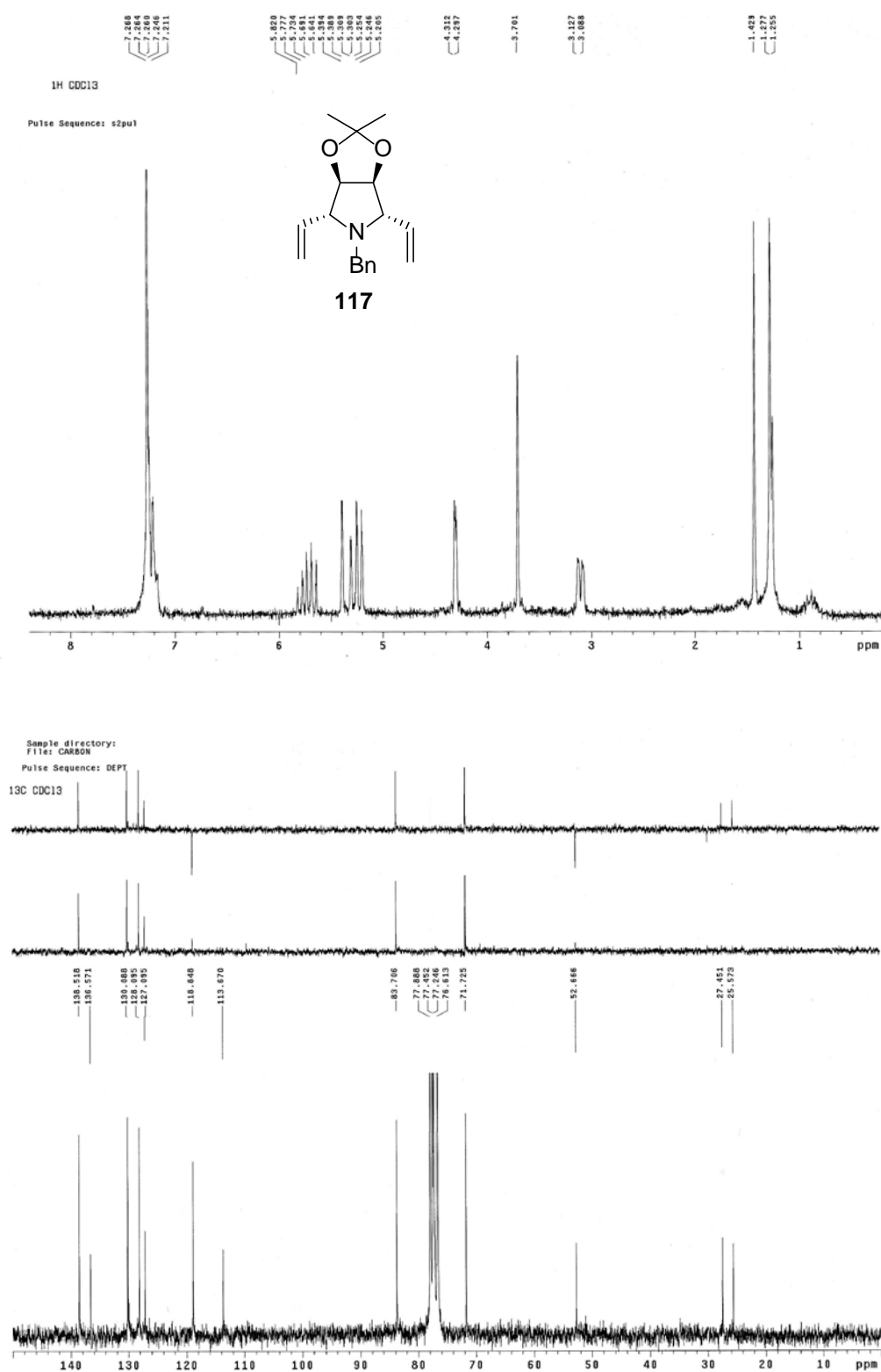
IR y HRMS del compuesto **115**:

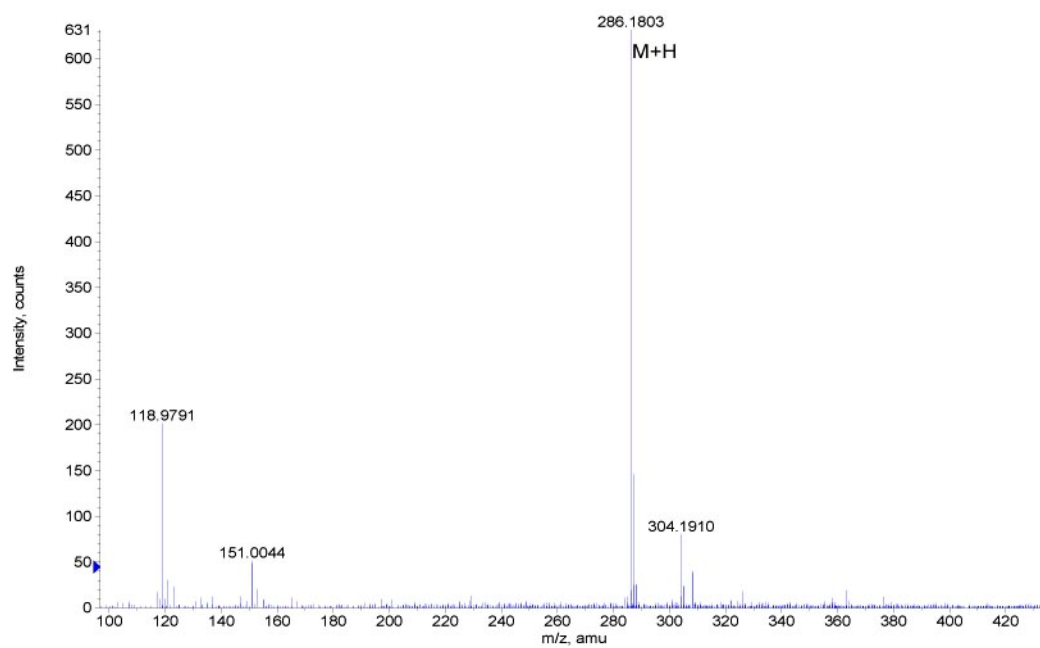
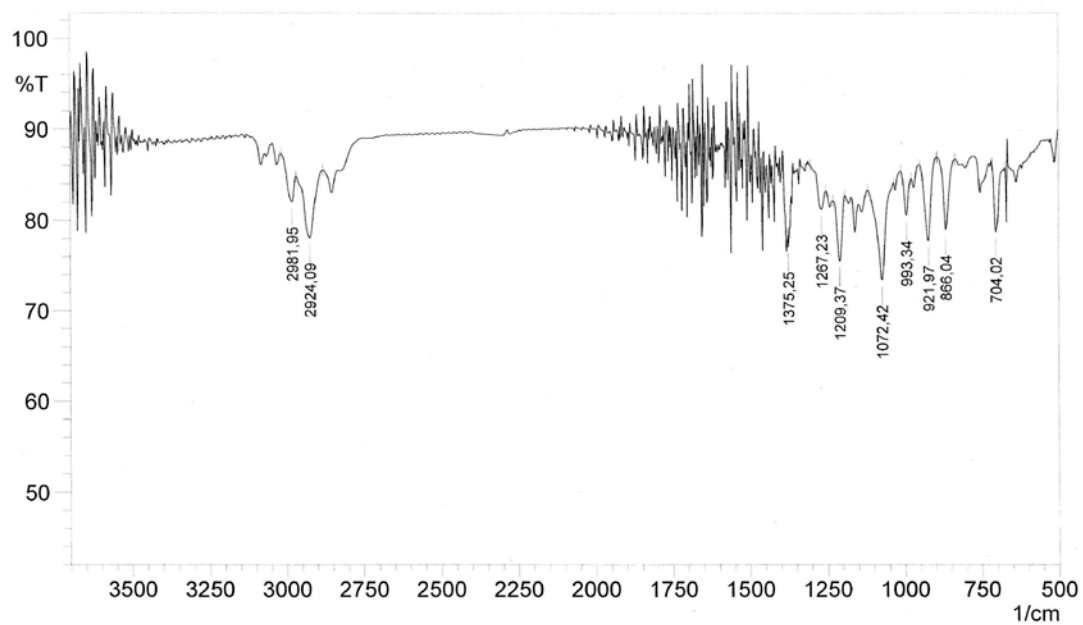
^1H y ^{13}C del compuesto **116**:



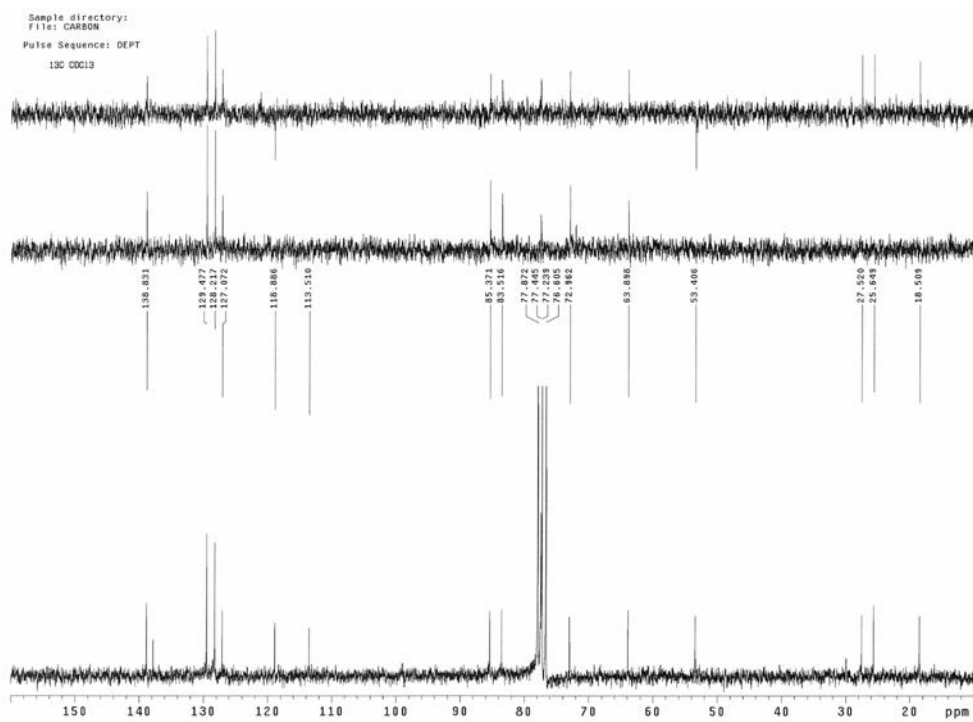
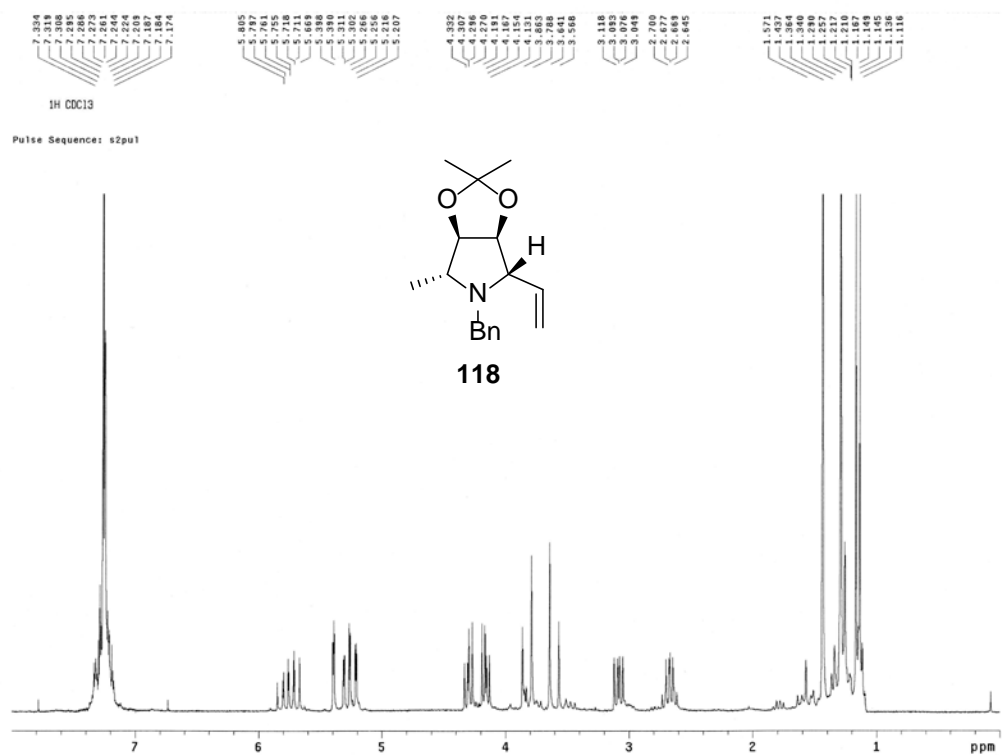
IR y HRMS del compuesto **116**:

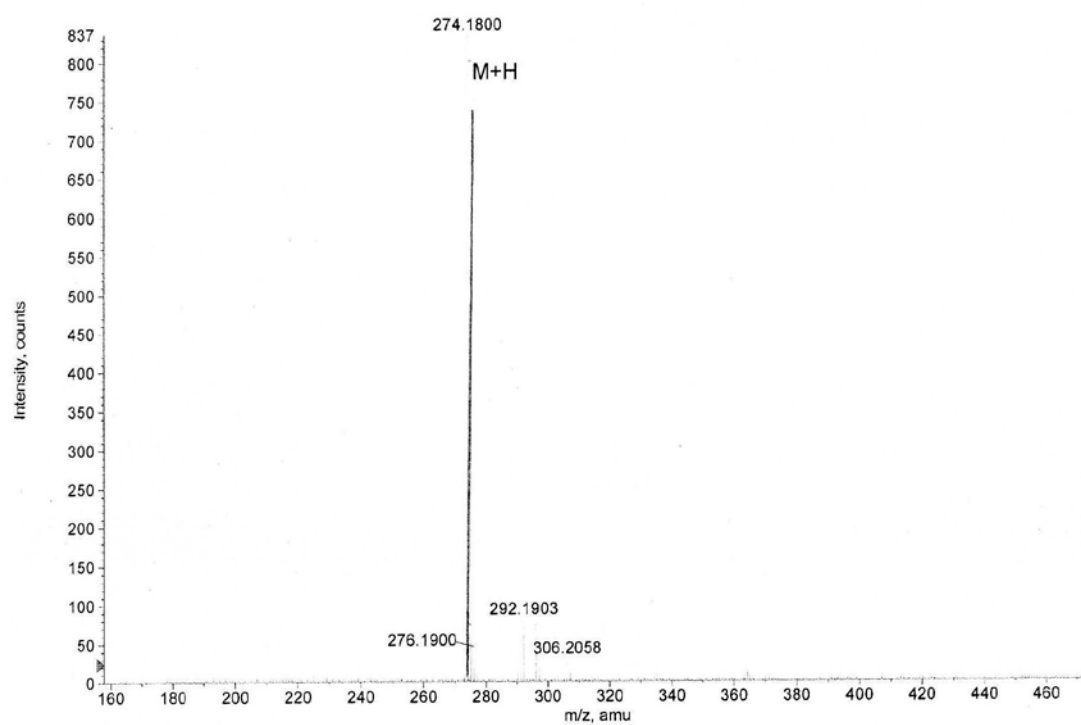
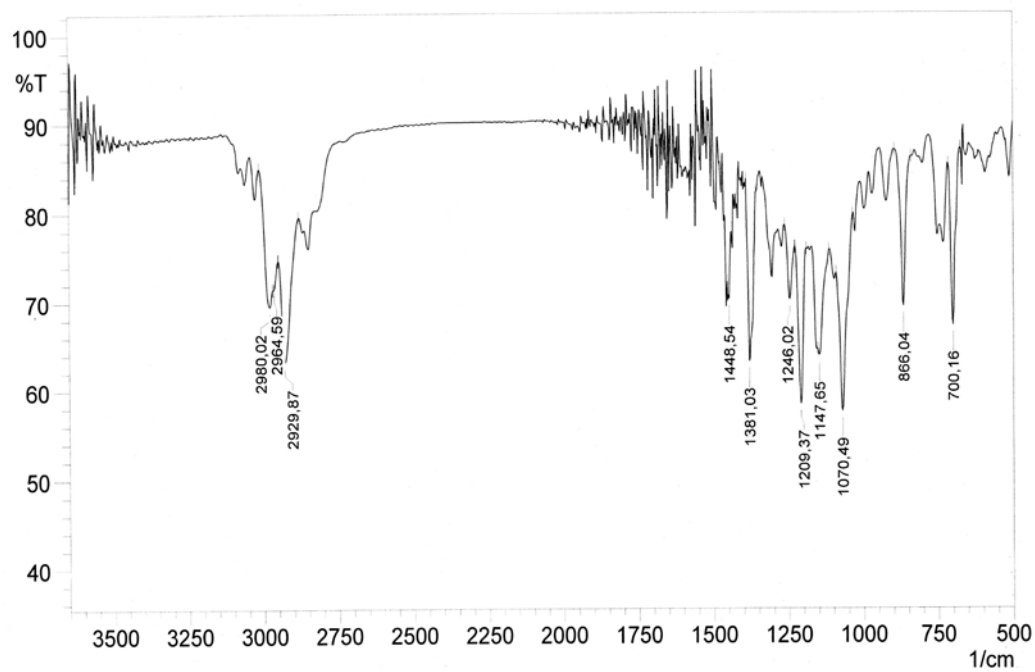
^1H y ^{13}C del compuesto **117**:



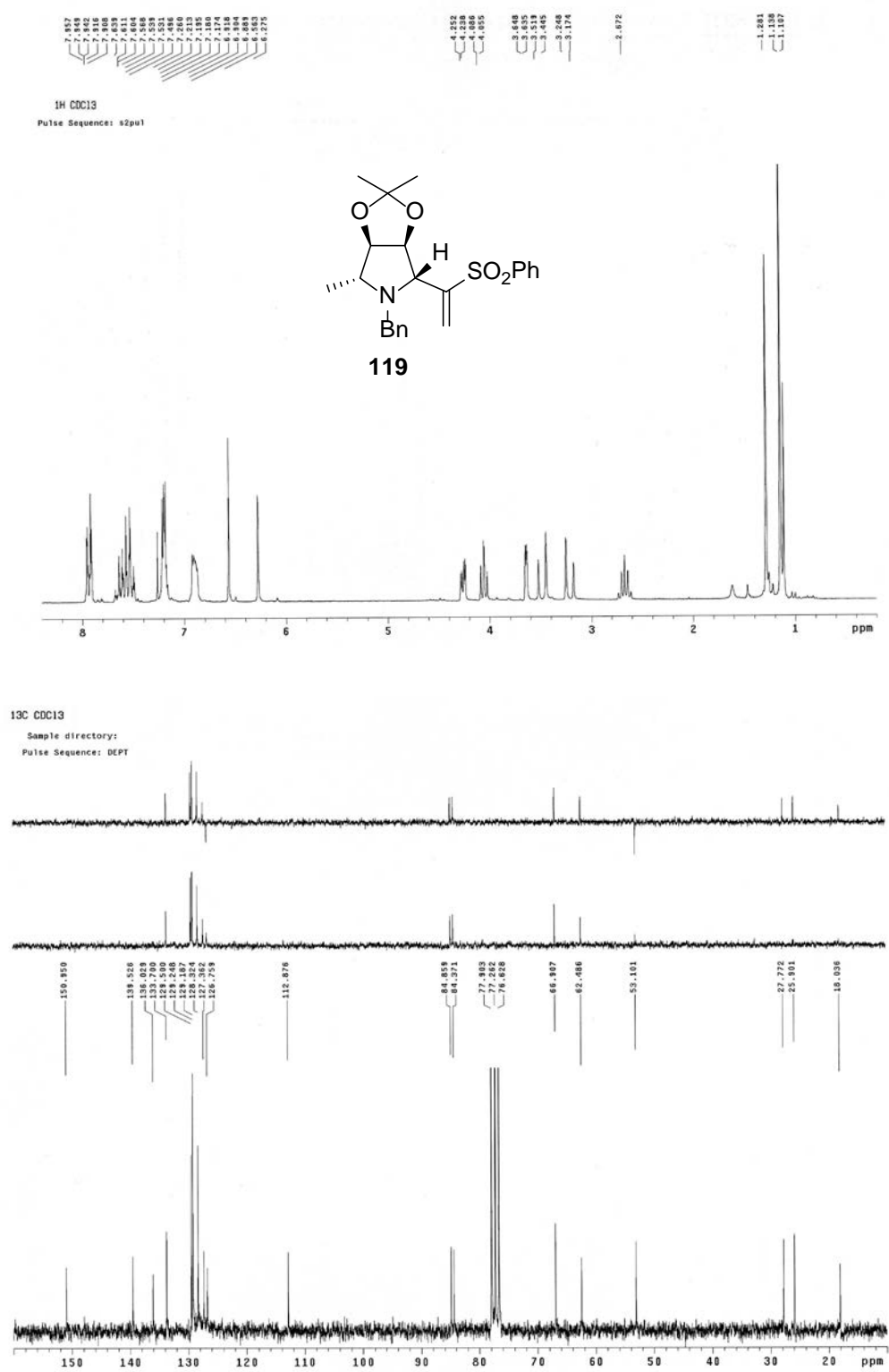
IR y HRMS del compuesto **117**:

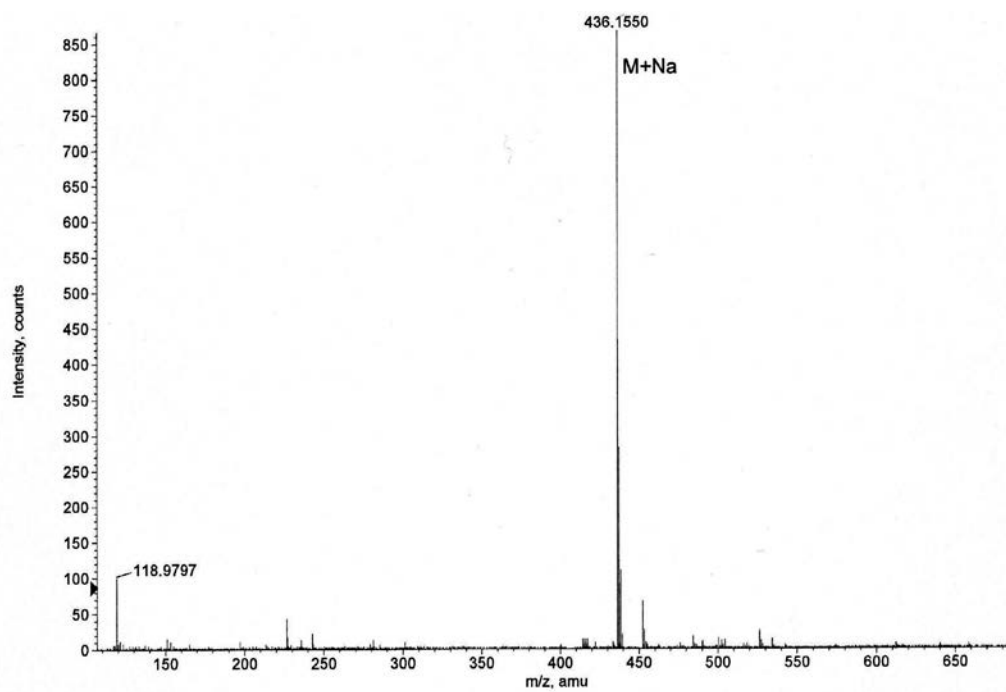
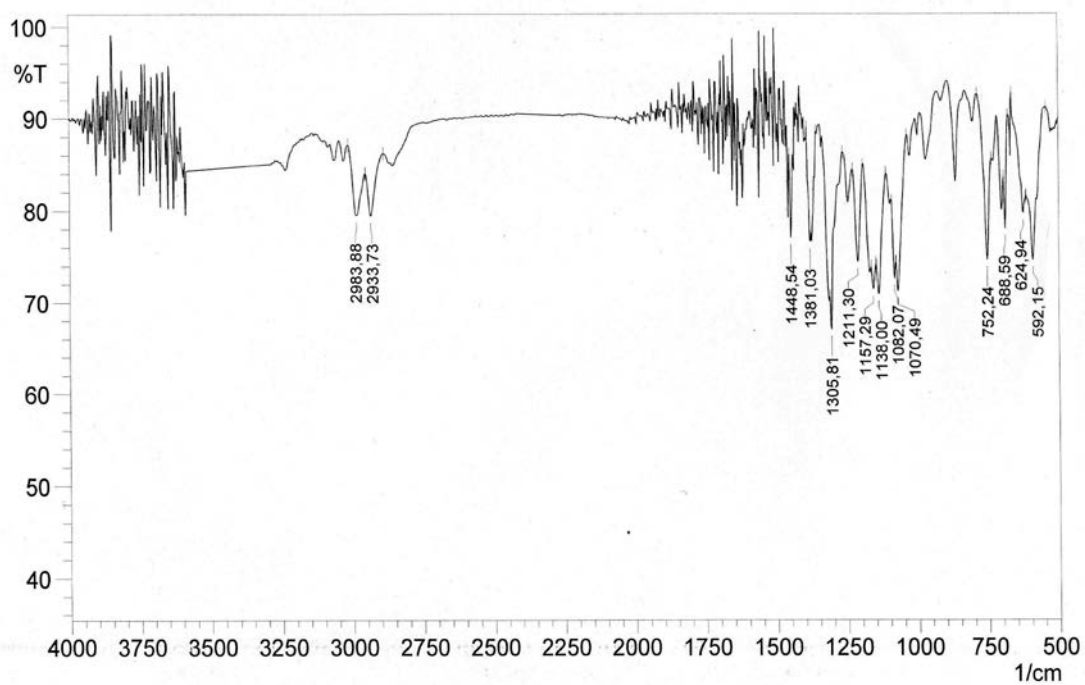
^1H y ^{13}C del compuesto **118**:



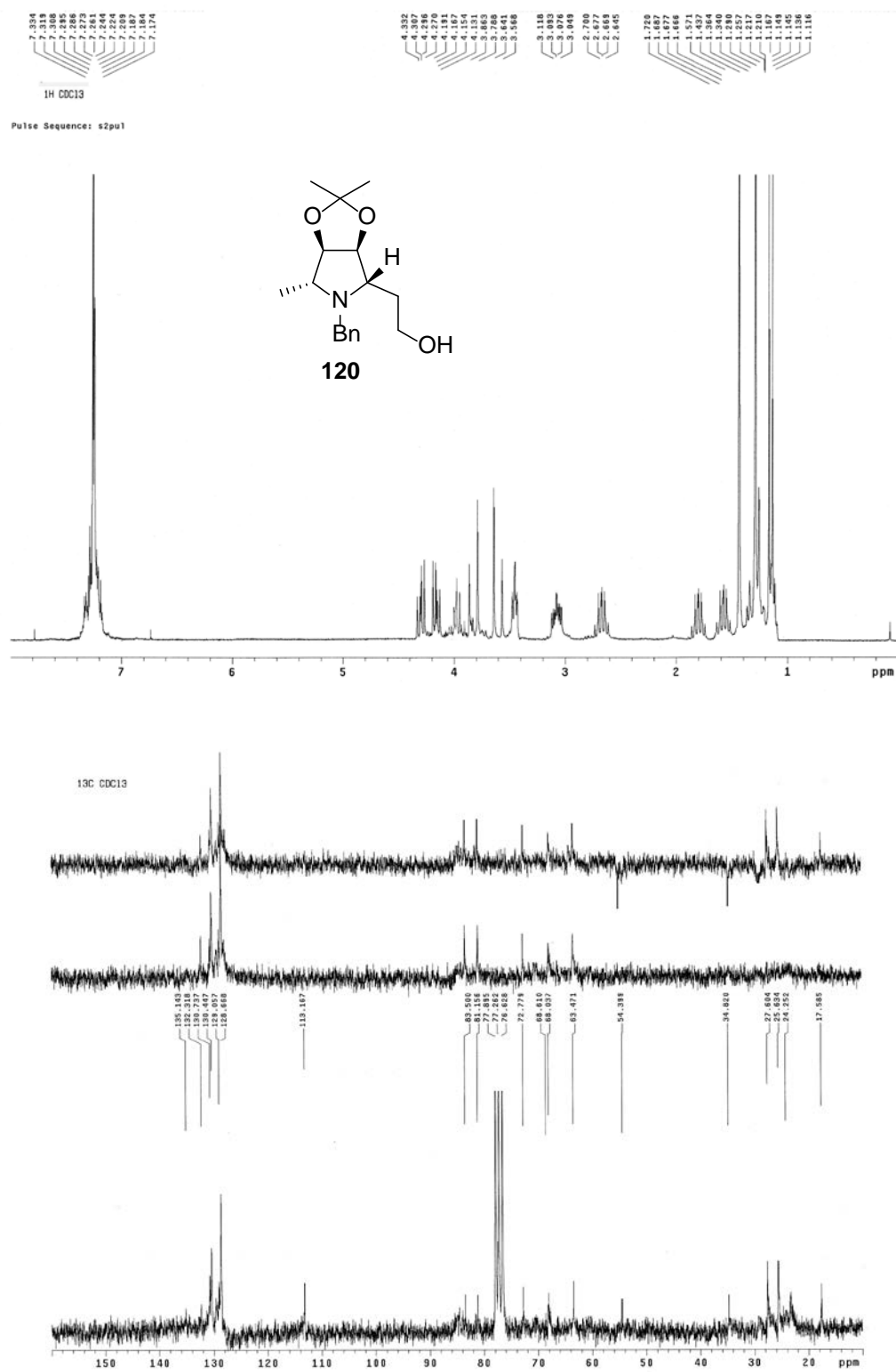
IR y HRMS del compuesto **118**:

^1H y ^{13}C del compuesto **119**:



IR y HRMS del compuesto **119**:

^1H y ^{13}C del compuesto **120**:



IR y HRMS del compuesto **120**: