

UNIVERSIDAD DE OVIEDO

DEPARTAMENTO DE QUÍMICA ORGÁNICA E INORGÁNICA
MÁSTER UNIVERSITARIO EN QUÍMICA Y DESARROLLO
SOSTENIBLE

**Síntesis de heterociclos espiránicos mediante la
reacción de cicloisomerización de 1-bromoalquinos
catalizada por oro: aplicaciones en bioisosterismo**

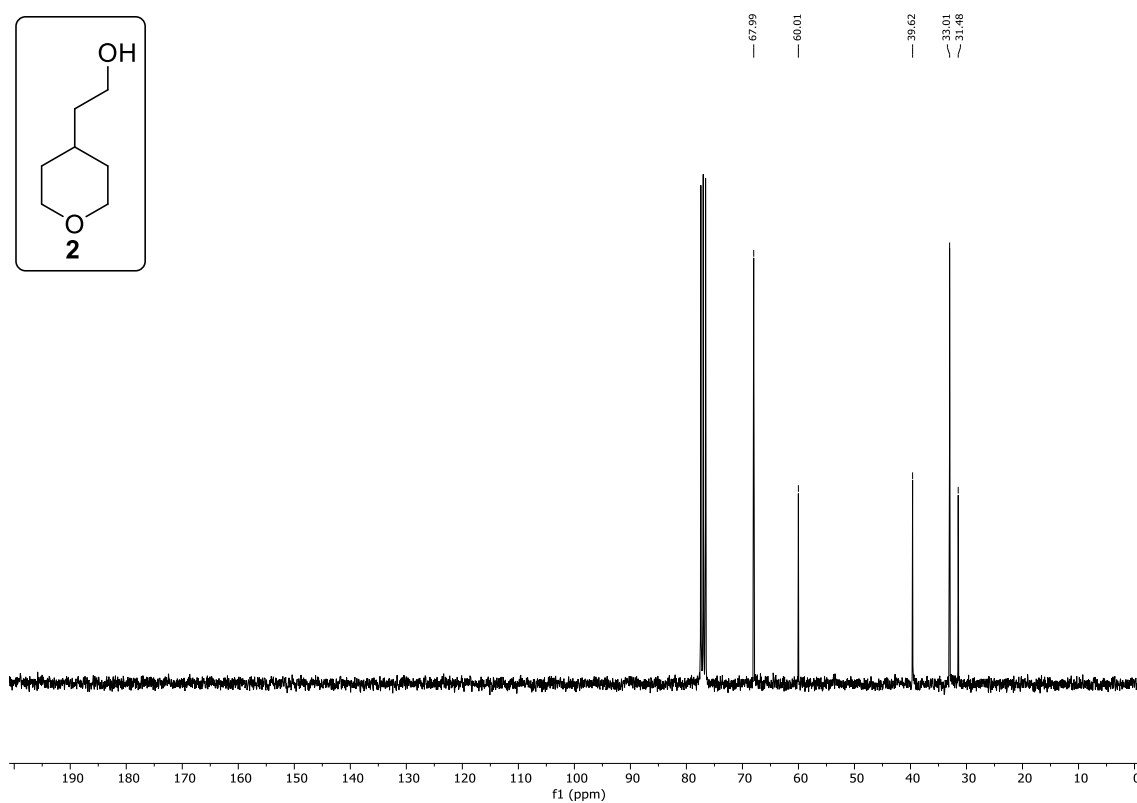
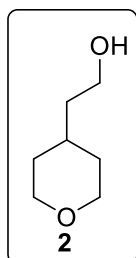
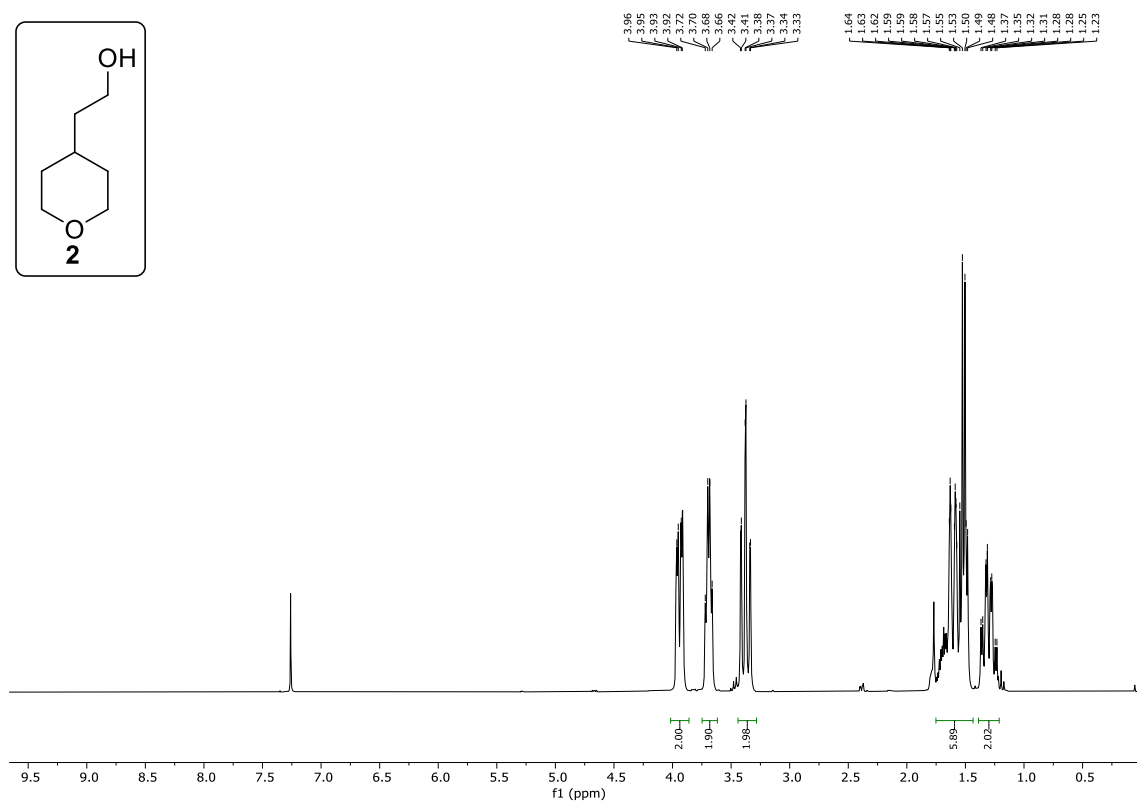
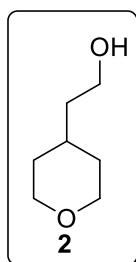
TRABAJO FIN DE MÁSTER

Manuel Ángel Martínez Burgueño

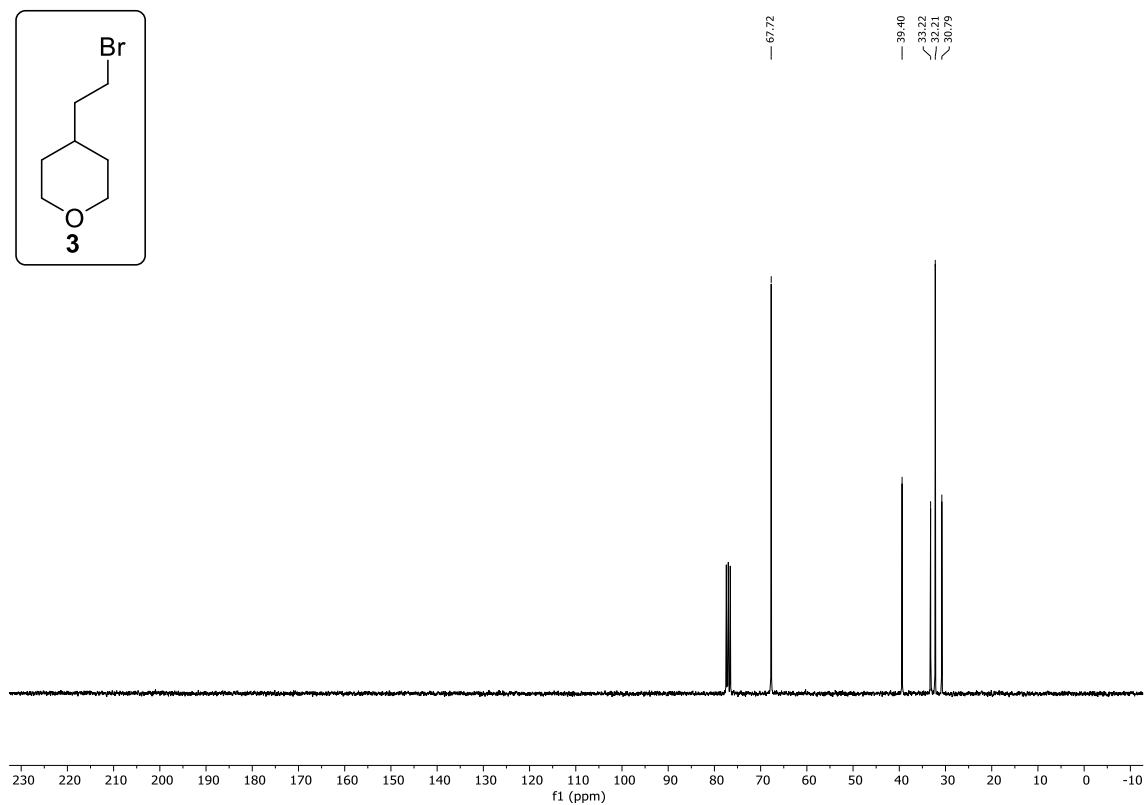
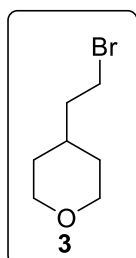
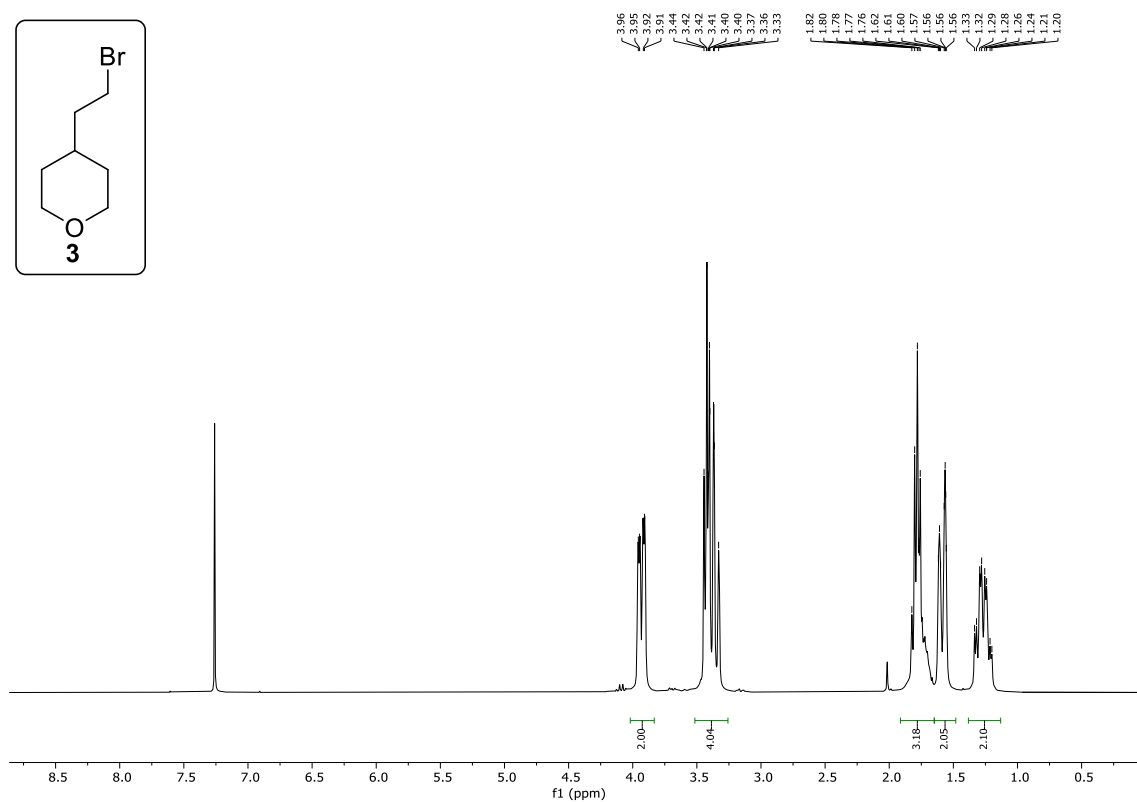
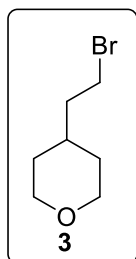
Julio 2024

7. Anexos

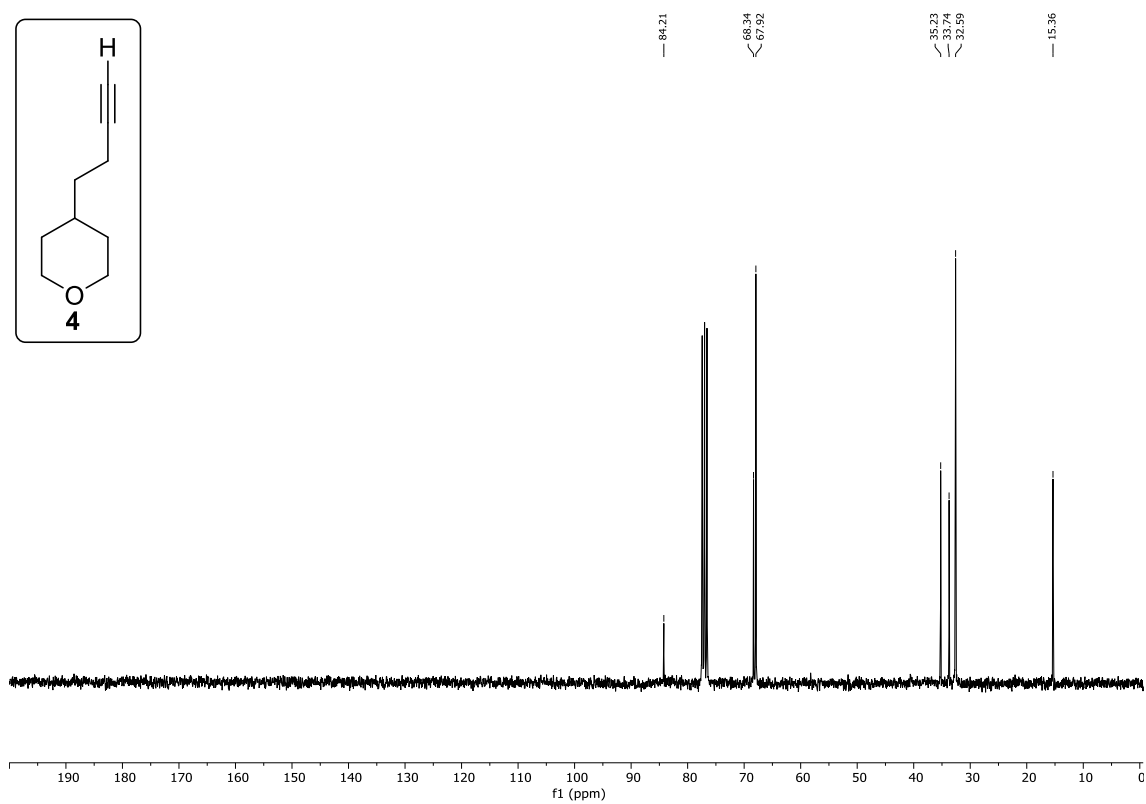
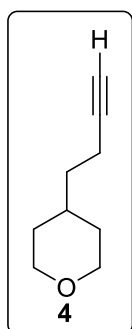
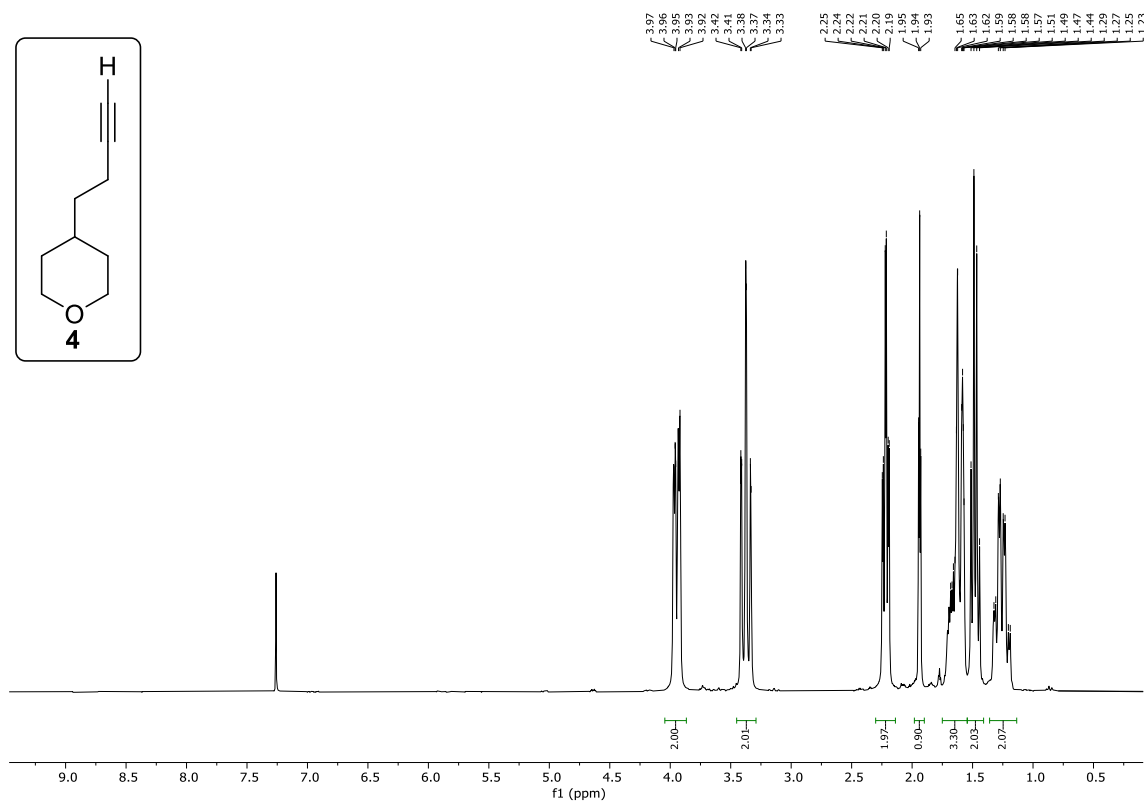
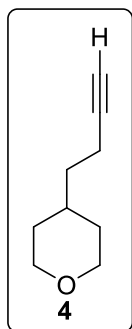
Espectros ^1H y ^{13}C del 2-(tetrahidro-2H-piran-4-il)etan-1-ol (2):



Espectros ^1H y ^{13}C del 4-(2-bromoetil)tetrahidro-2H-pirano (**3**):

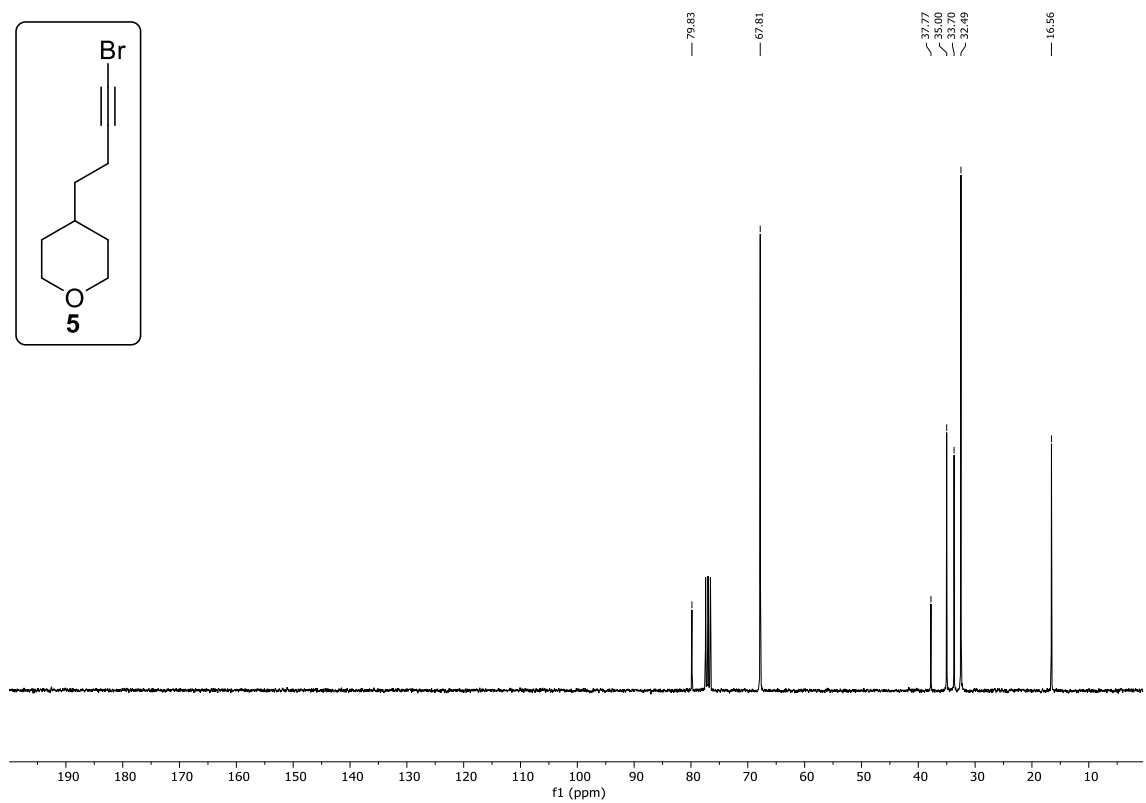
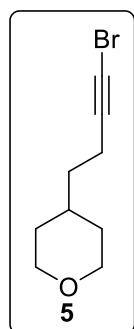
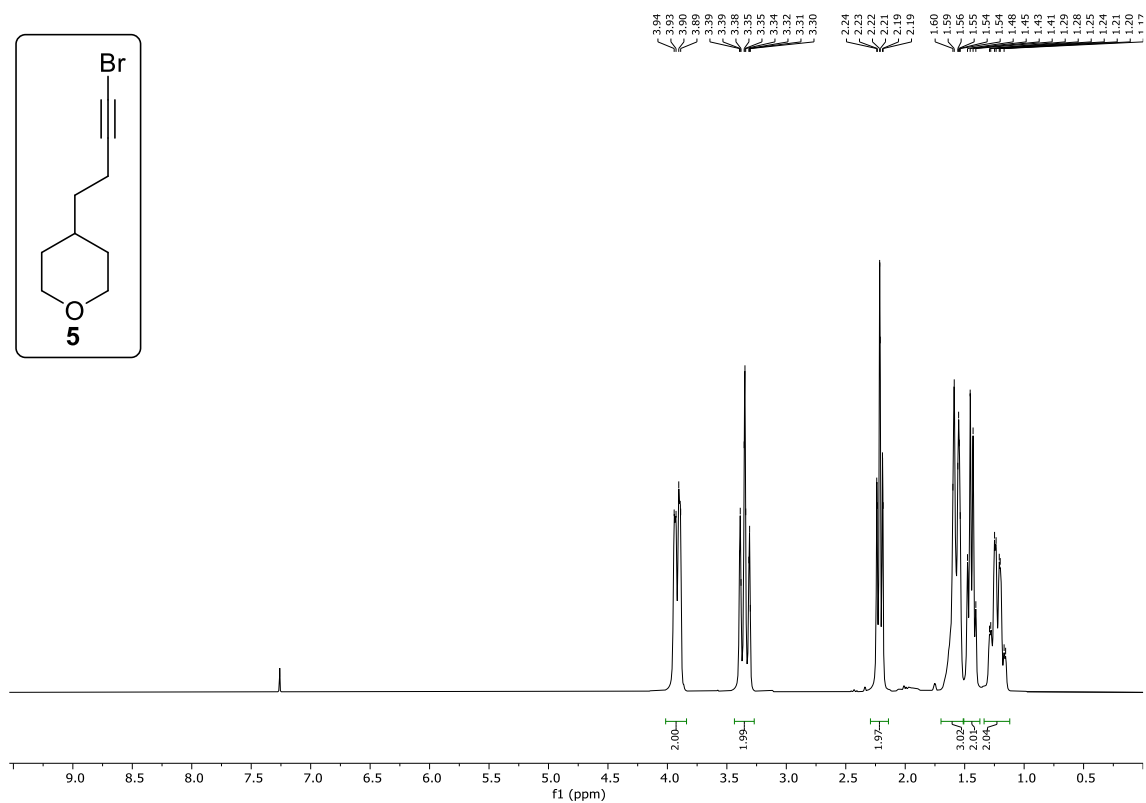
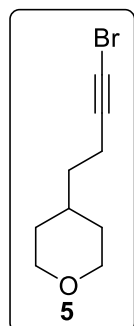


Espectros ^1H y ^{13}C del 4-(3-butin-1-il)tetrahydro-2H-pirano (4):

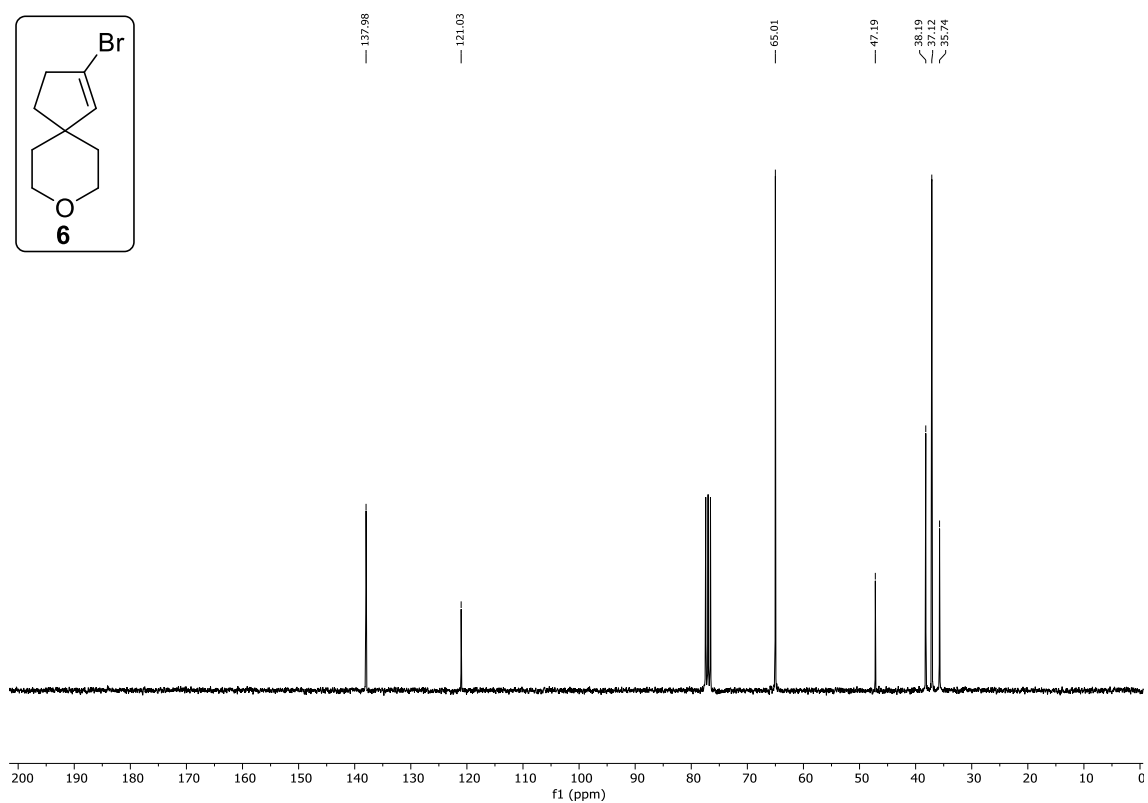
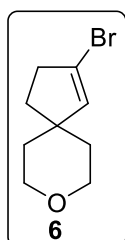
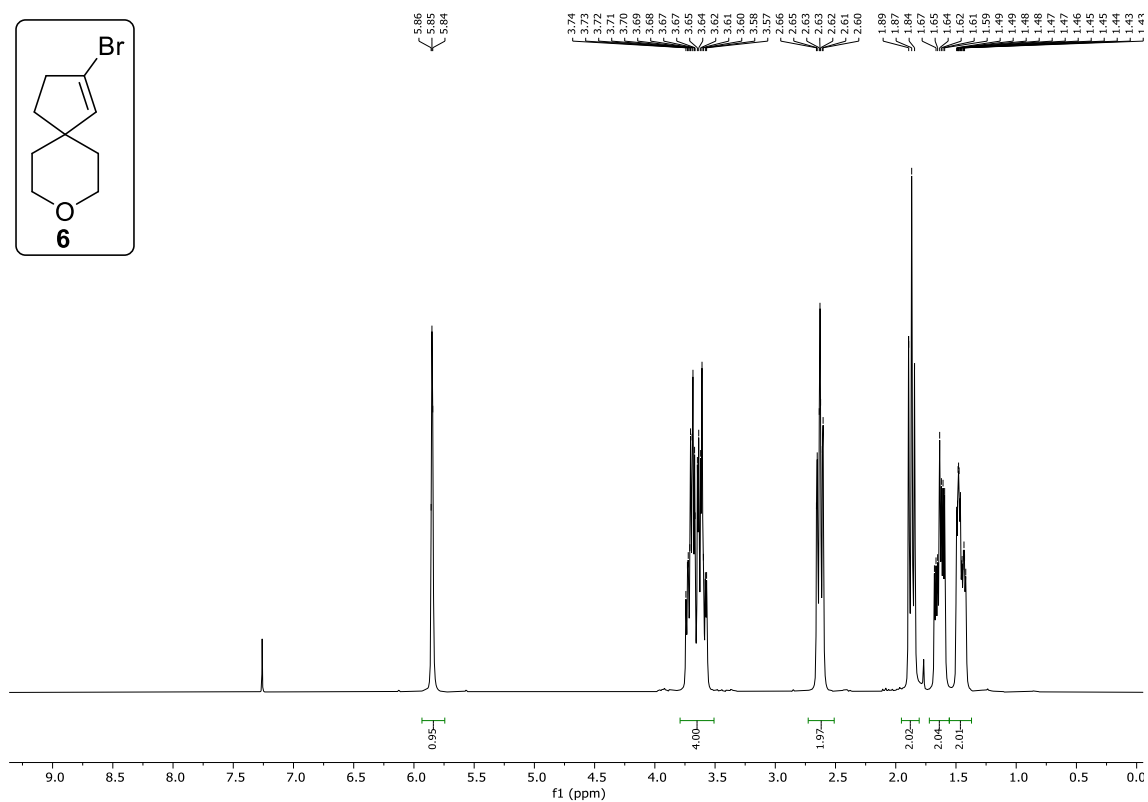
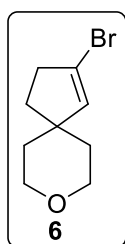


Espectros ^1H y ^{13}C del 4-(4-bromobut-3-in-1-il)tetrahidro-2H-pirano

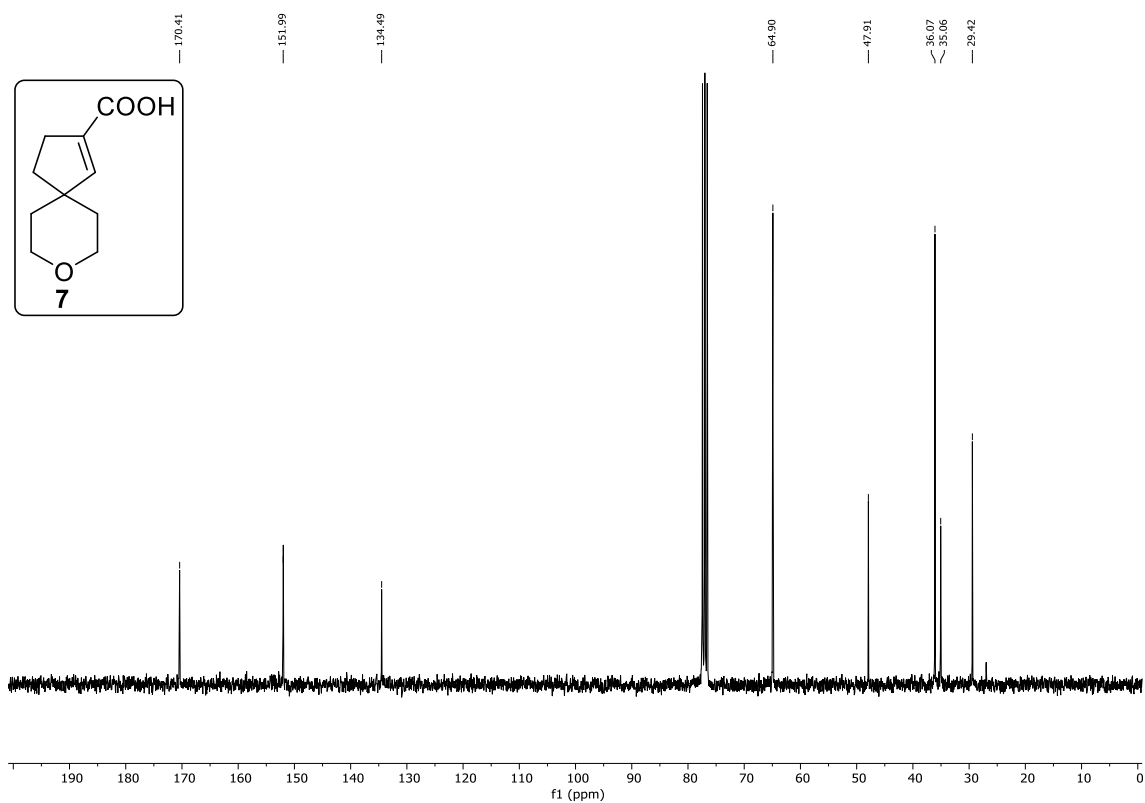
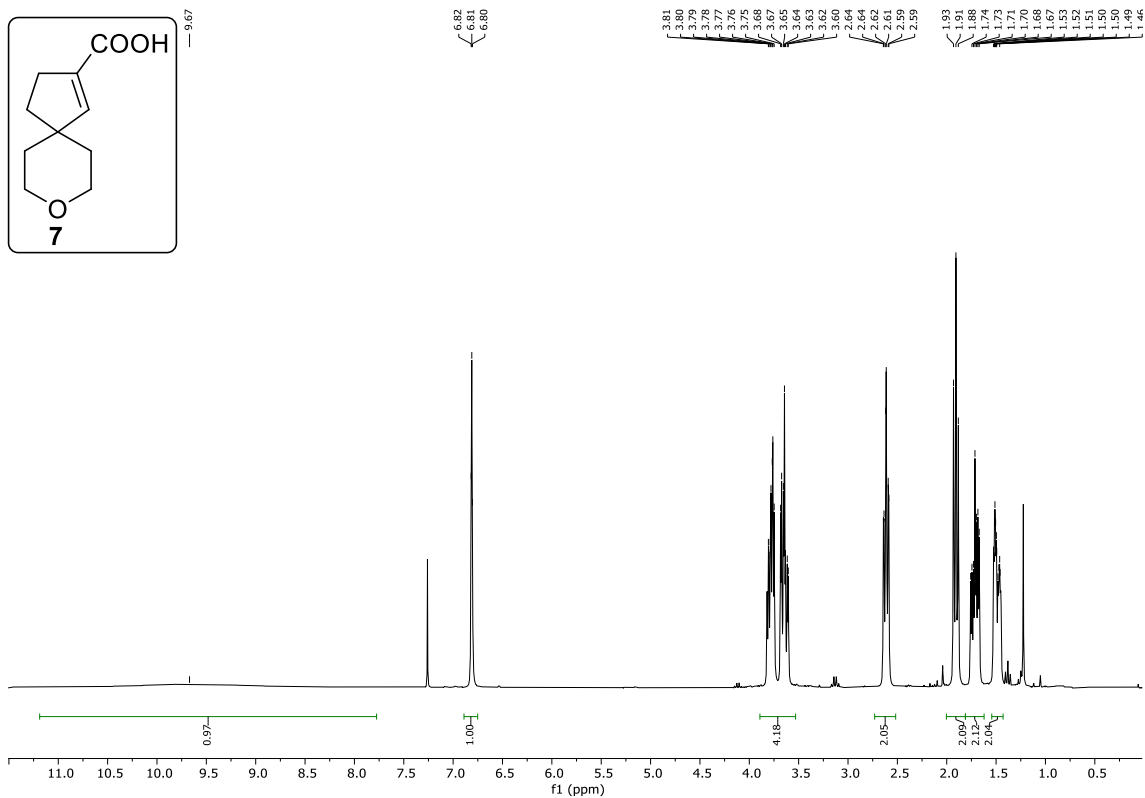
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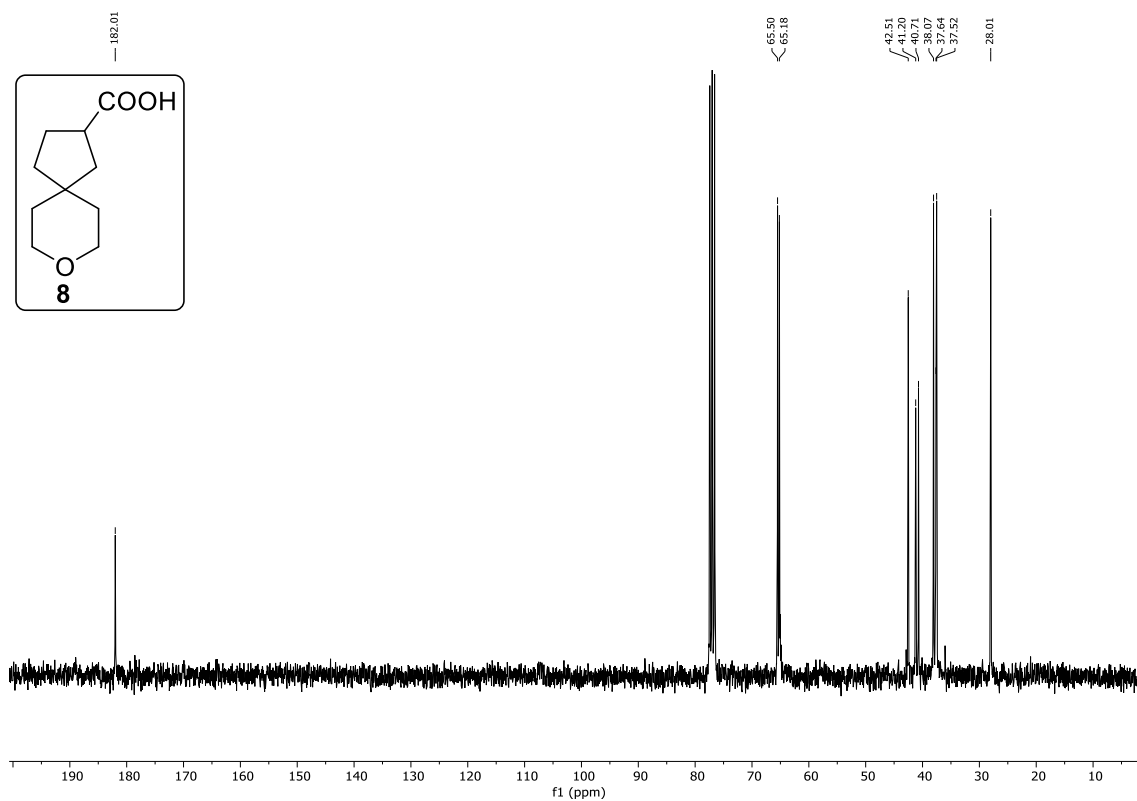
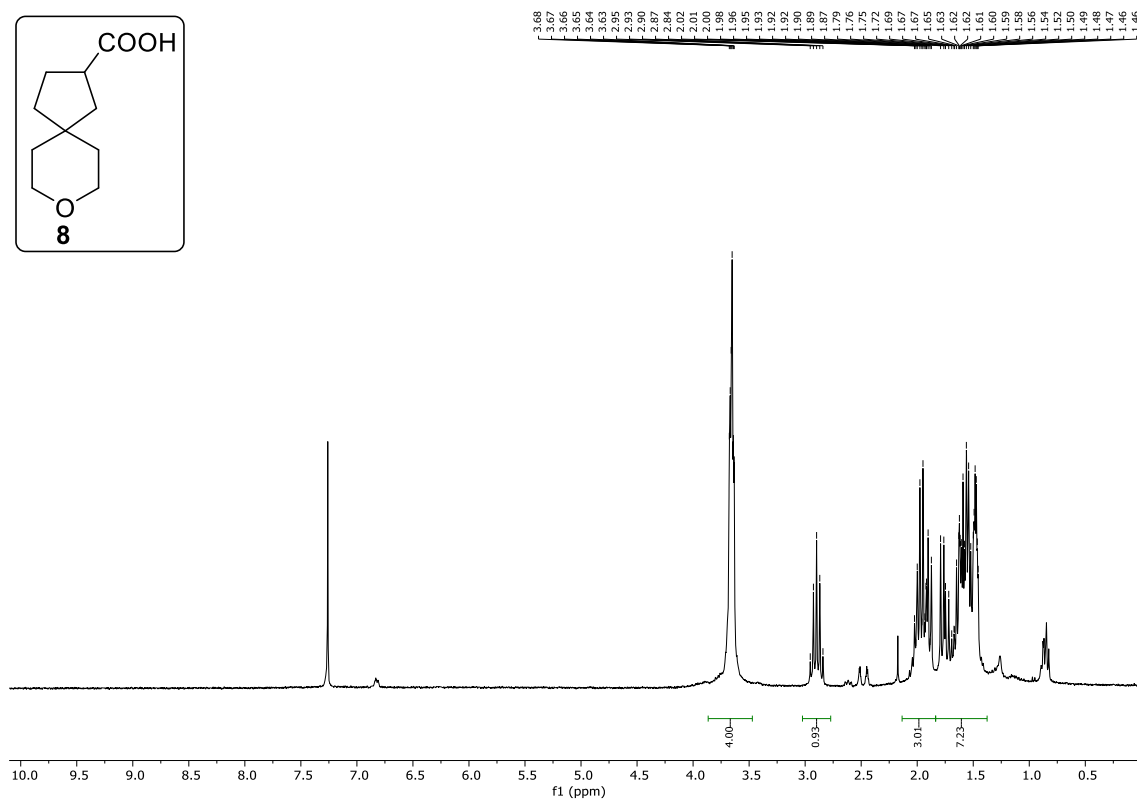
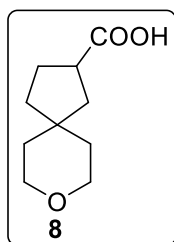
Espectros ^1H y ^{13}C del 2-bromo-oxaspiro[4.5]dec-1-eno (**6**):



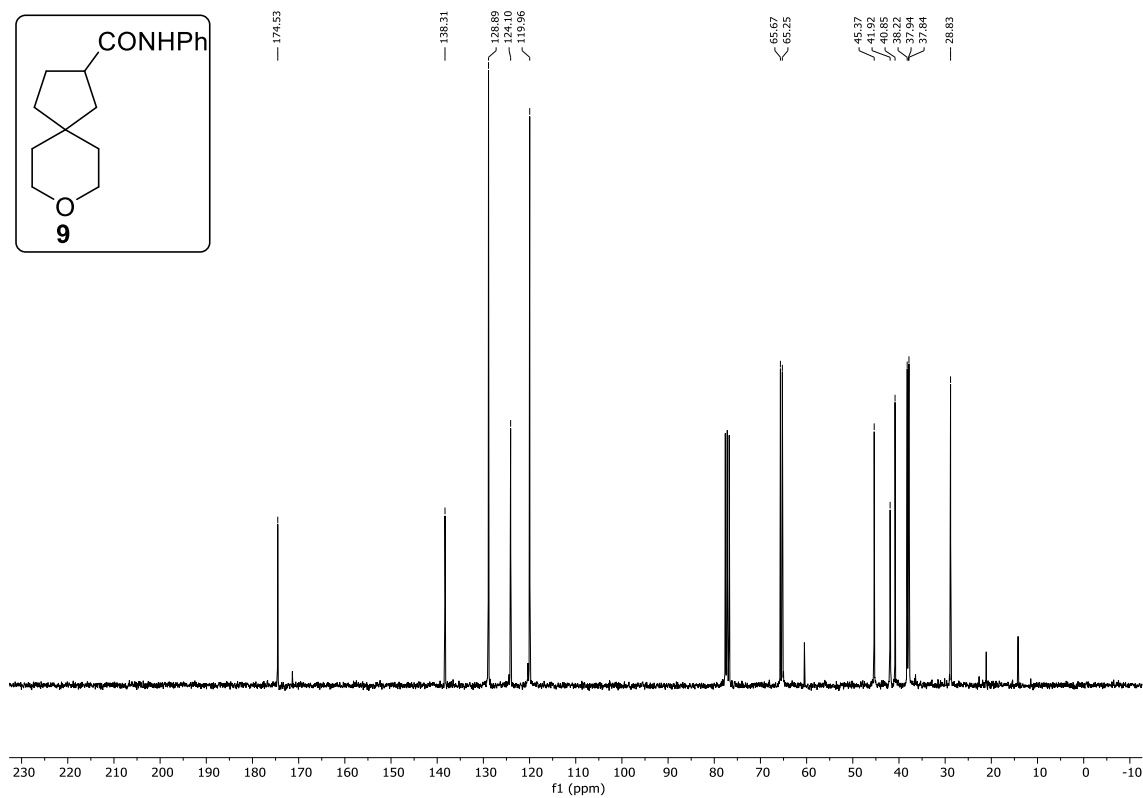
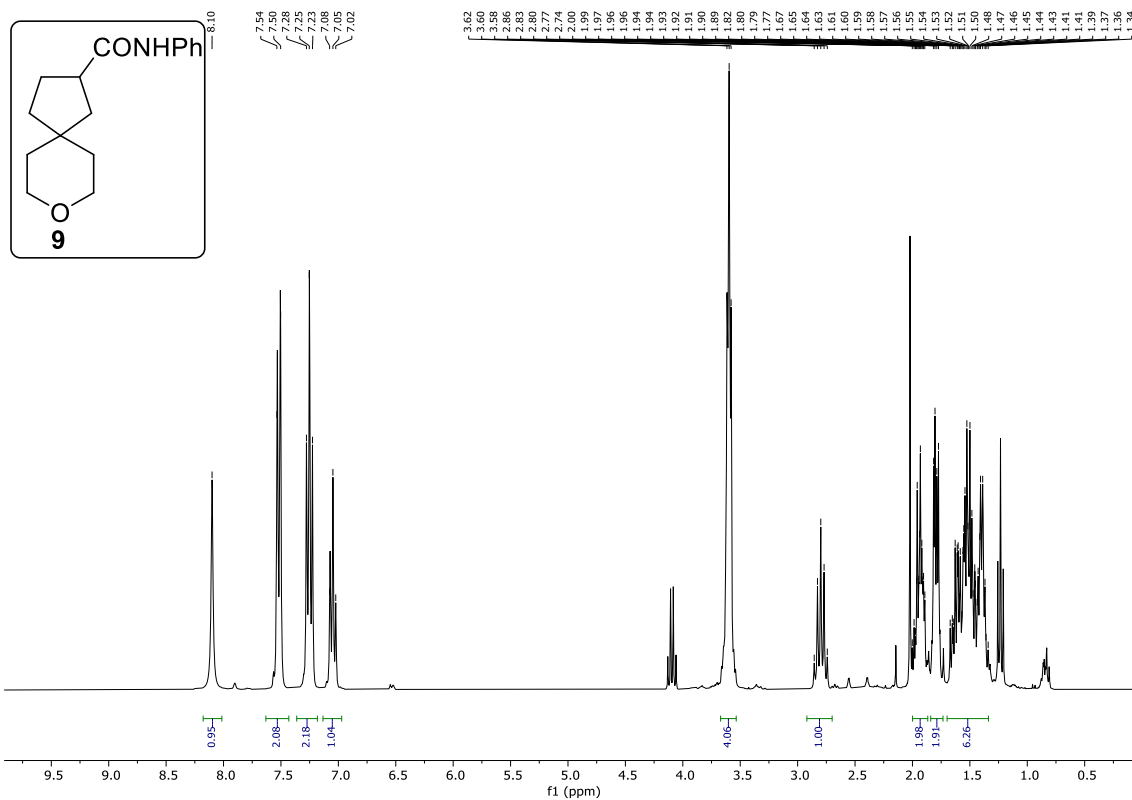
Espectros ^1H y ^{13}C del ácido 8-oxaspiro[4.5]dec-1-eno-2-carboxílico (7):



Espectros ^1H y ^{13}C del ácido 8-oxaspiro[4.5]decanocarboxílico (8):

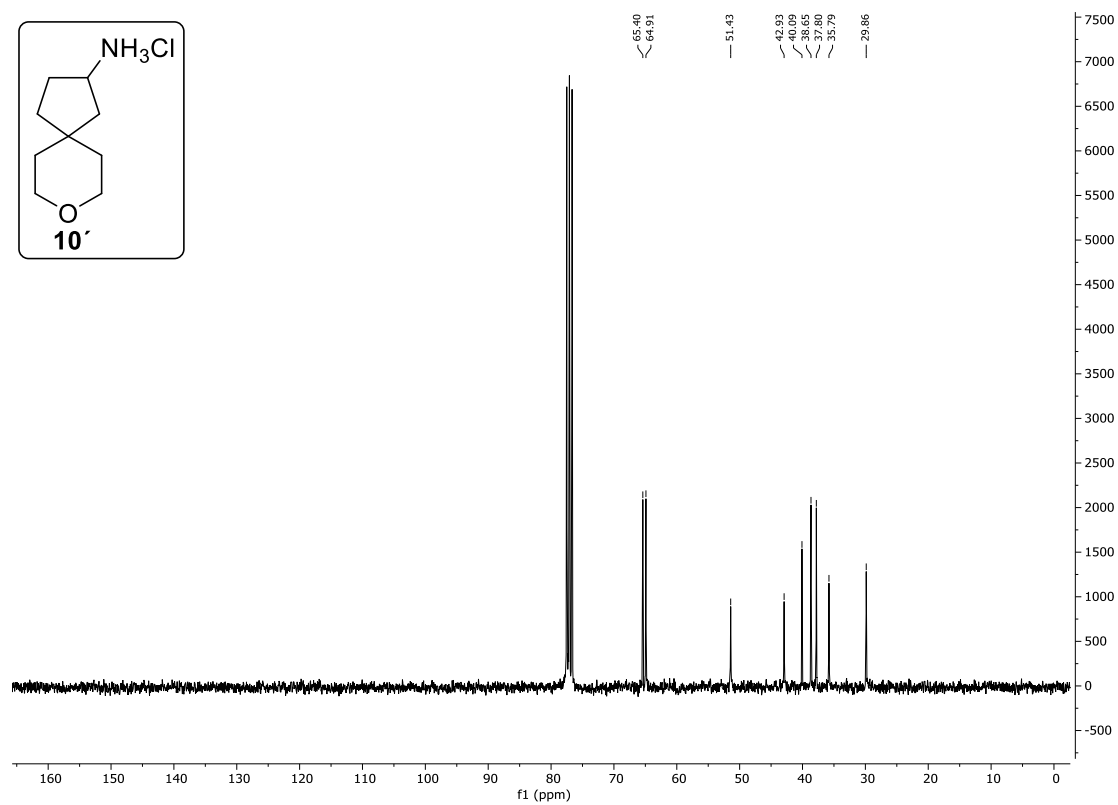
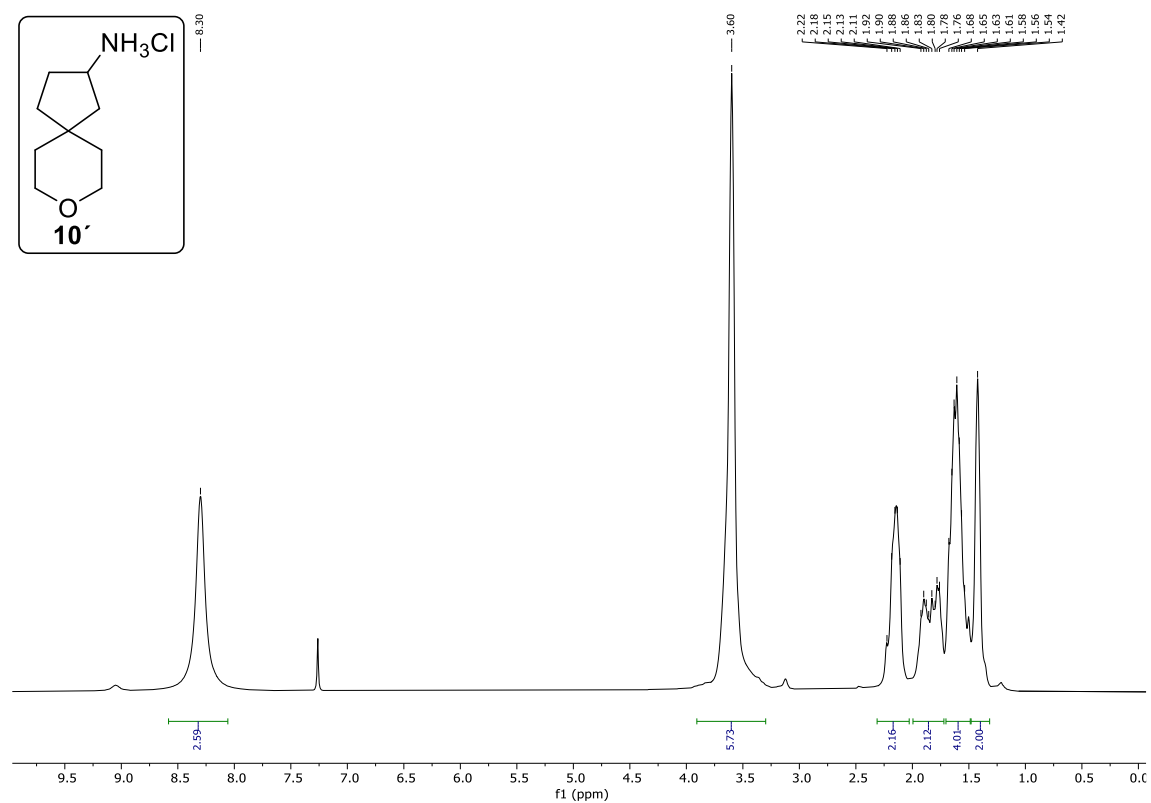


Espectros ^1H y ^{13}C de *N*-fenil-8-oxaspiro[4.5]decan-2-carboxamida (9):

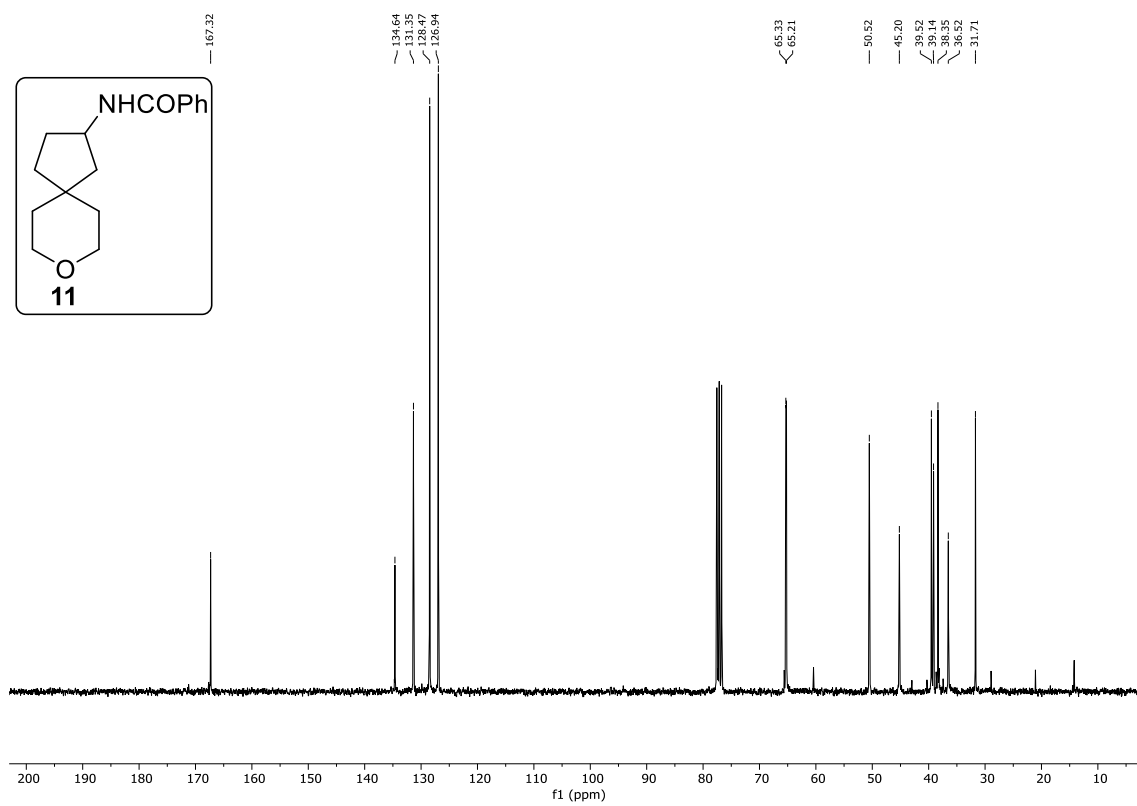
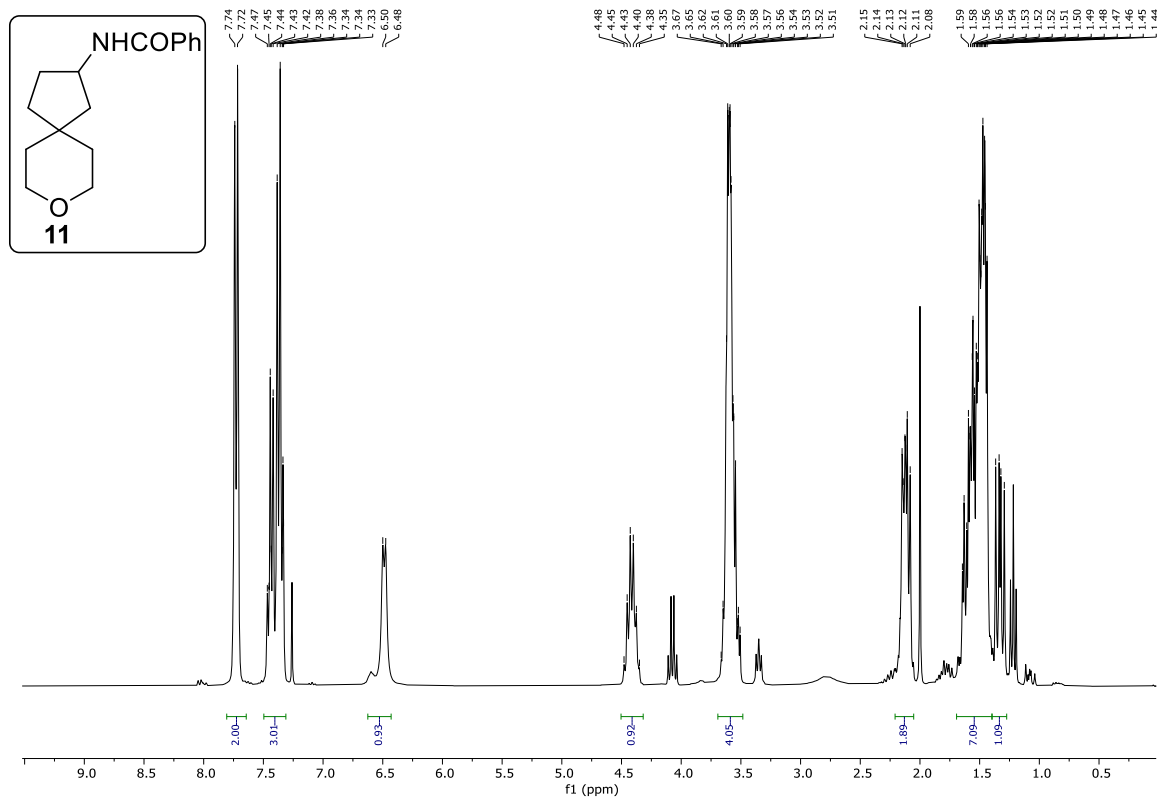


Espectros ^1H y ^{13}C del clorhidrato de 8-oxaspiro[4.5]decan-2-amina

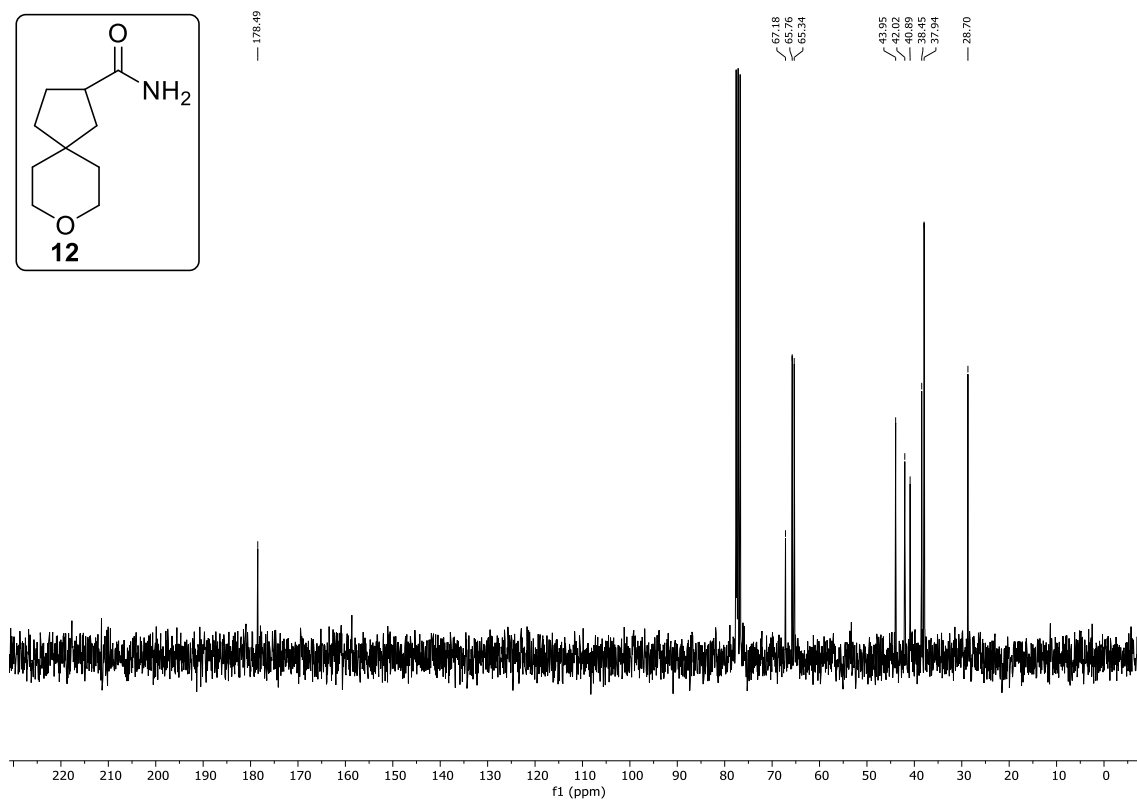
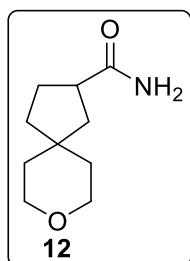
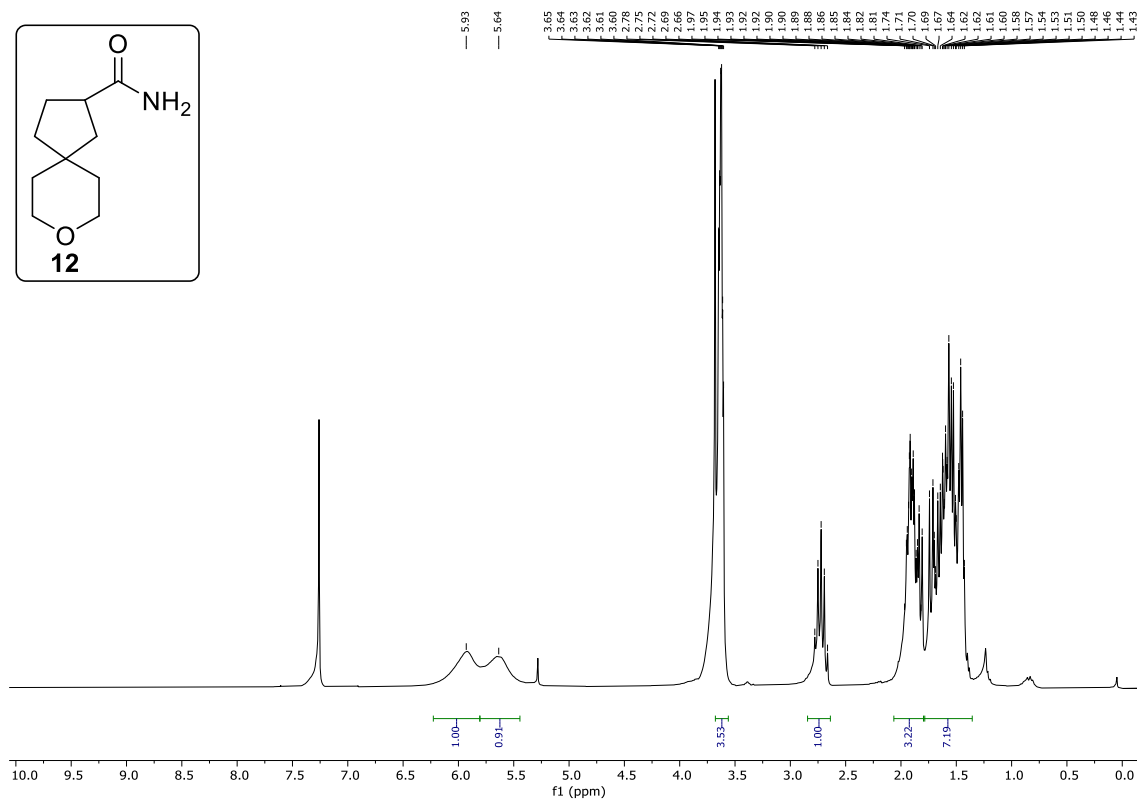
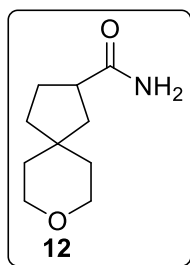
(10')



Espectros ^1H y ^{13}C de *N*-(8-oxaspiro[4.5]decan-2-il)benzamida (11):

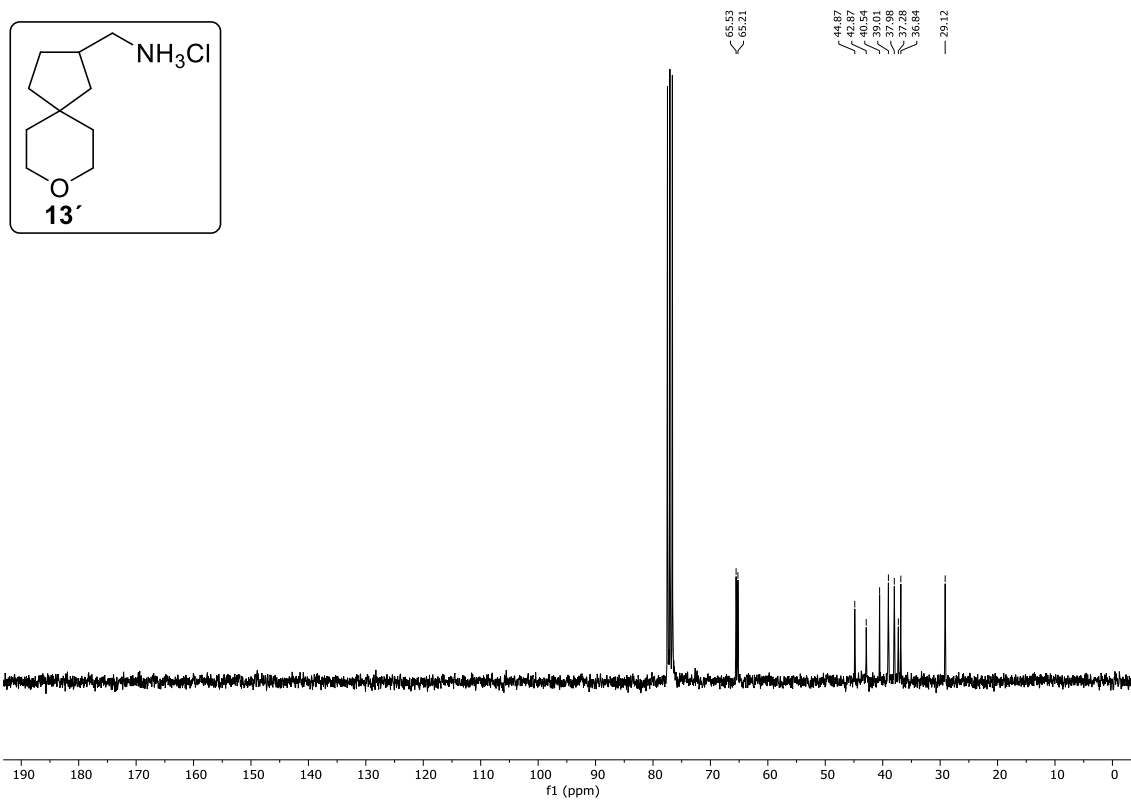
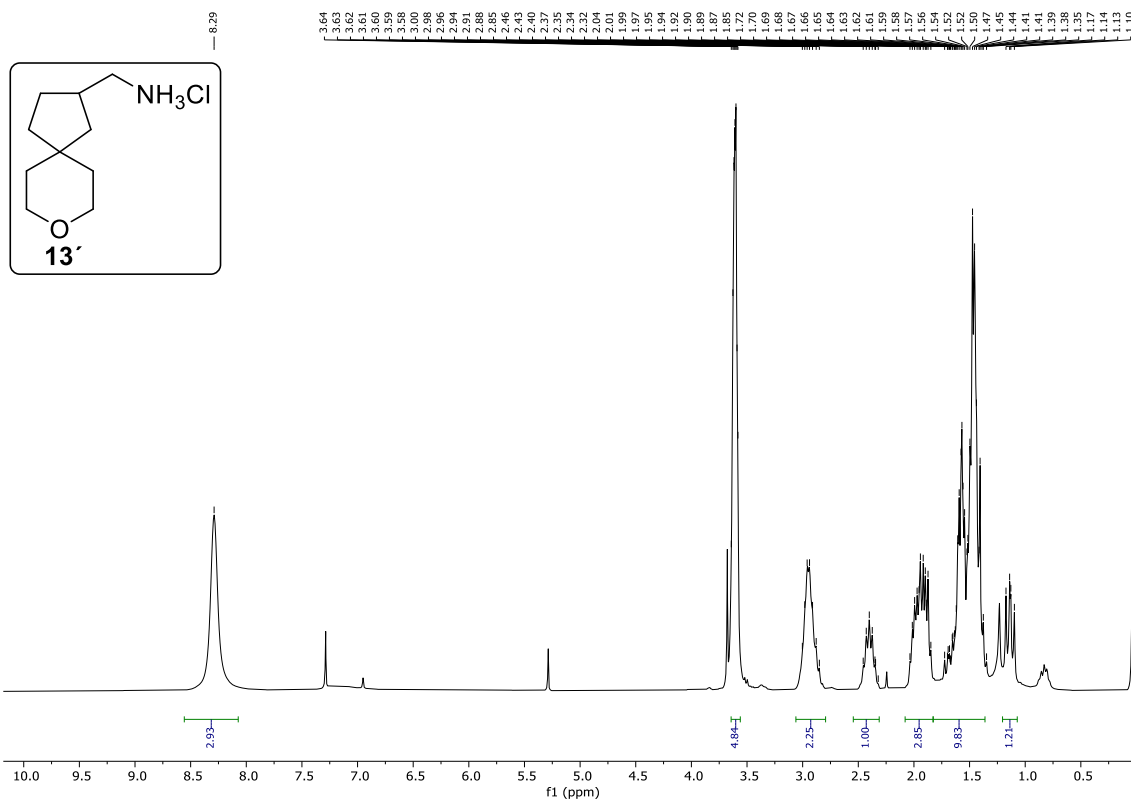


Espectros ^1H y ^{13}C del 8-oxaspiro[4.5]decan-2-carboxamida (12):



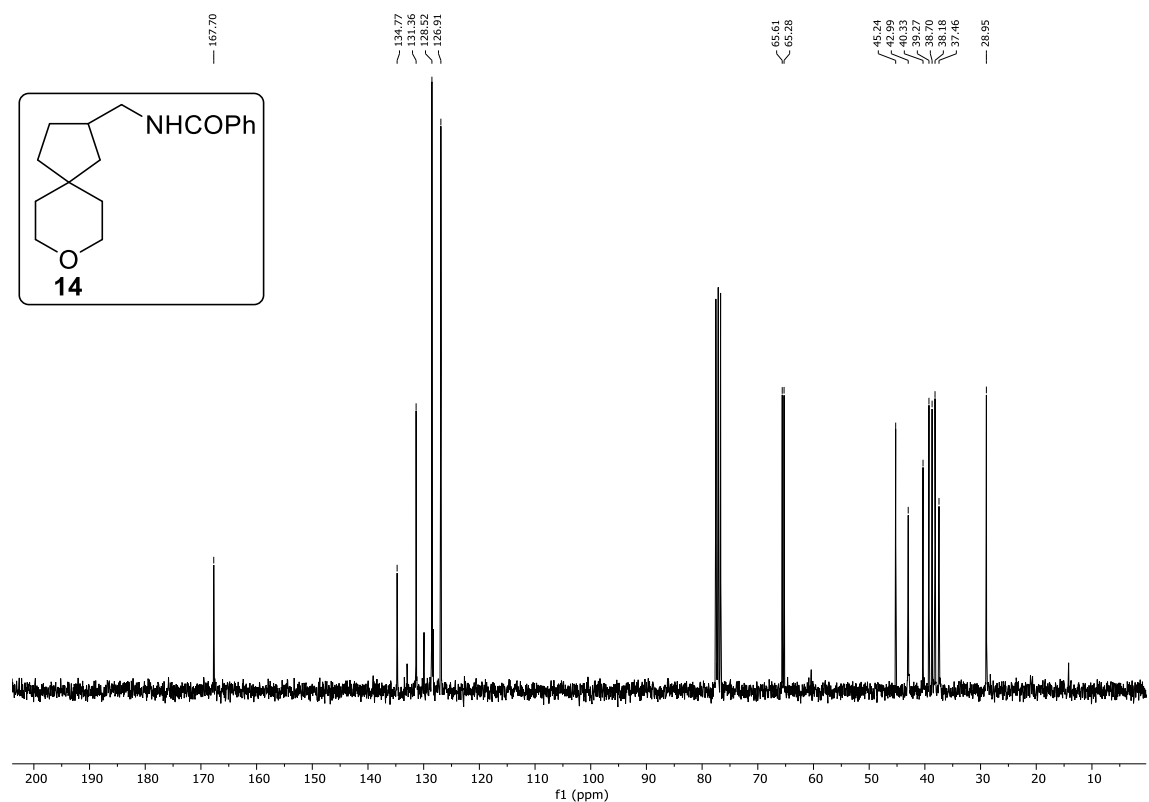
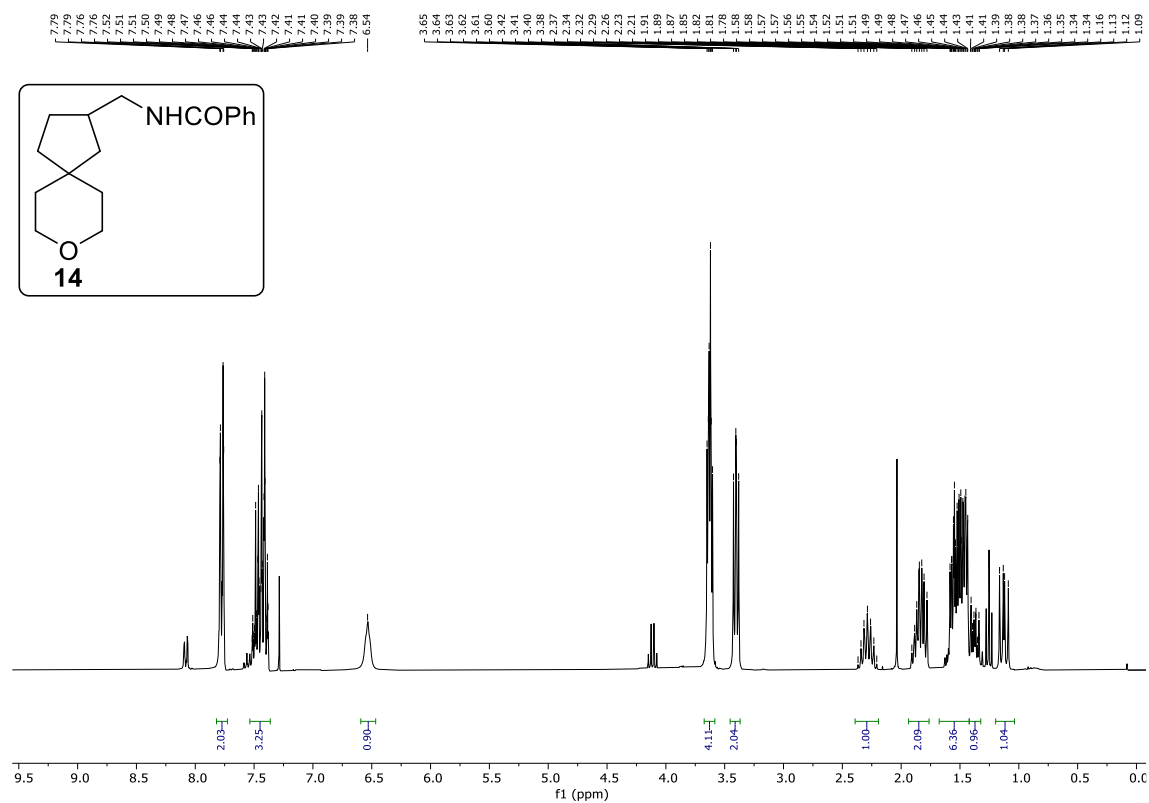
Espectros ^1H y ^{13}C del clorhidrato de (8-oxaspiro[4.5]decan-2-

il)metilamina (13')

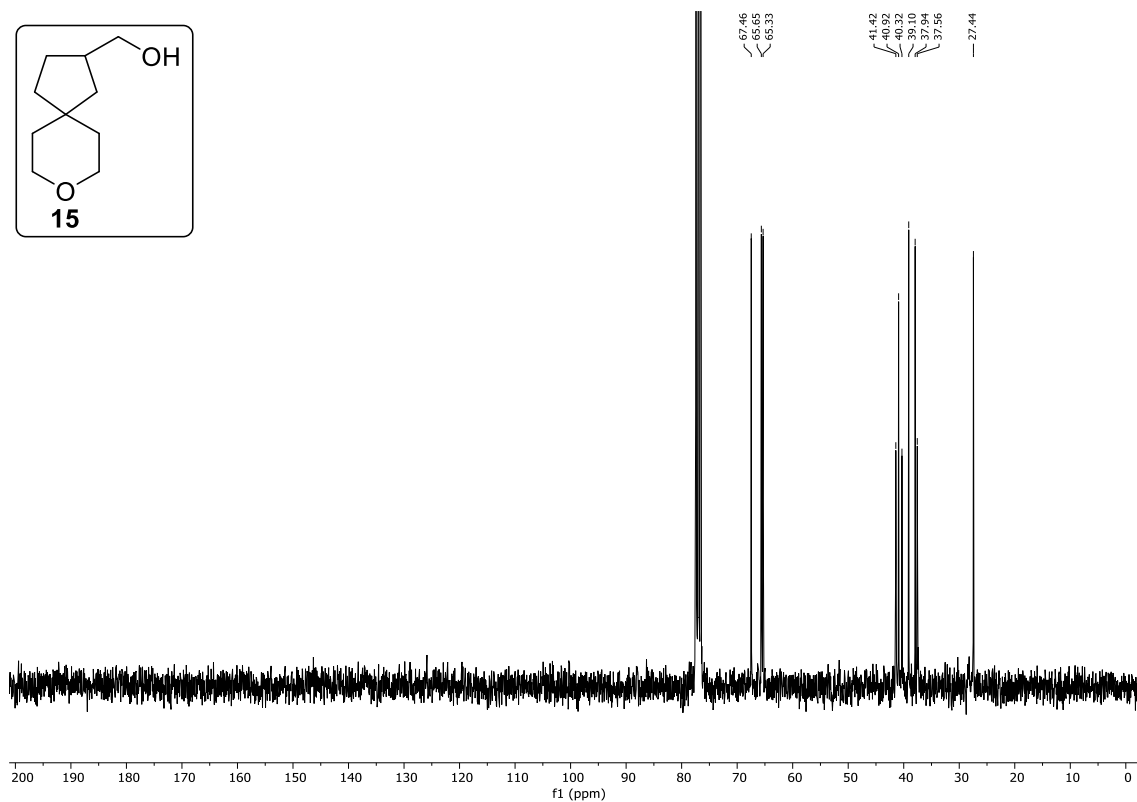
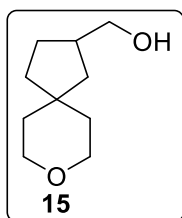
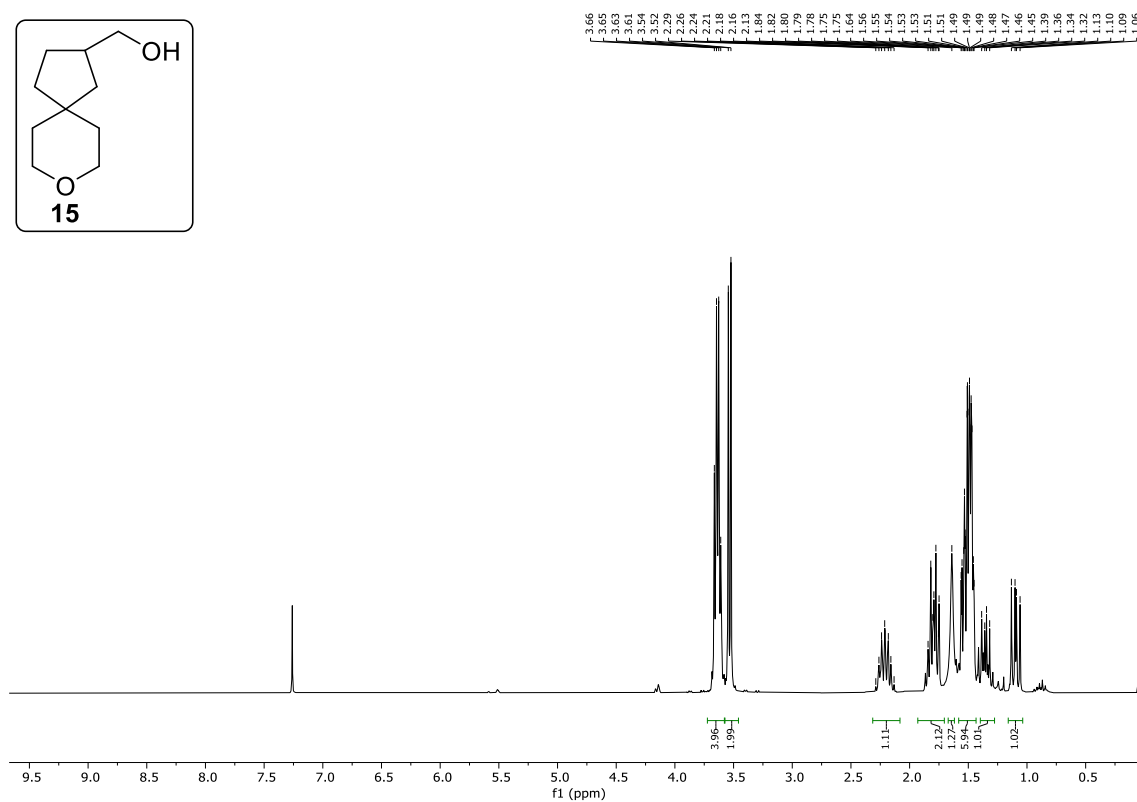
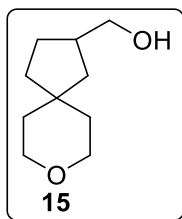


Espectros ^1H y ^{13}C de la *N*-((8-oxaspiro[4.5]decan-2-il)metil)benzamida

(14):

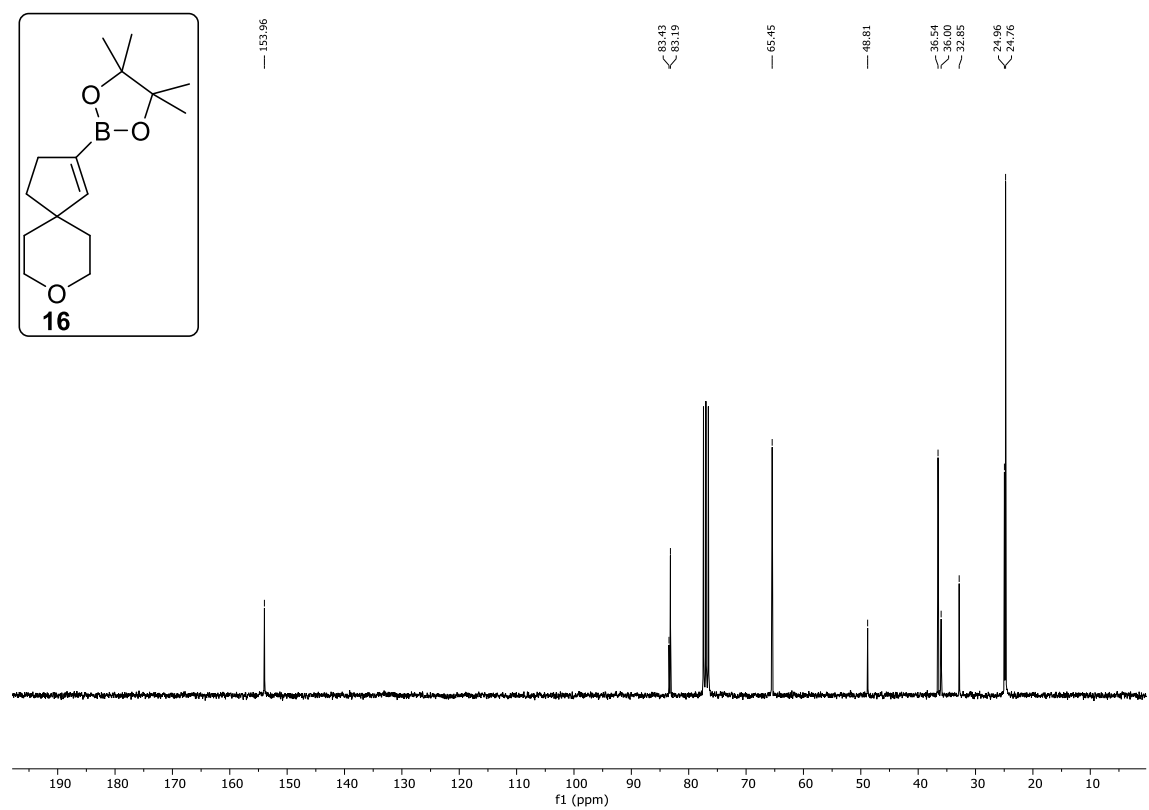
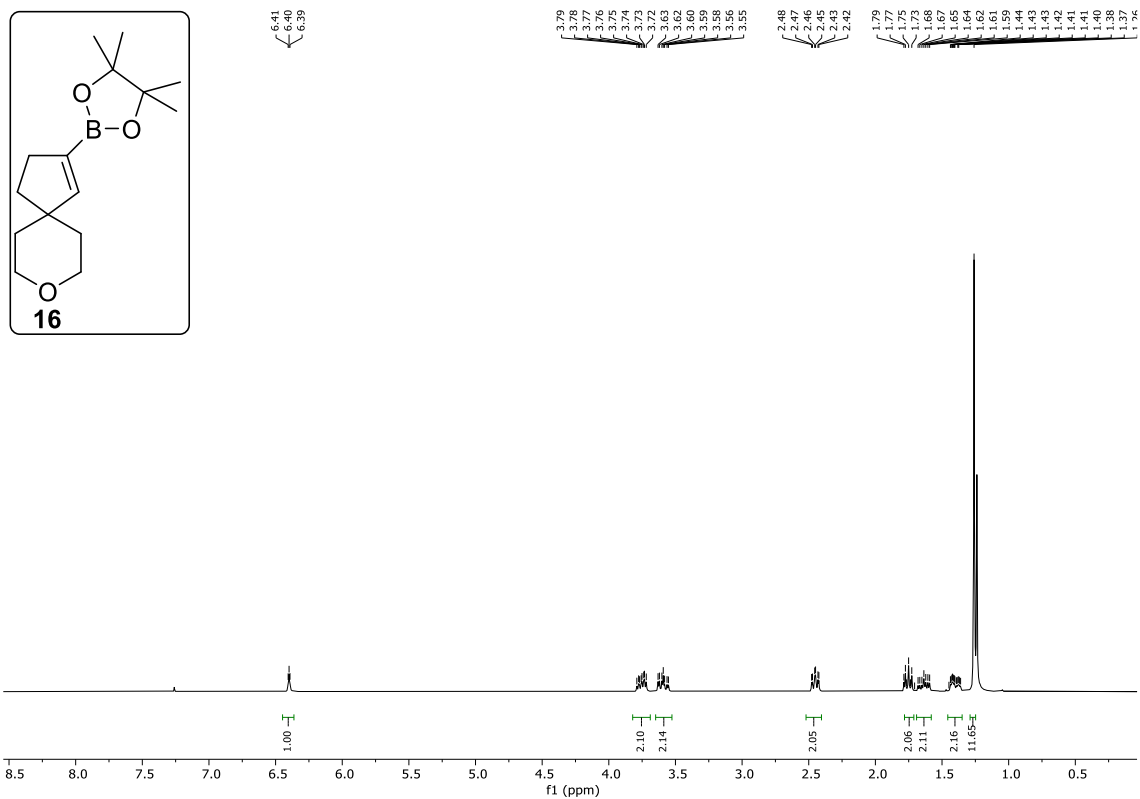


Espectros ^1H y ^{13}C del (8-oxaspiro[4.5]decan-2-il)metanol (15):

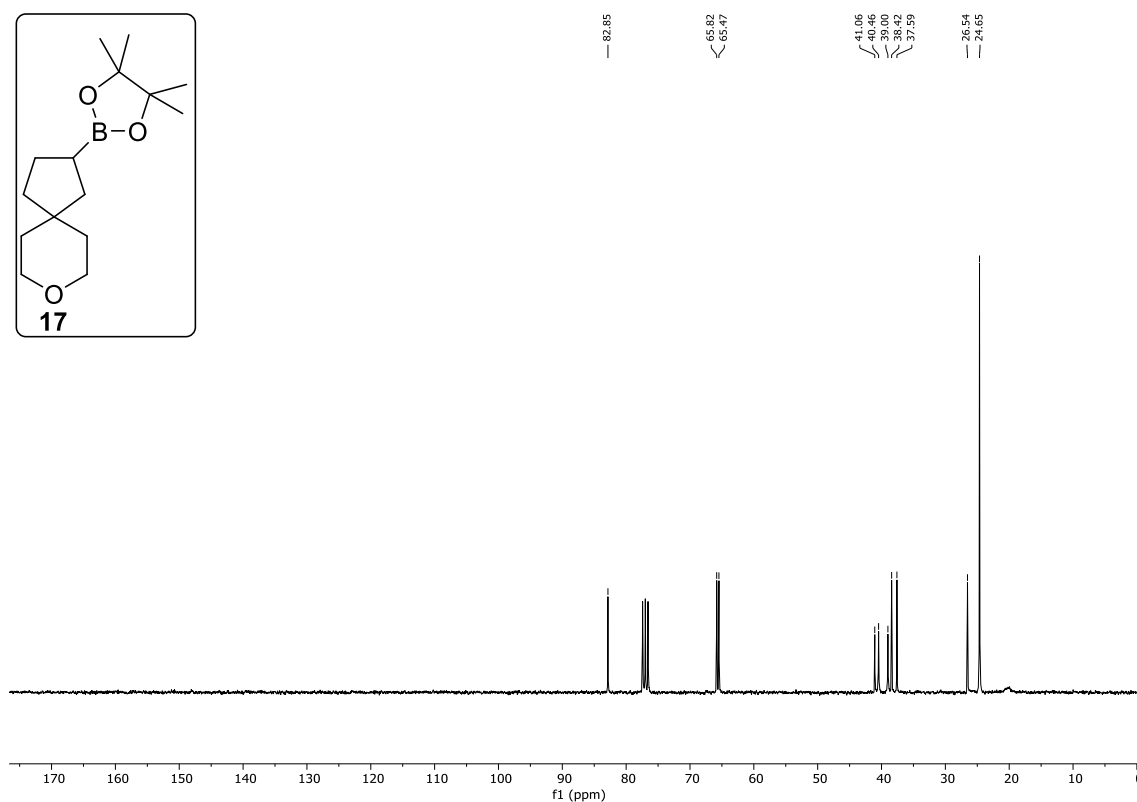
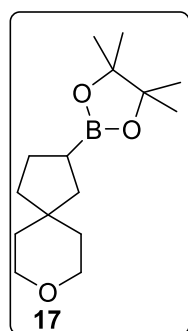
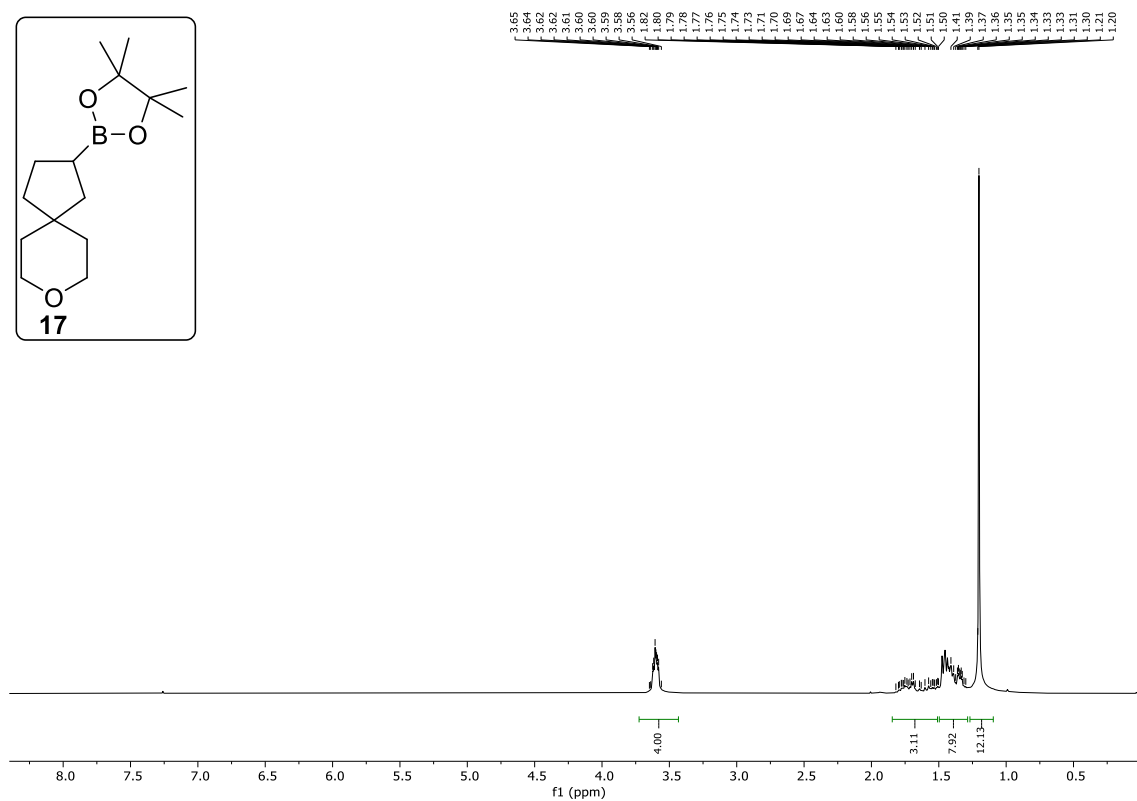
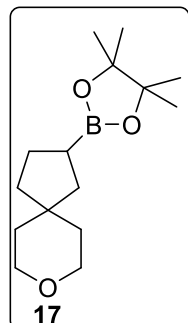


Espectros ^1H y ^{13}C del 4,4,5,5-tetrametil-2(8-oxaspiro[4.5]dec-1-en-2-il)dioxaborolano (16):

il)dioxaborolano (16):



Espectros ^1H y ^{13}C del 4,4,5,5-tetrametil-2(8-oxaspiro[4.5]decan-2-il)dioxaborolano (17):



Espectros ^1H y ^{13}C de la 8-oxaspiro[4.5]decan-2-ona (18):

