

Catalyst-free, one-pot three-component 1,3-dipolar cycloaddition of diethyl 2-aminomalonate, benzaldehydes and 3-nitro-2*H*-chromenes

Yang Jia, Da-Ming Du*

*School of Chemical Engineering and Environment, Beijing Institute of Technology,
Beijing 100081, People's Republic of China*

dudm@bit.edu.cn

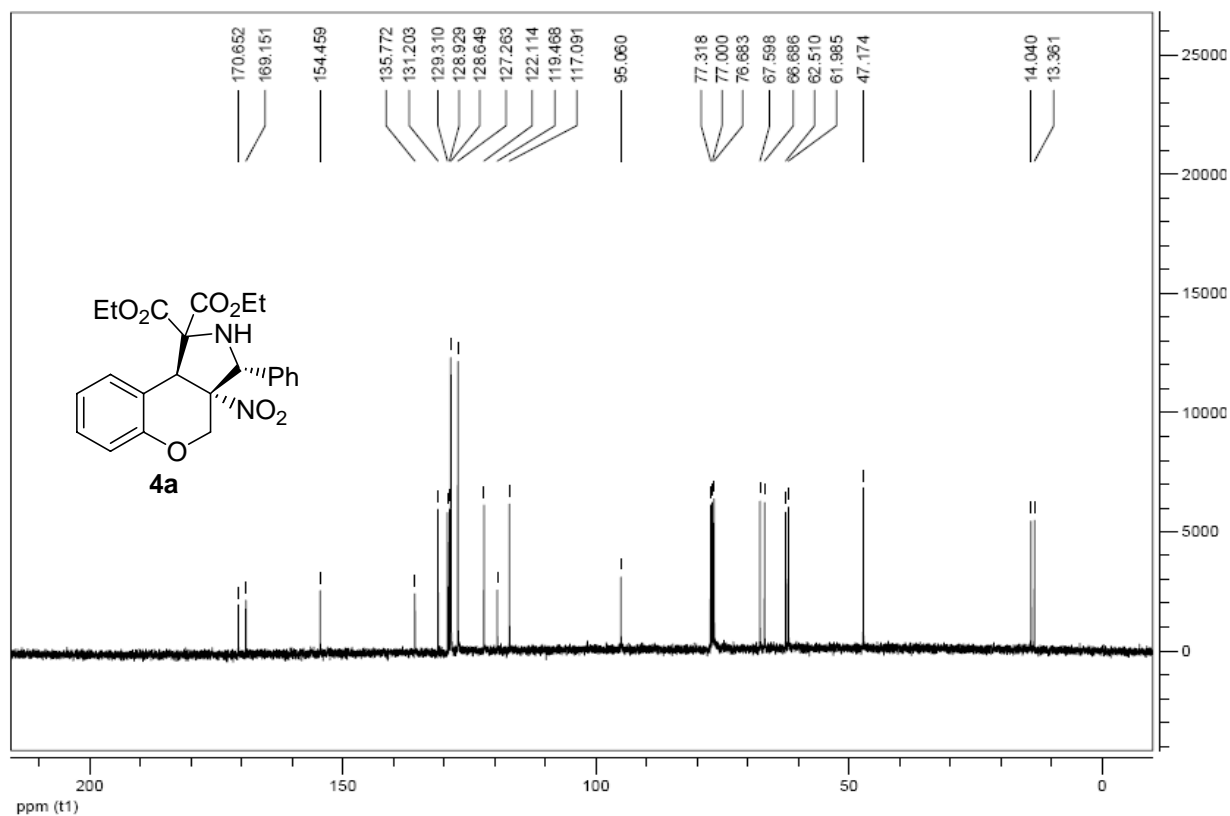
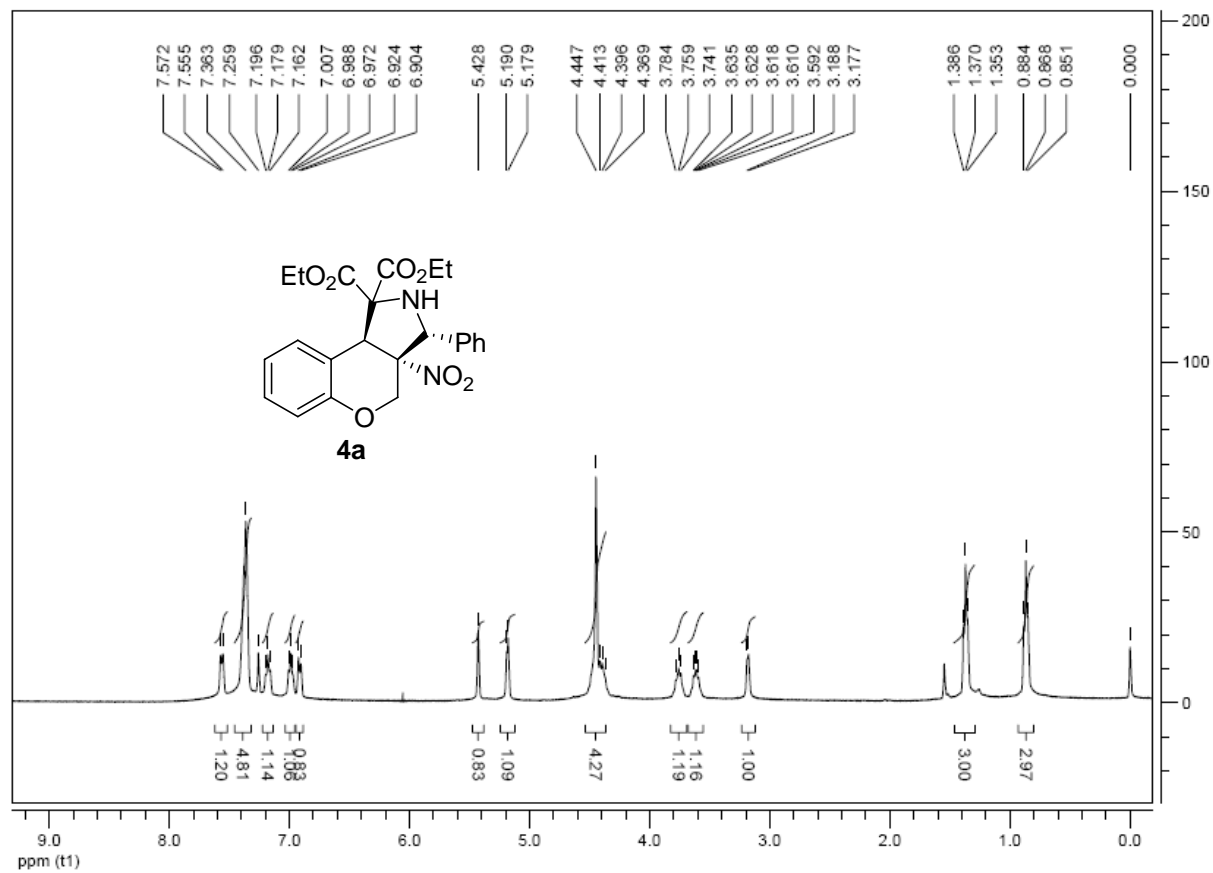
Supporting Information

Contents

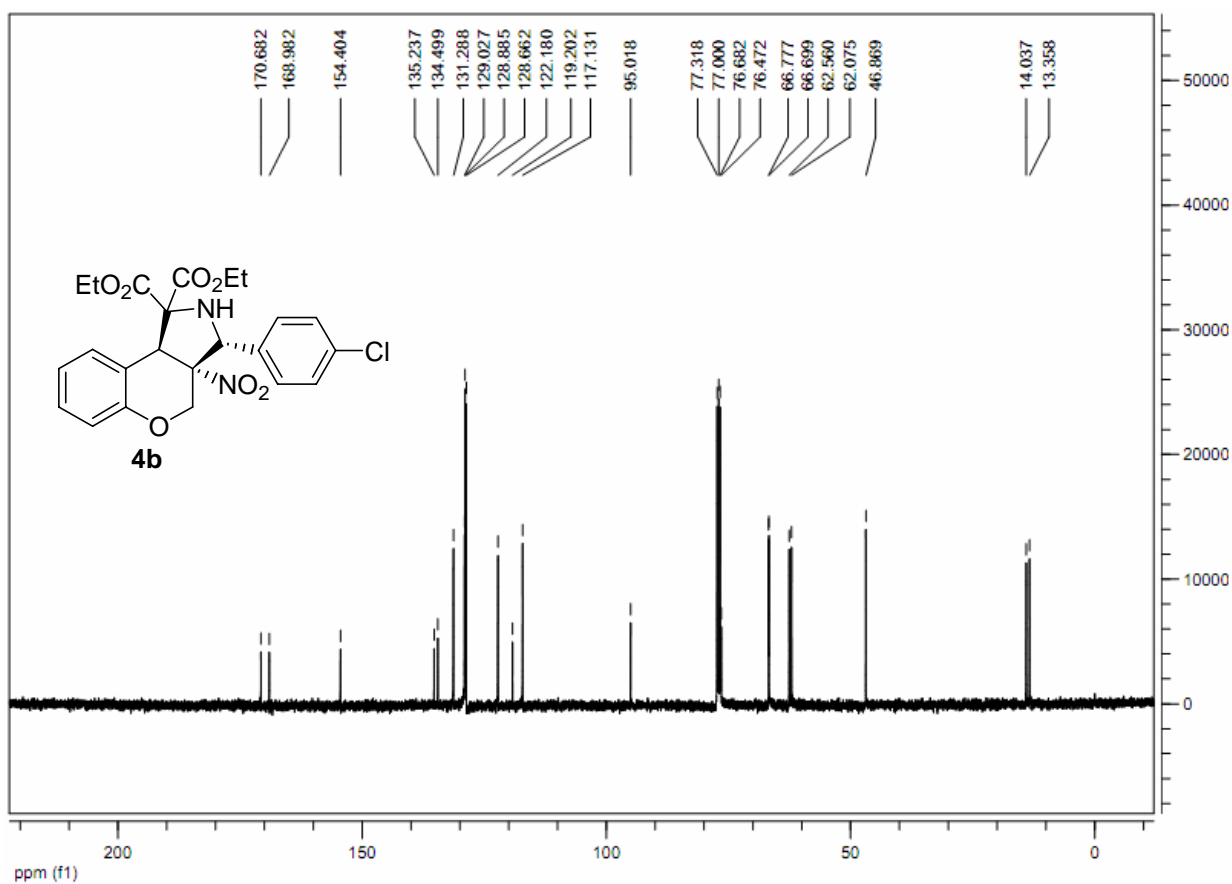
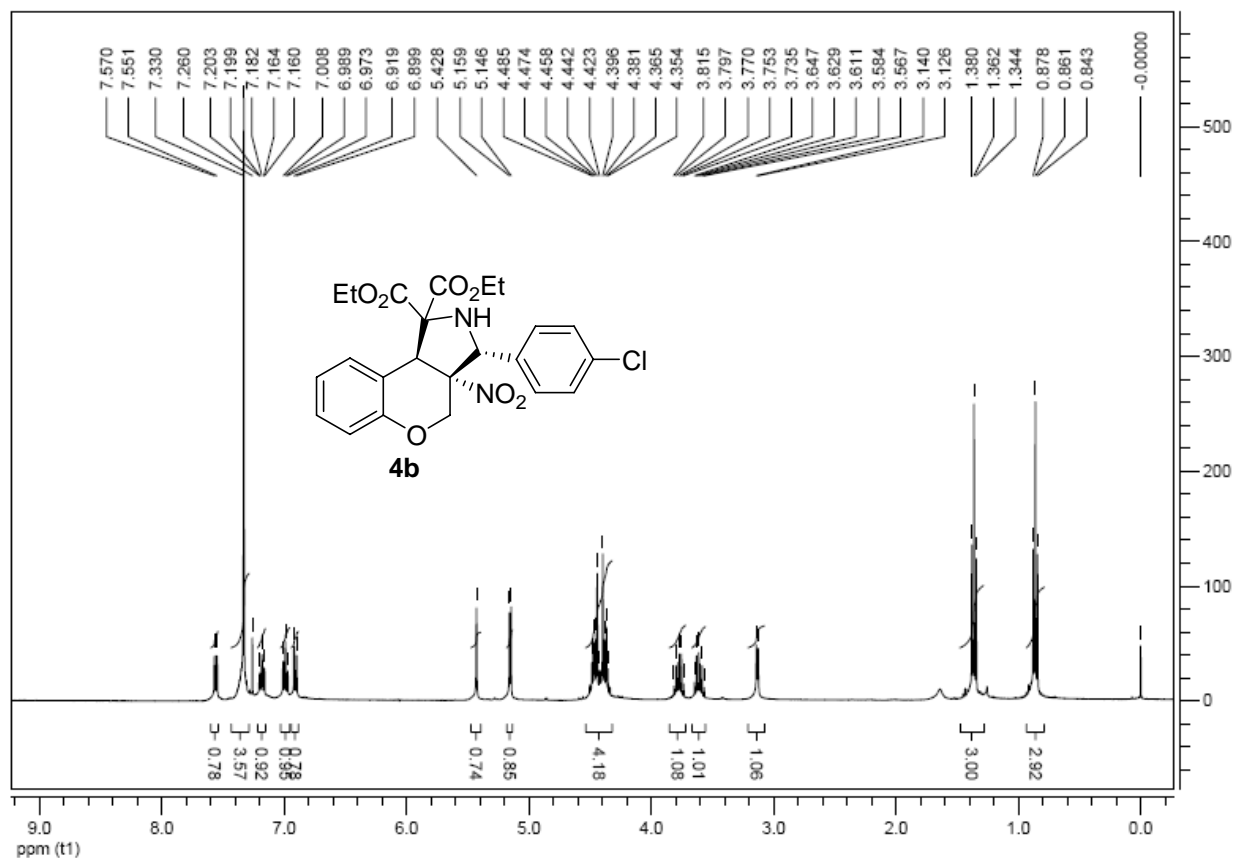
Copies of ¹H and ¹³C NMR spectra of new compounds.....S1

Copies of ^1H and ^{13}C NMR spectra of new compounds

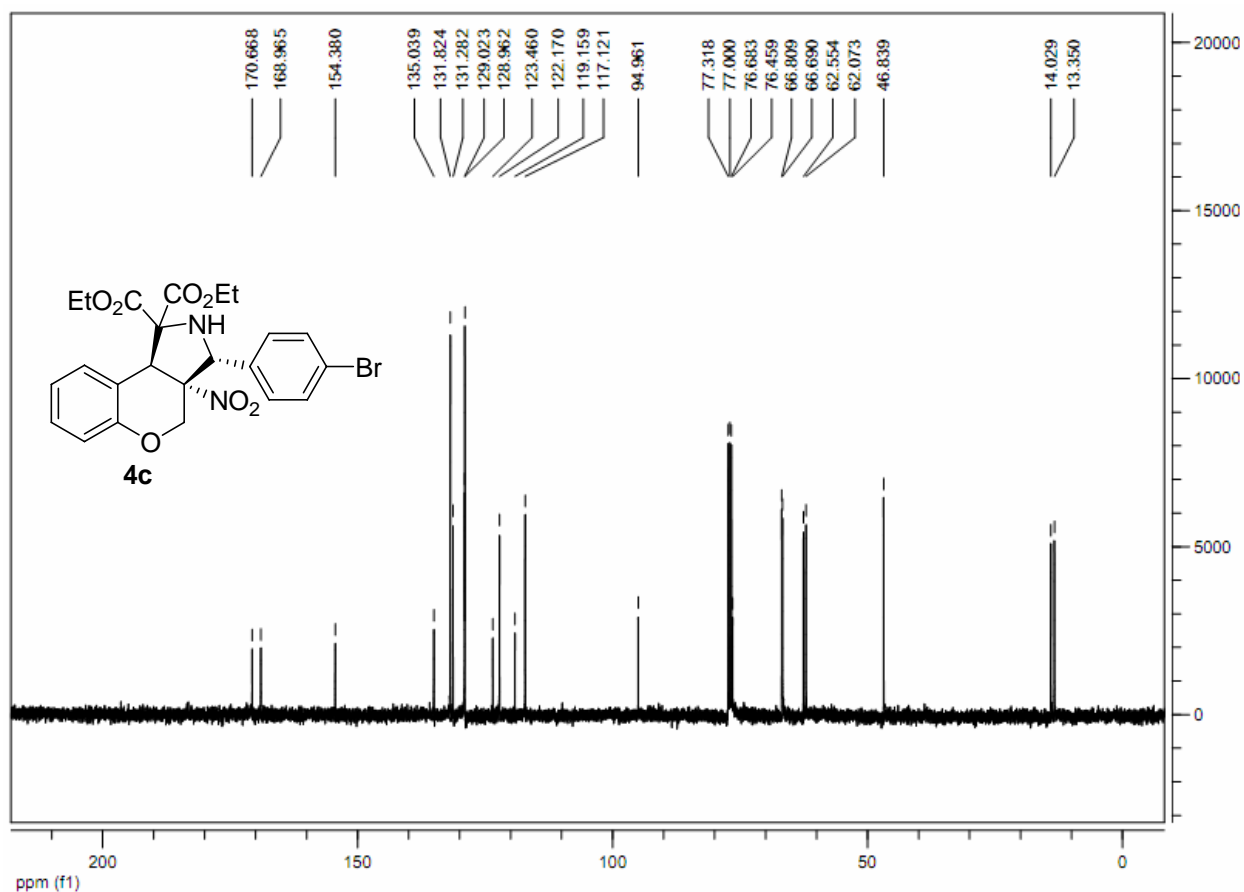
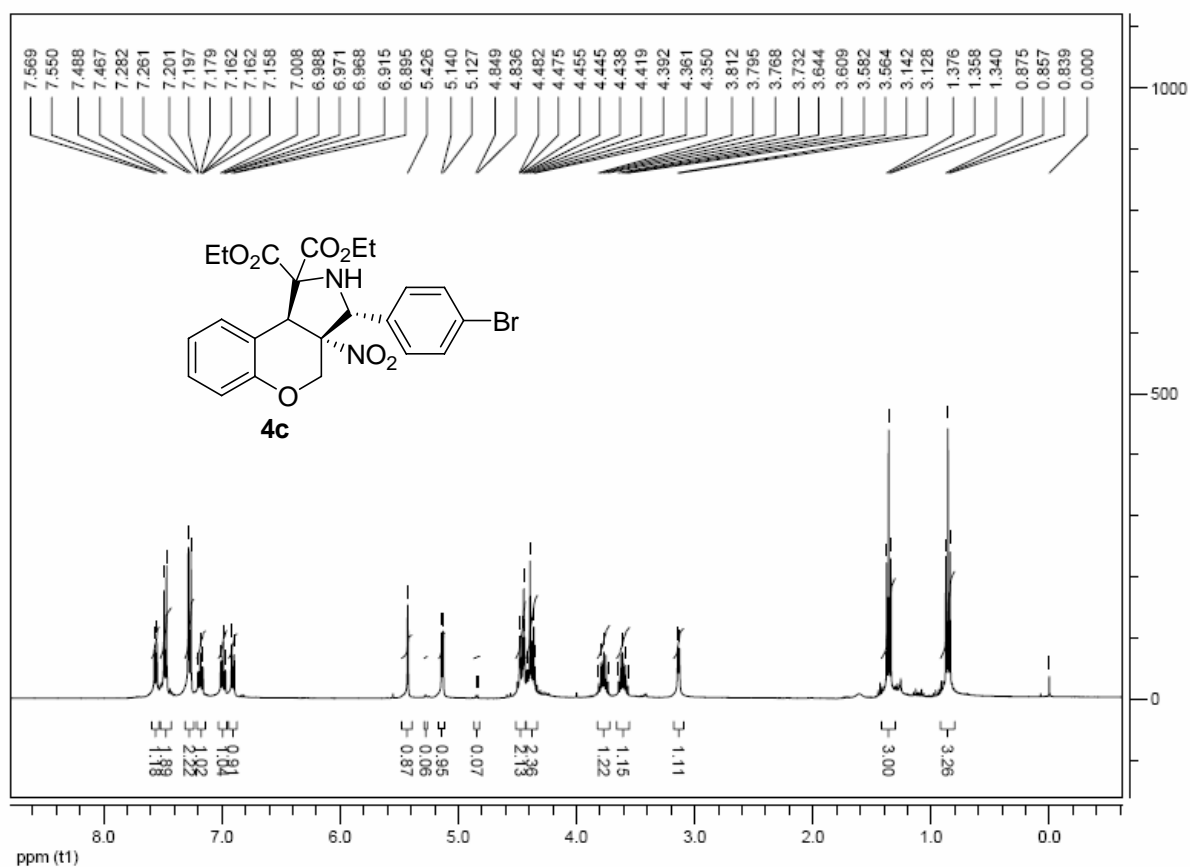
Diethyl 3-phenyl-3a-nitrobenzopyrano[3,4-c]-pyrrolidine-1,1-dicarboxylate (**4a**):



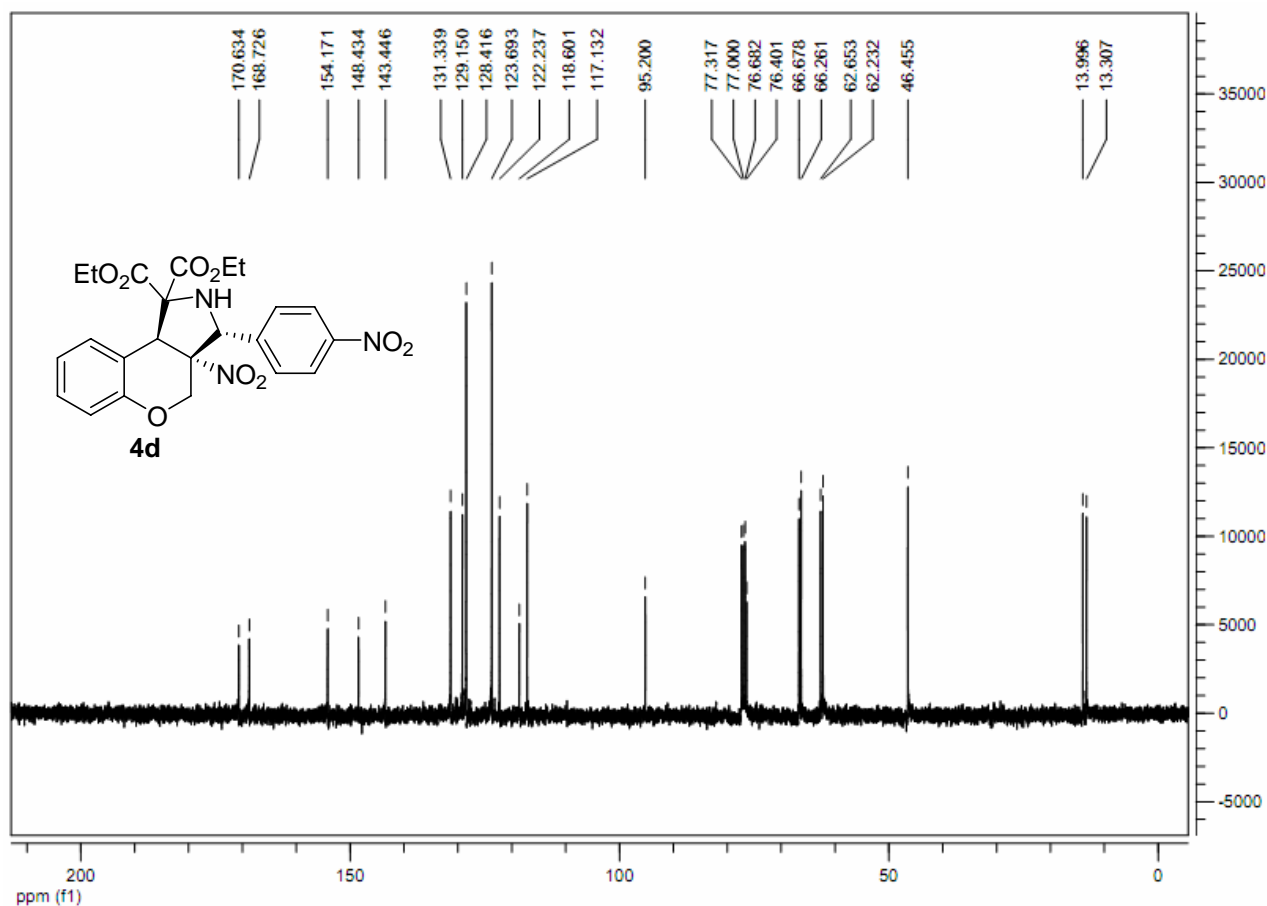
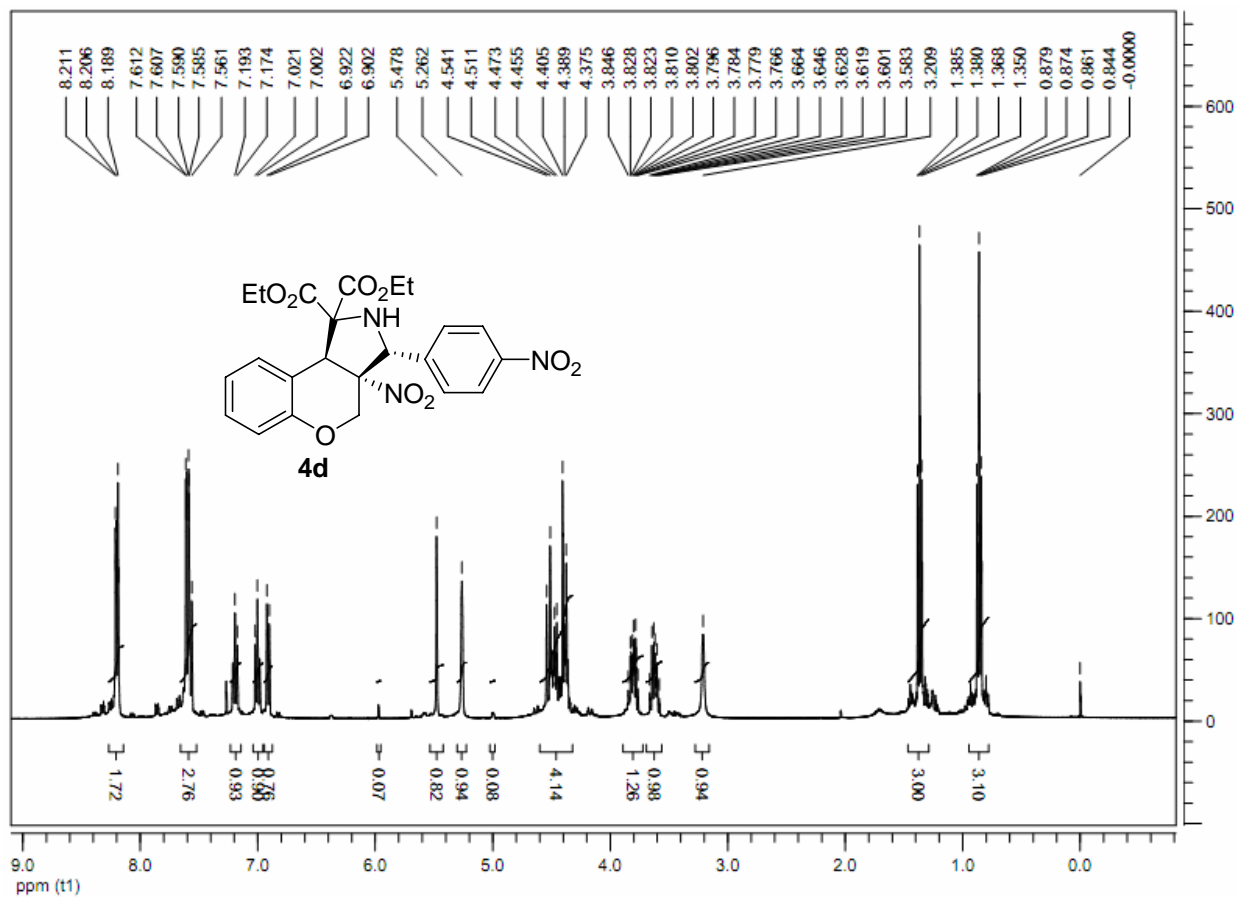
Diethyl 3-(4-chlorophenyl)-3a-nitrobenzopyrano[3,4-c]-pyrrolidine-1,1-dicarboxylate (4b):



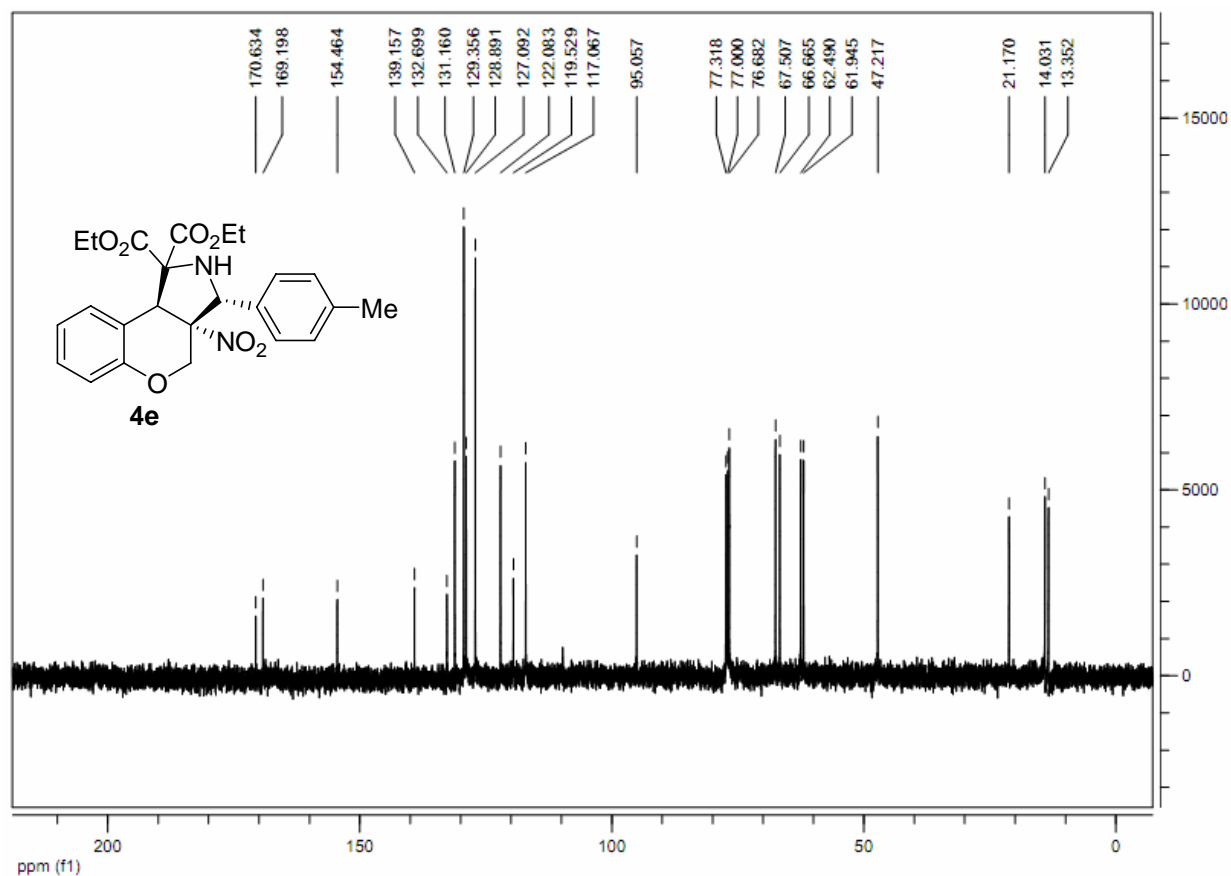
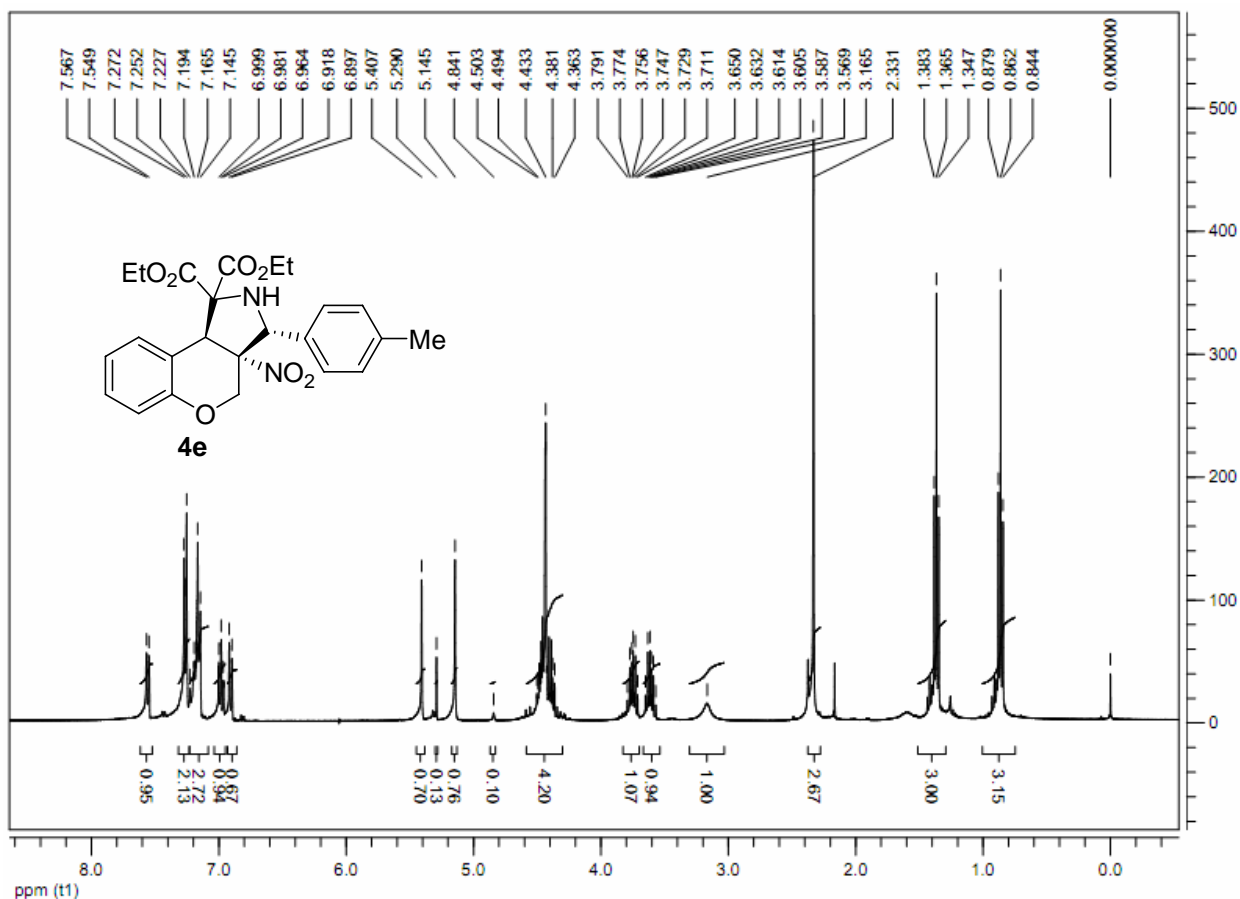
Diethyl 3-(4-bromophenyl)-3a-nitrobenzopyrano[3,4-c]-pyrrolidine-1,1-dicarboxylate (4c):



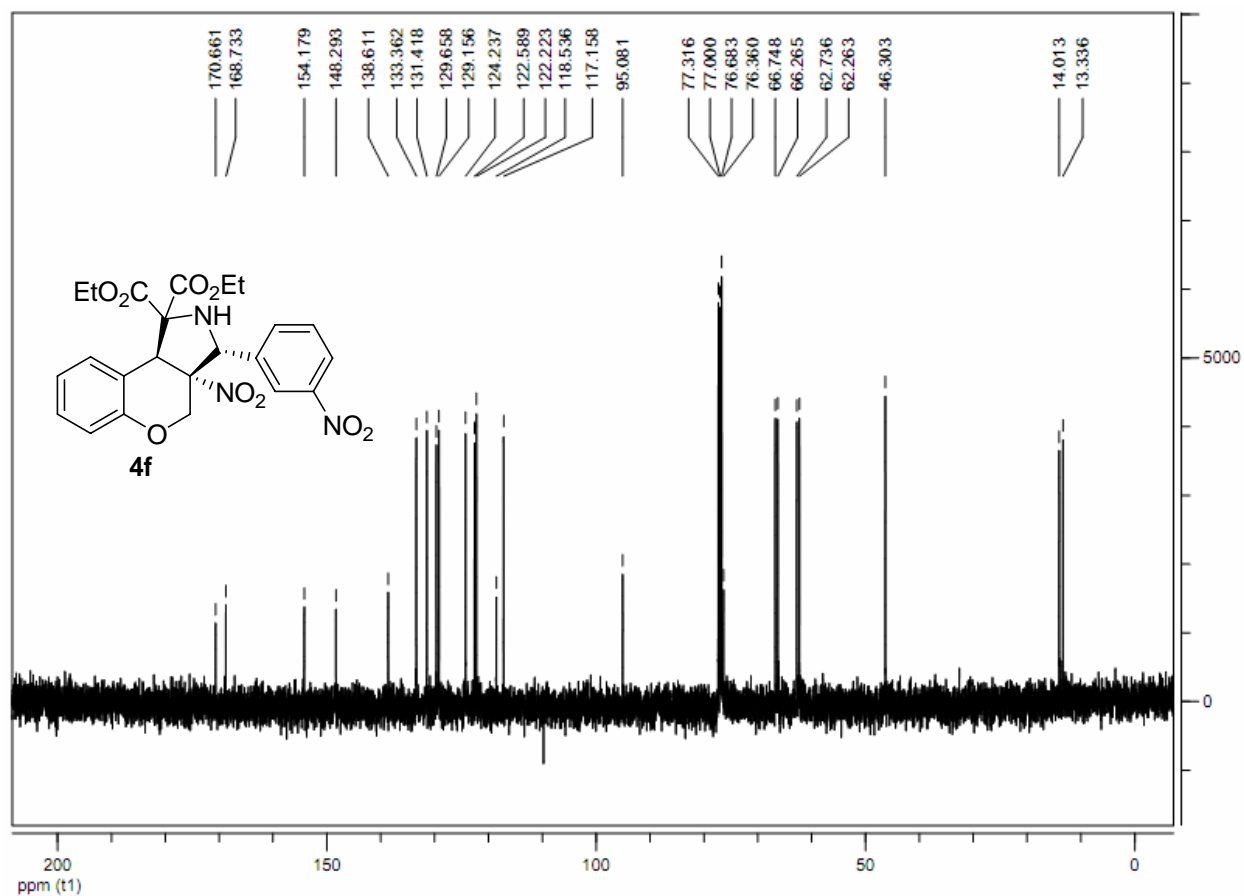
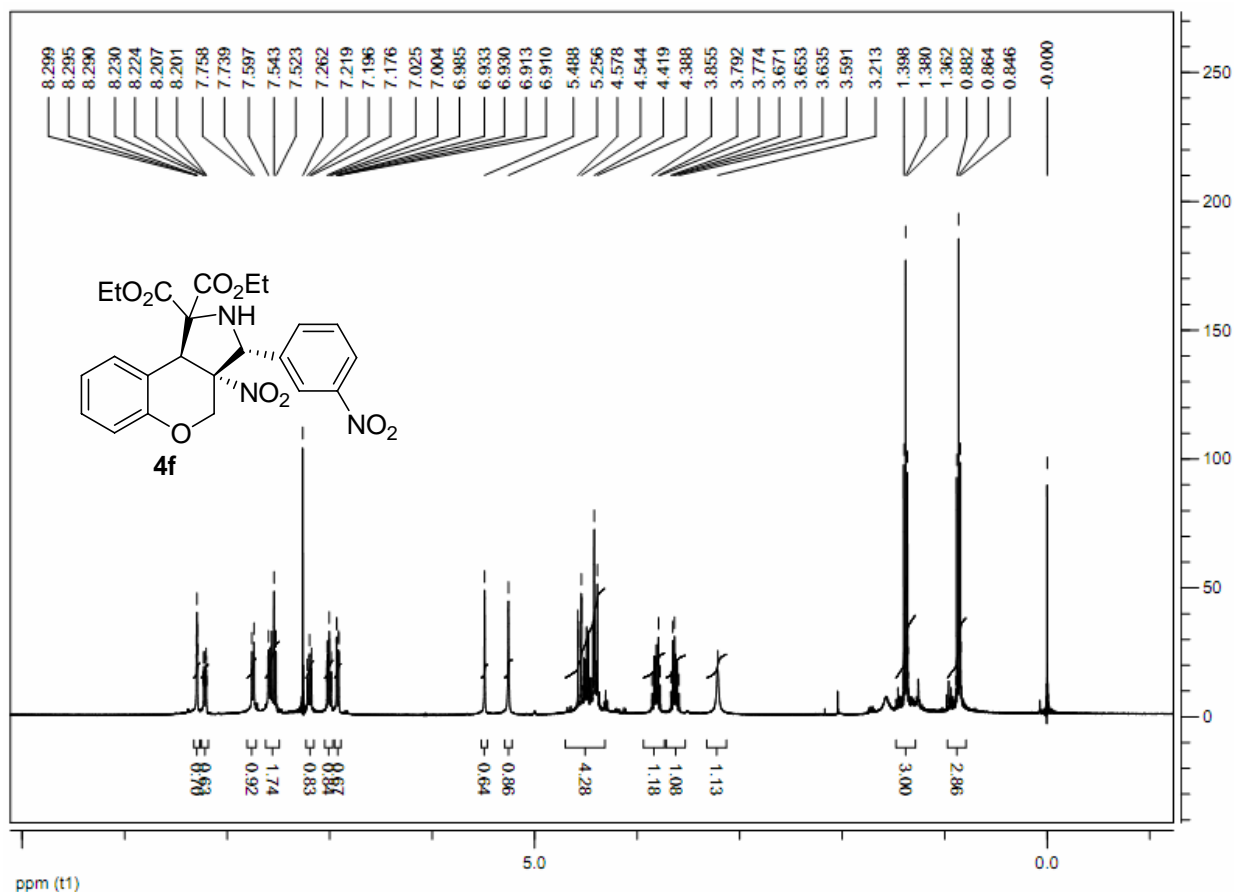
Diethyl 3-(4-nitrophenyl)-3a-nitrobenzopyrano[3,4-c]-pyrrolidine-1,1-dicarboxylate (4d) :



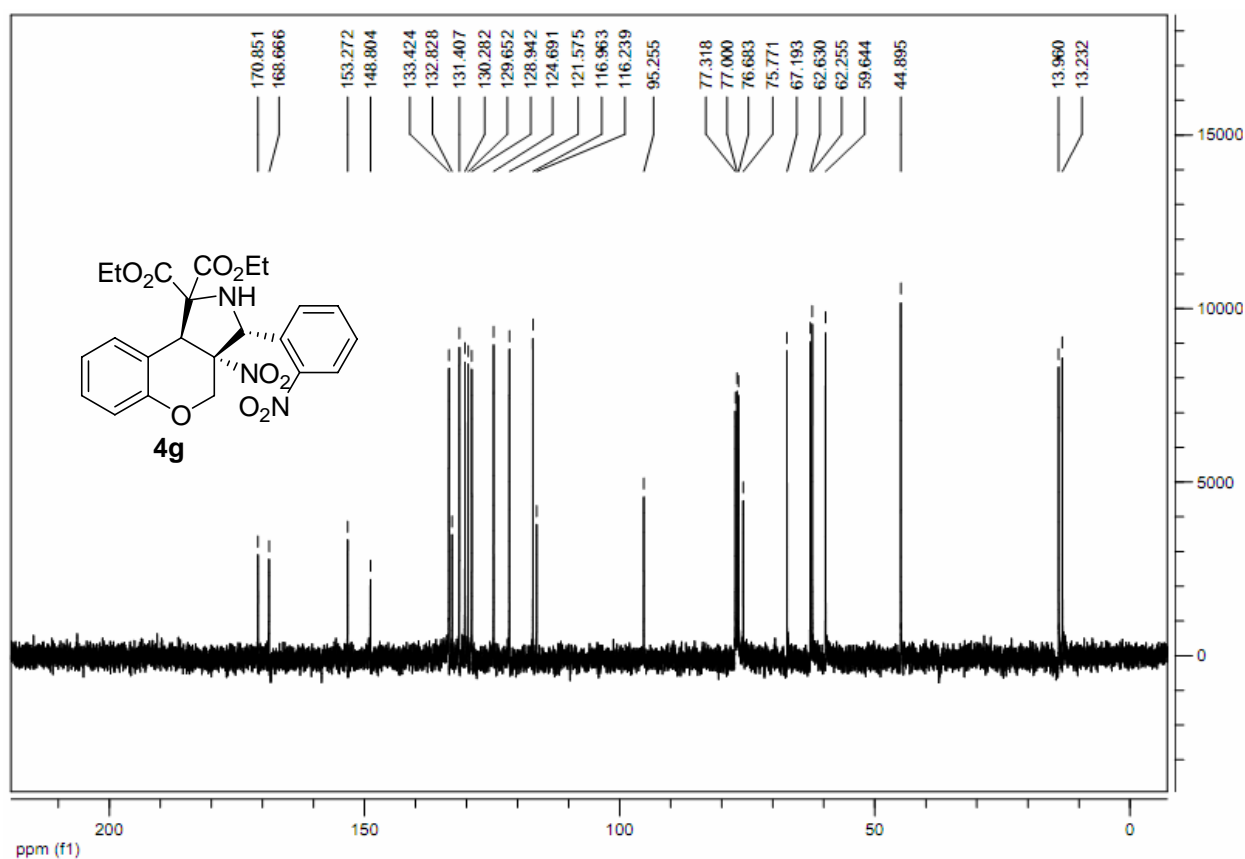
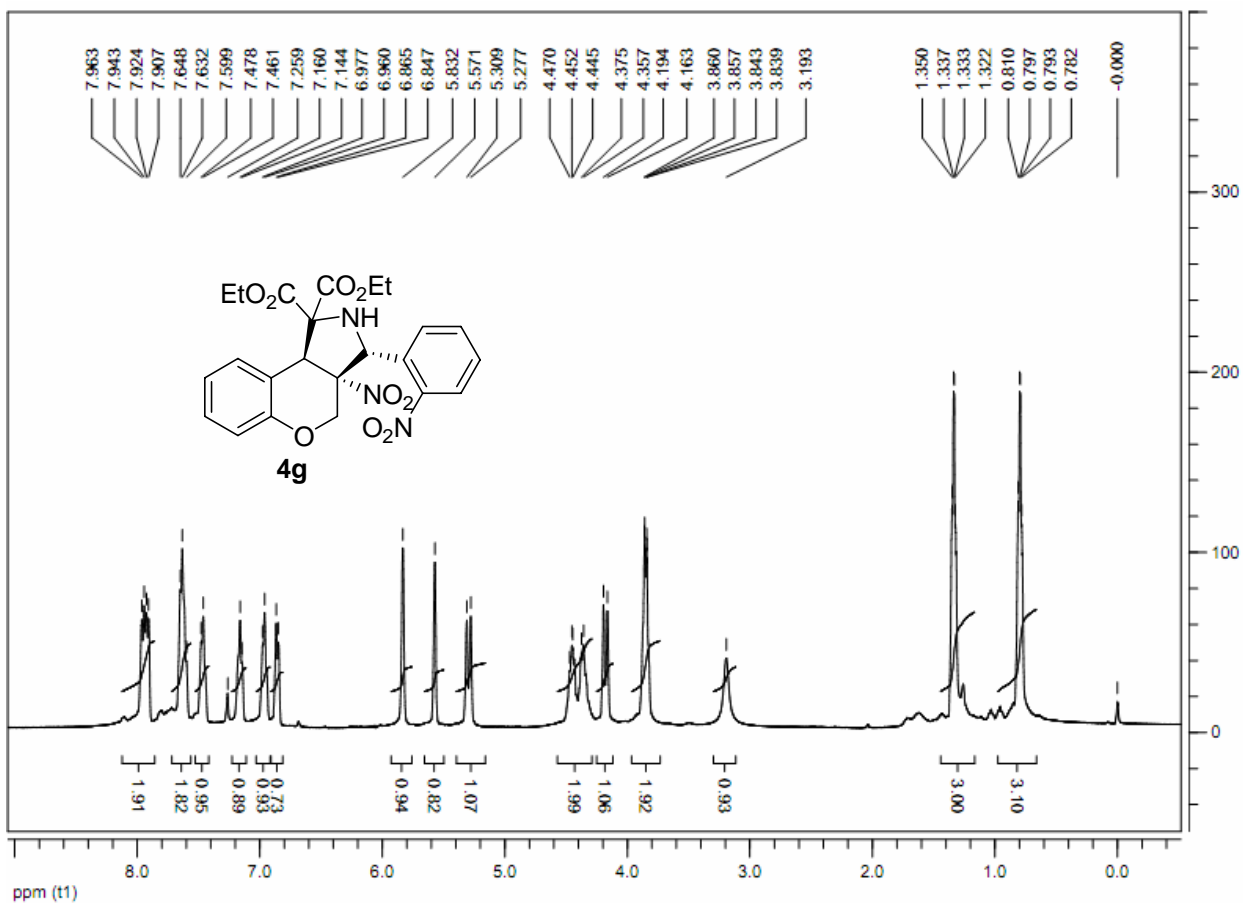
Diethyl 3-(4-methylphenyl)-3a-nitrobenzopyrano[3,4-c]-pyrrolidine-1,1-dicarboxylate (4e) :



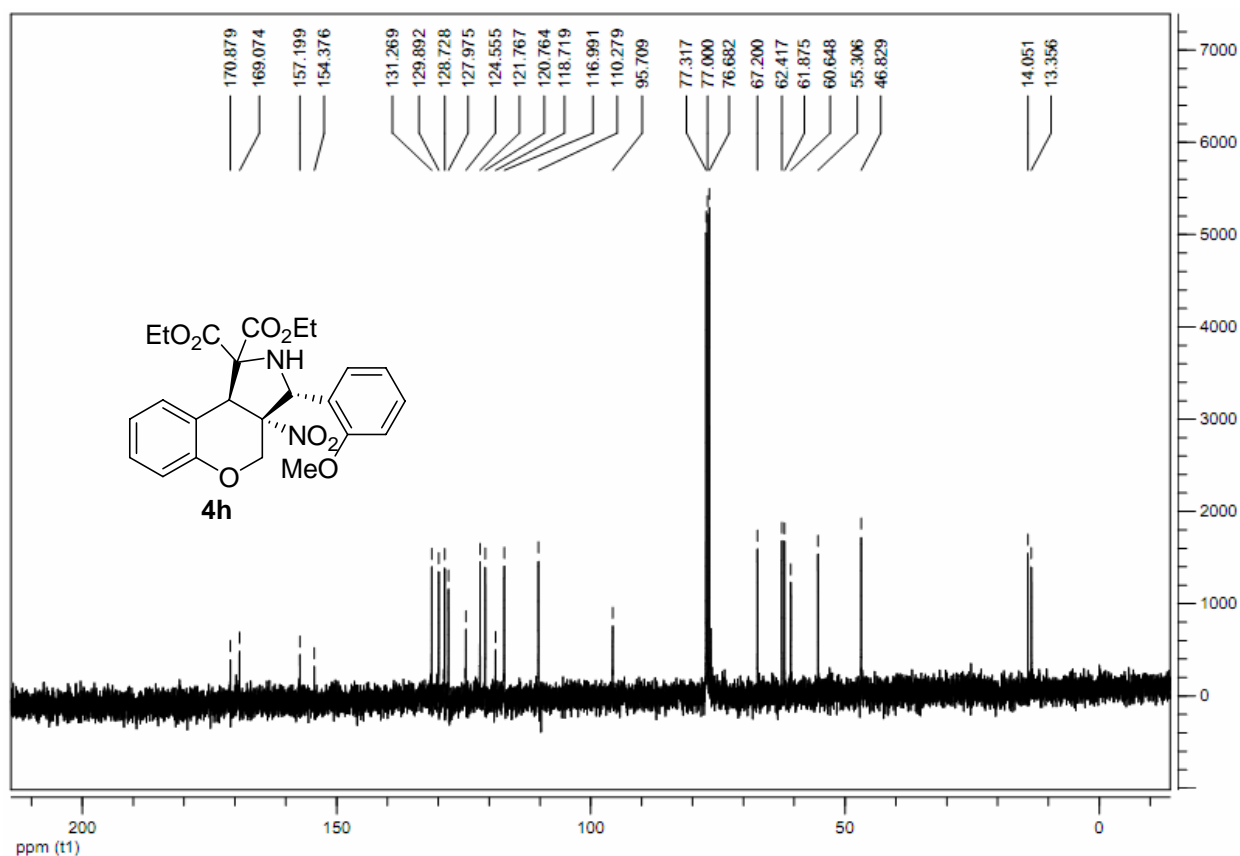
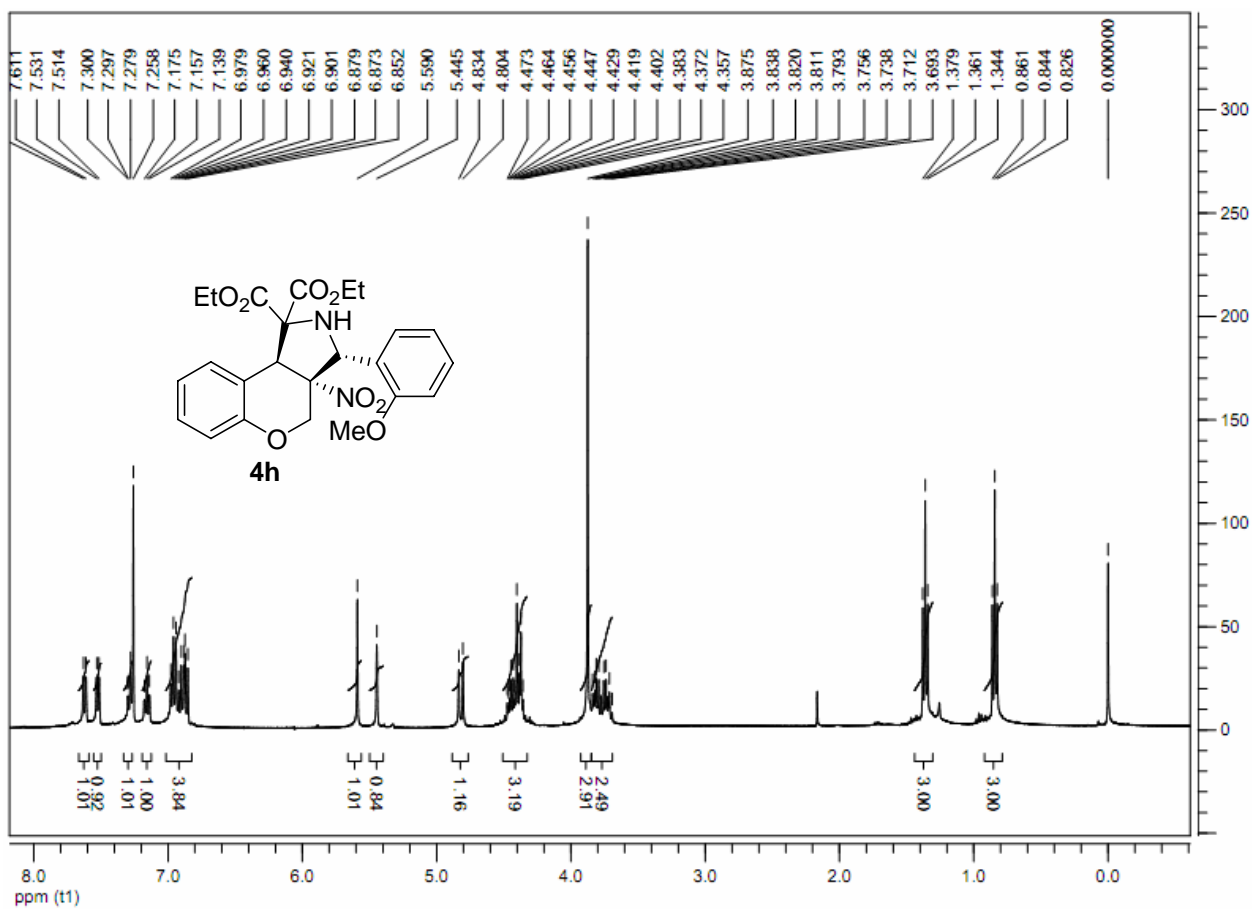
Diethyl 3-(3-nitrophenyl)-3a-nitrobenzopyrano[3,4-c]-pyrrolidine-1,1-dicarboxylate (4f):



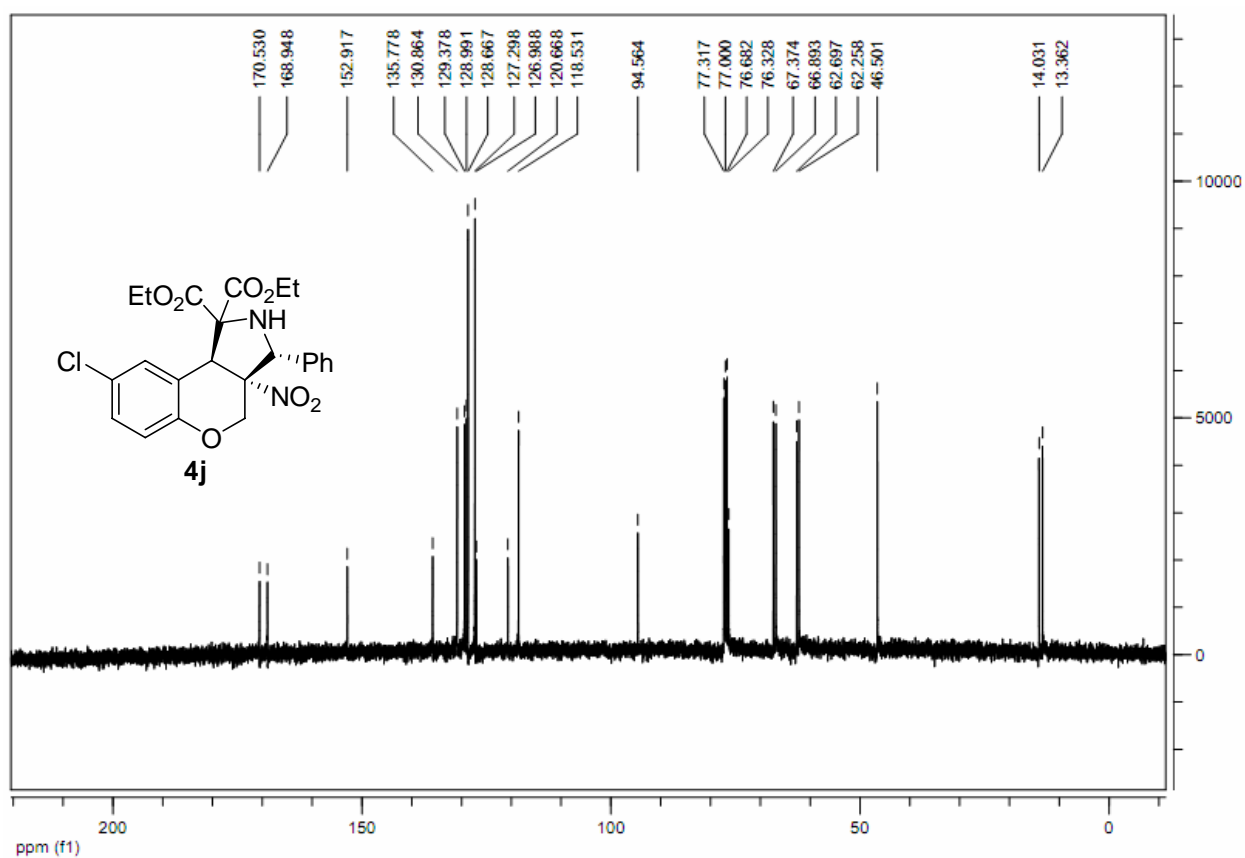
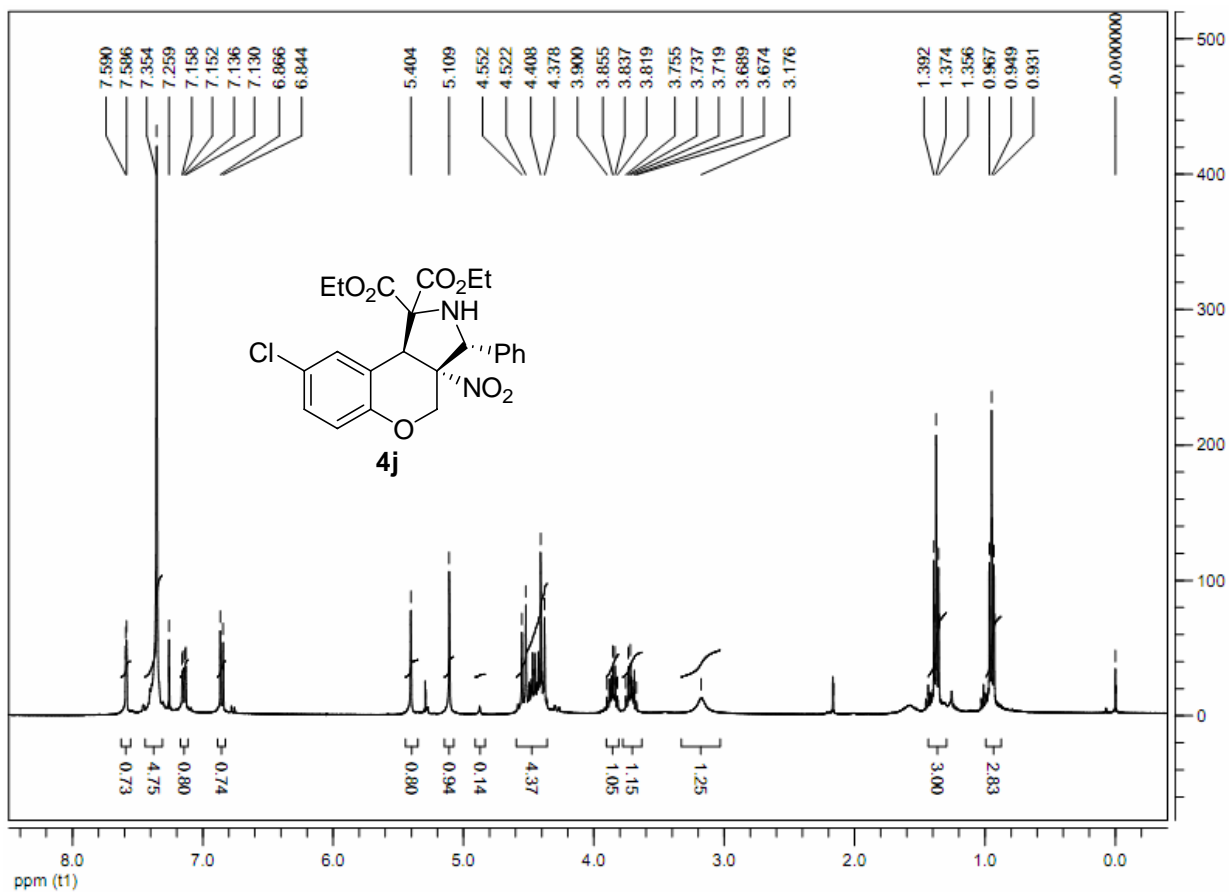
Diethyl 3-(2-nitrophenyl)-3a-nitrobenzopyrano[3,4-c]-pyrrolidine-1,1-dicarboxylate (4g) :



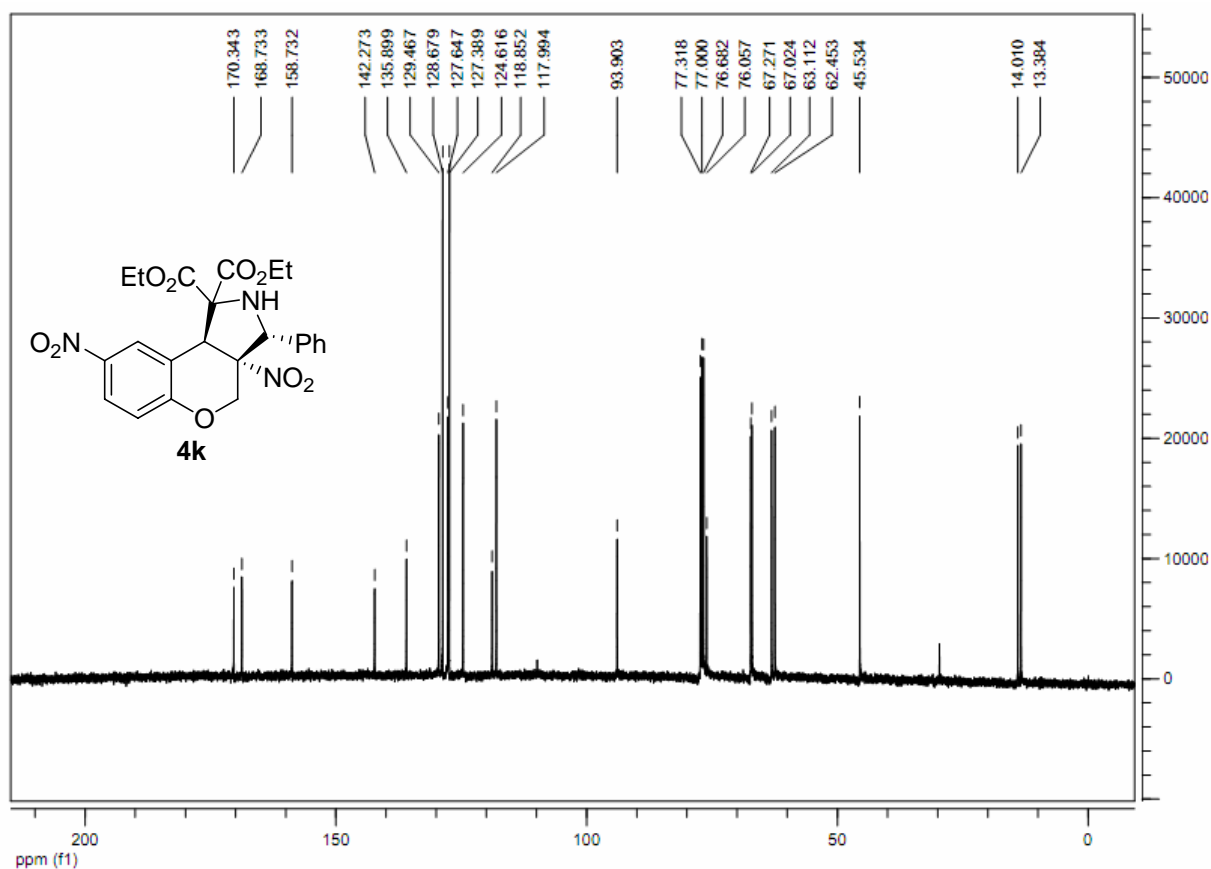
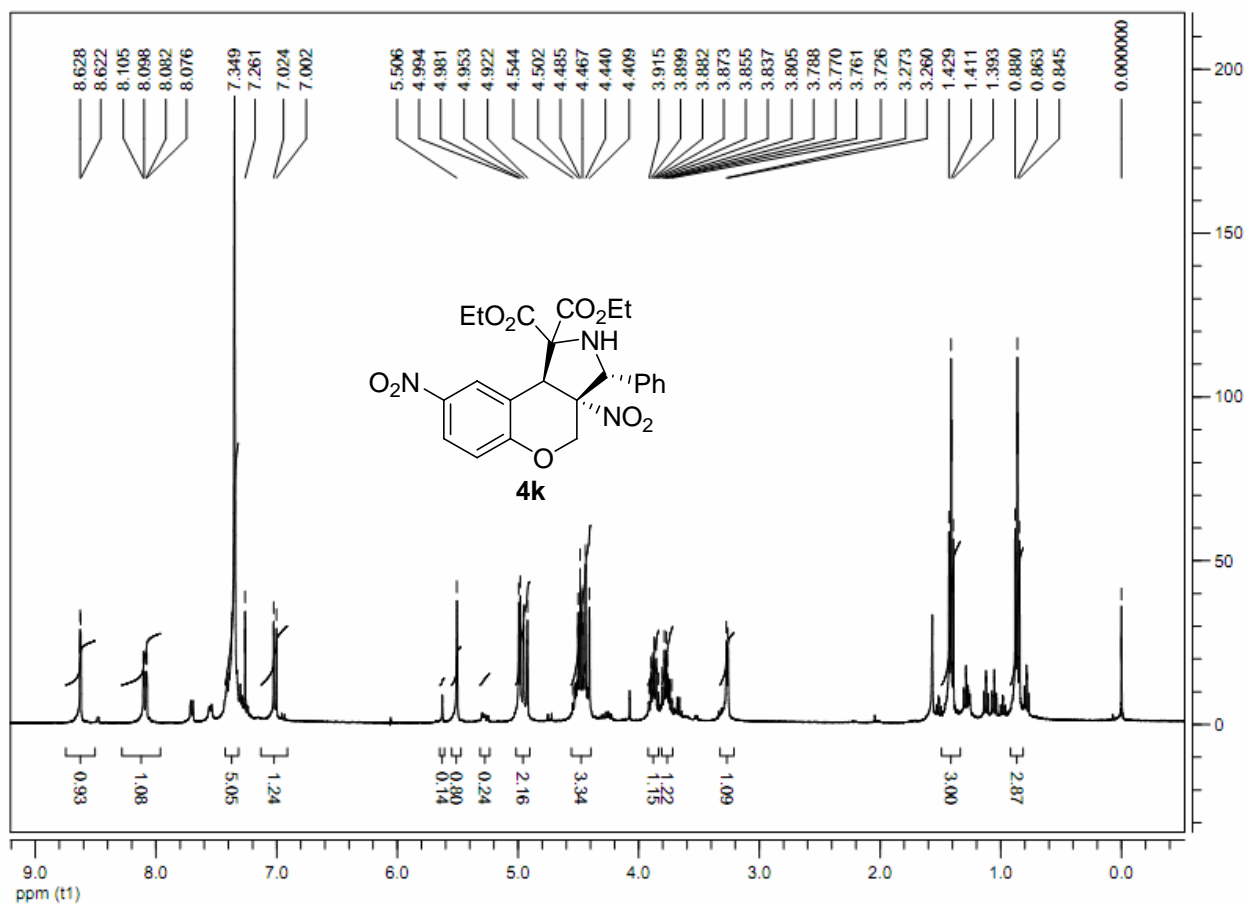
Diethyl 3-(2-methoxyphenyl)-3a-nitrobenzopyrano[3,4-c]-pyrrolidine-1,1-dicarboxylate (4h):



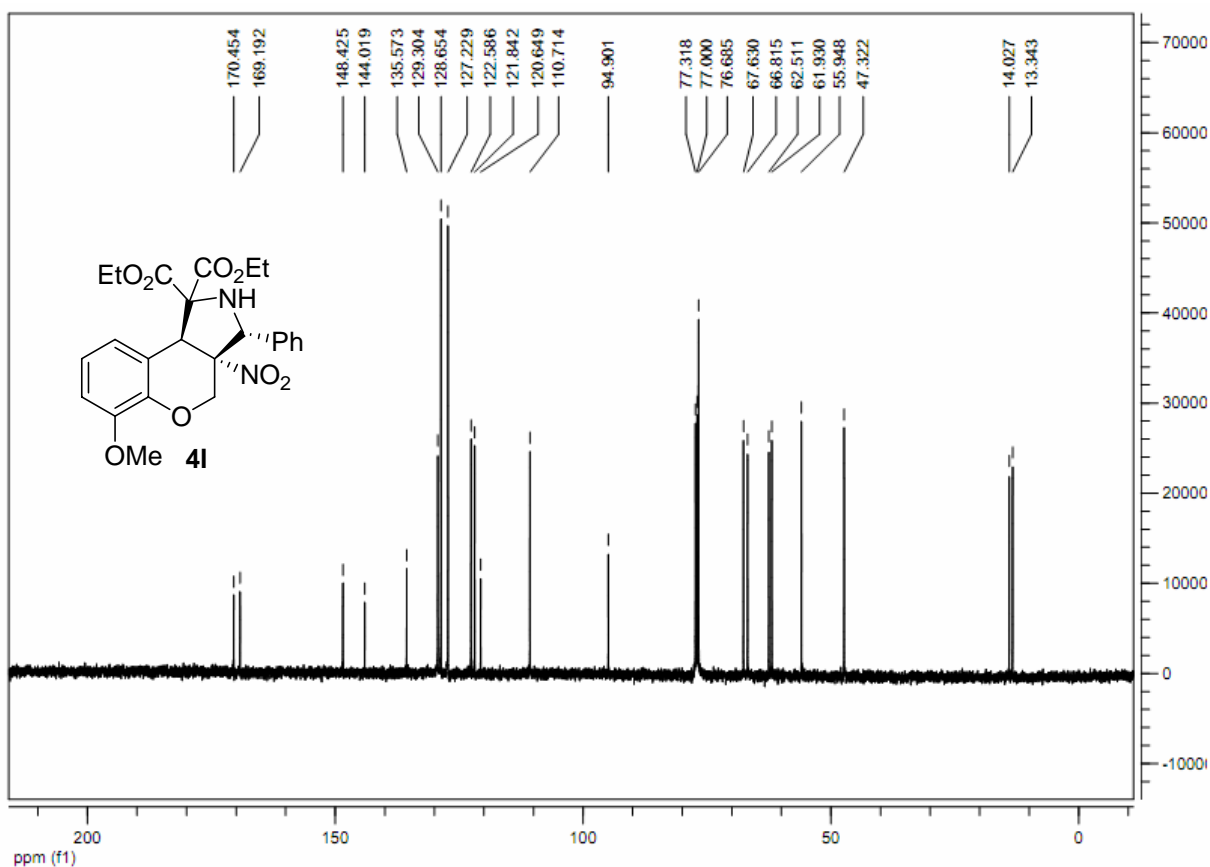
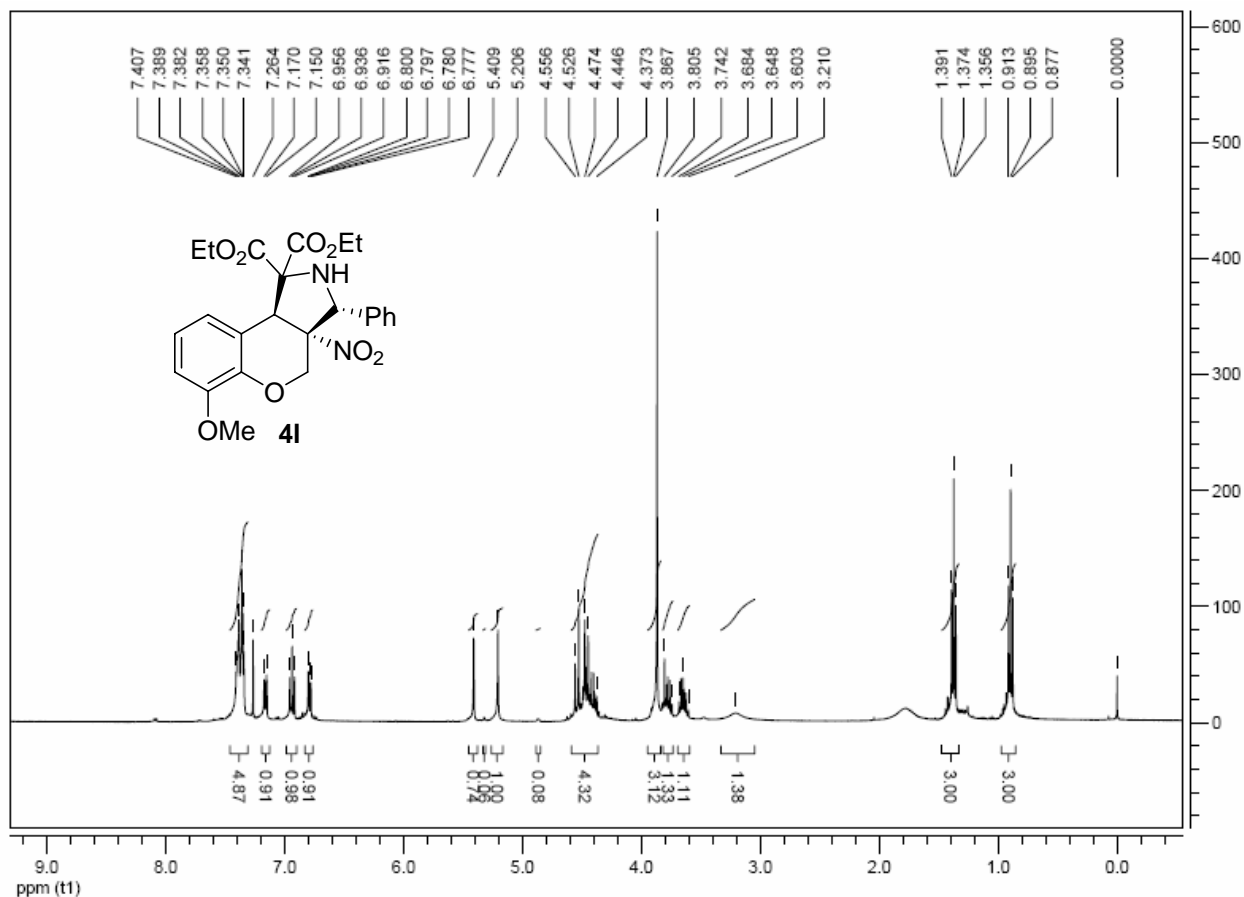
Diethyl 8-chloro-3-phenyl-3a-nitrobenzopyrano[3,4-c]-pyrrolidine-1,1-dicarboxylate (4j):



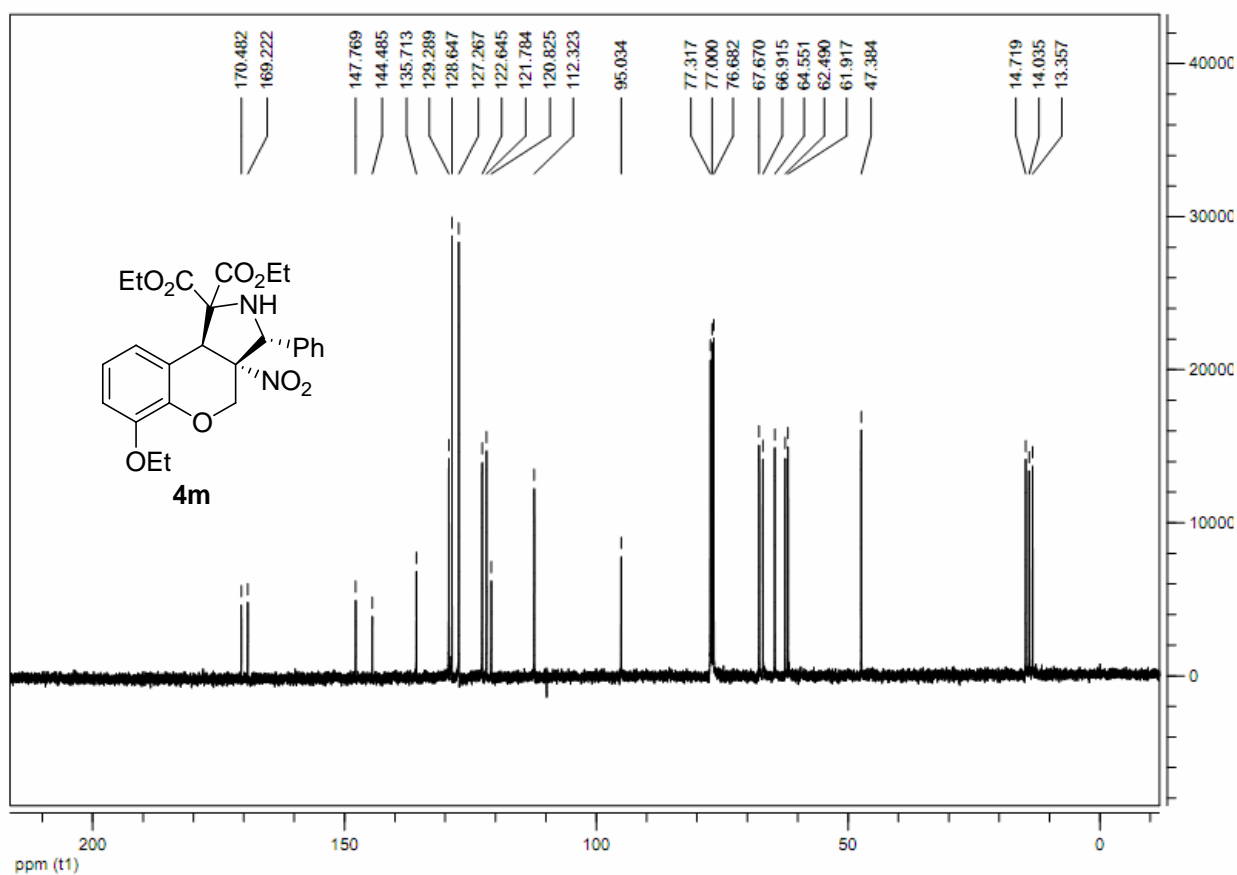
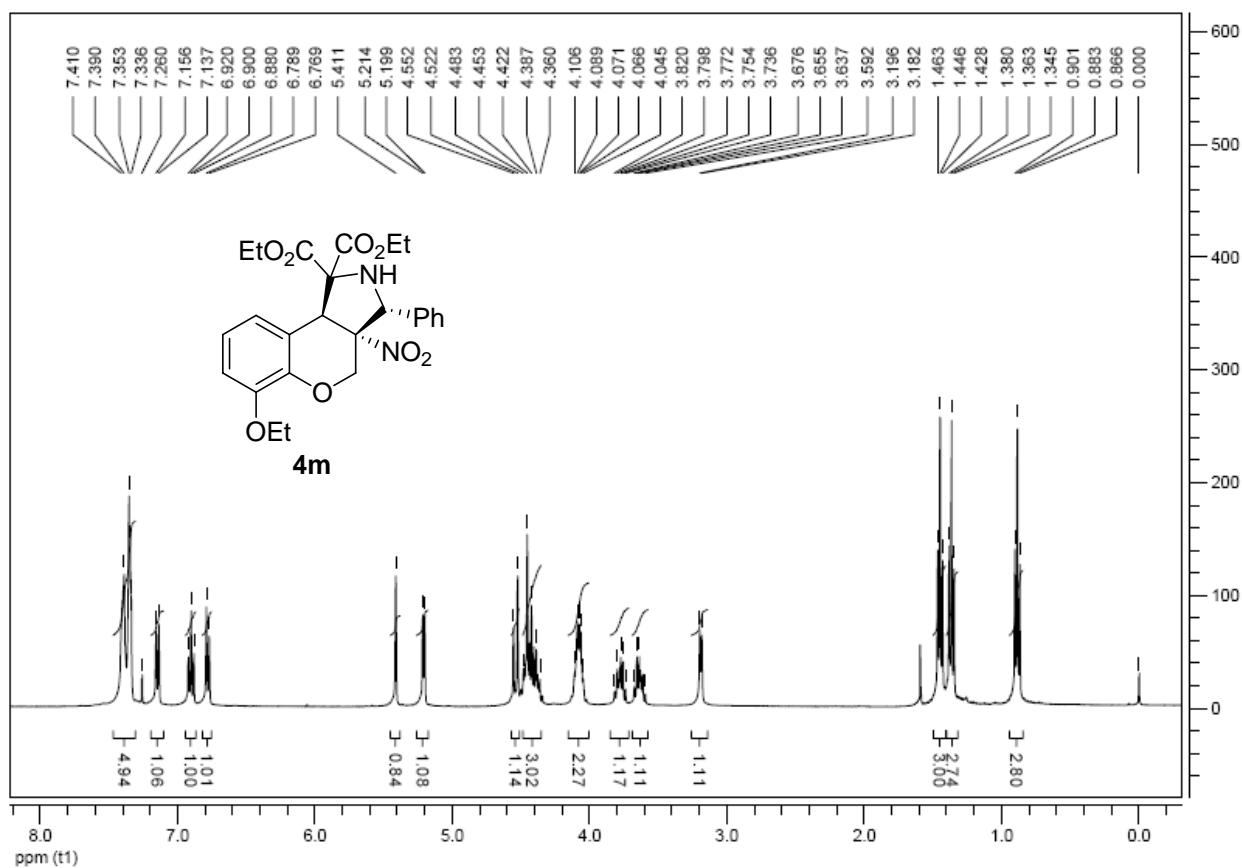
Diethyl 8-nitro-3-phenyl-3a-nitrobenzopyrano[3,4-c]-pyrrolidine-1,1-dicarboxylate (4k):



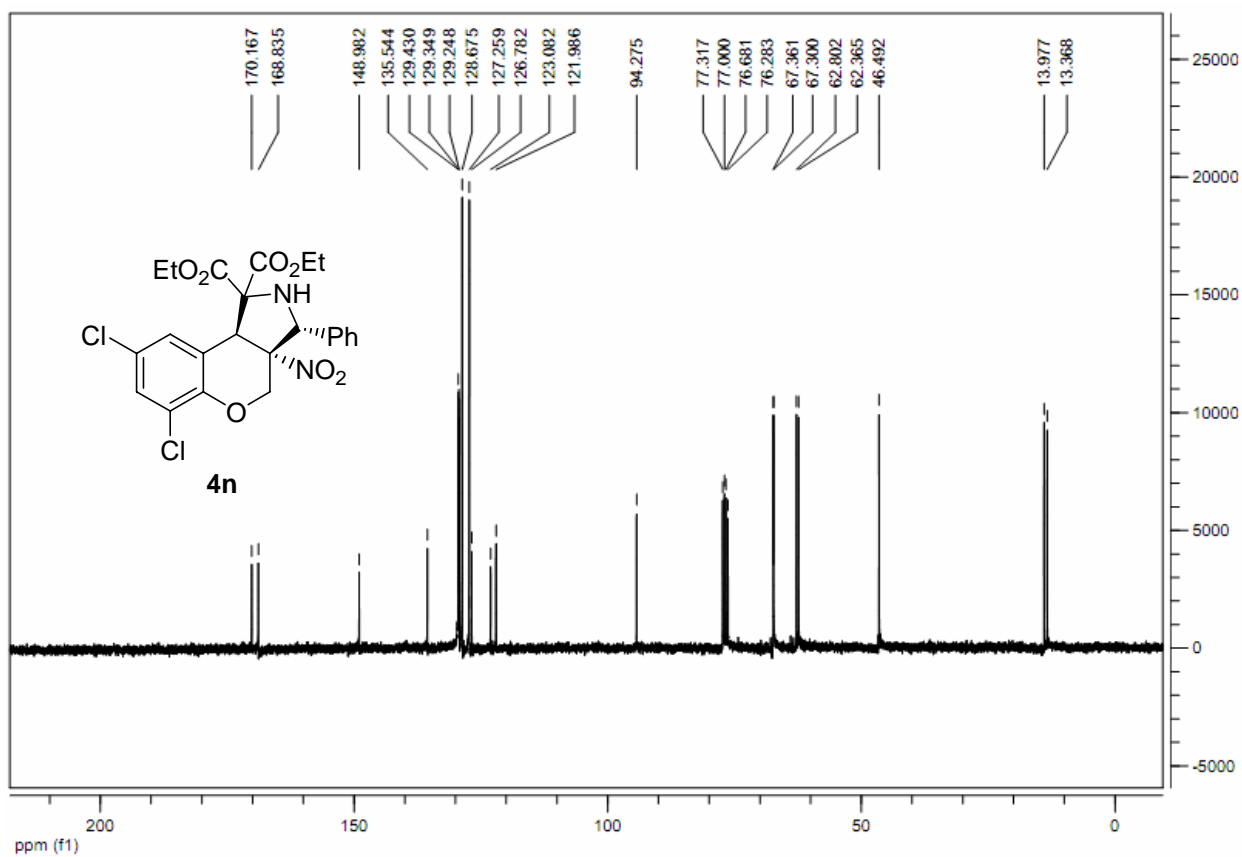
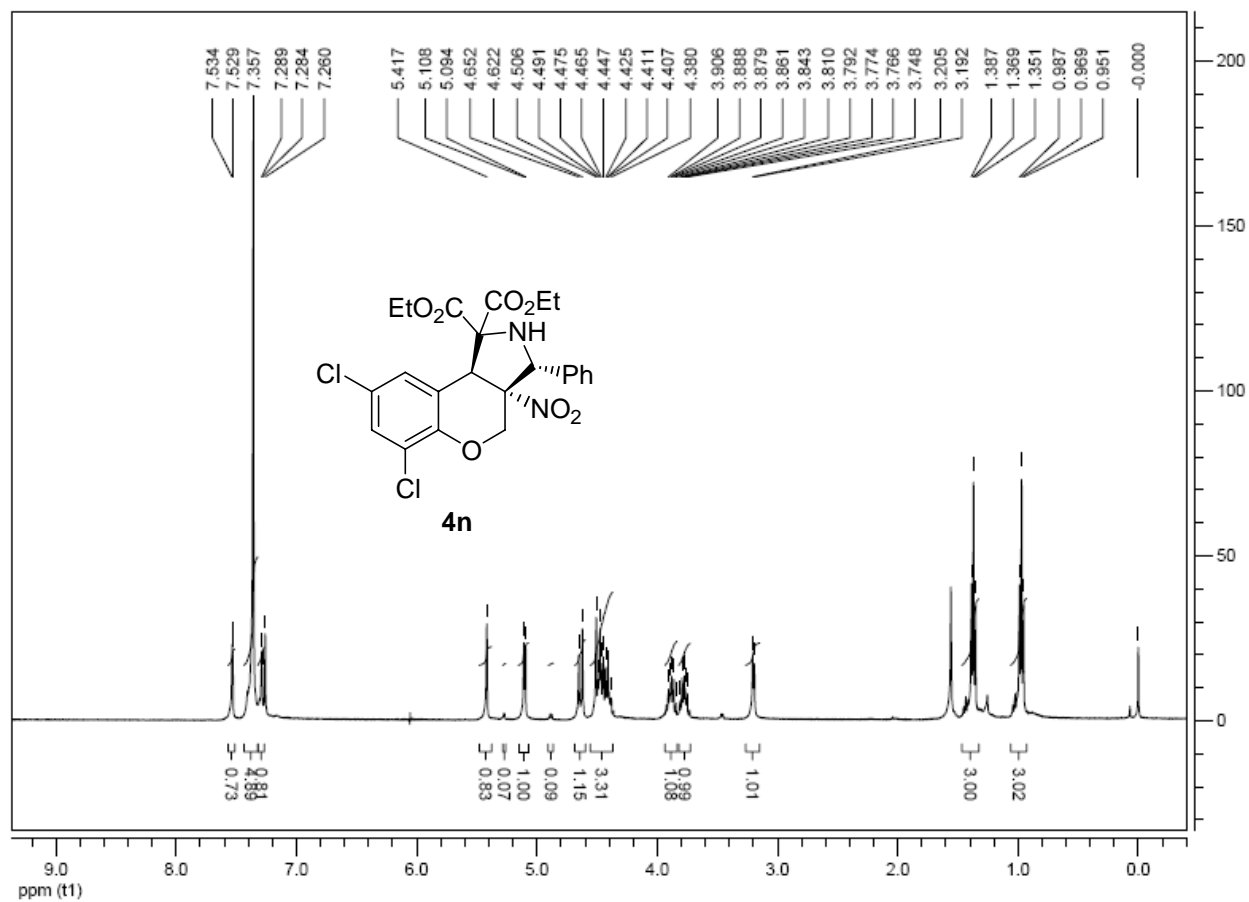
Diethyl 6-methoxy-3-phenyl-3a-nitrobenzopyrano[3,4-c]-pyrrolidine-1,1-dicarboxylate (4I).



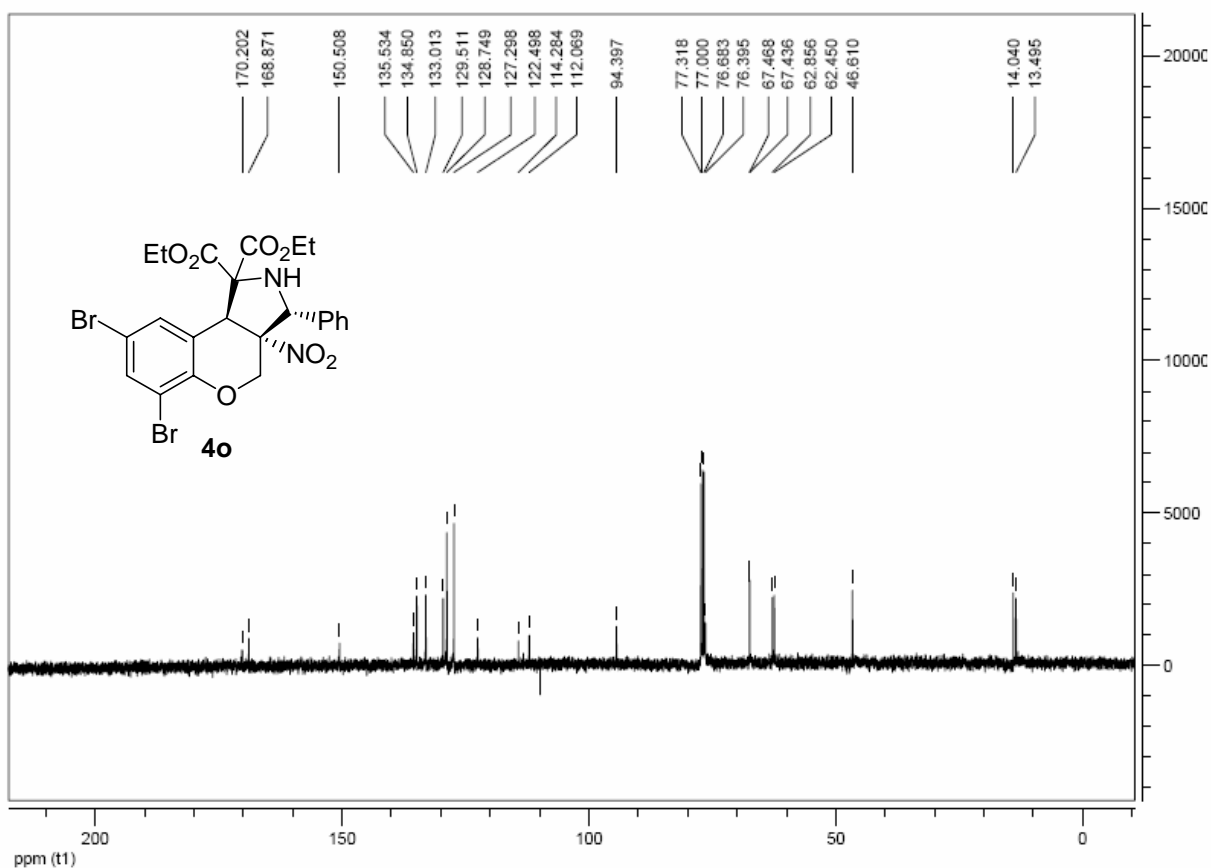
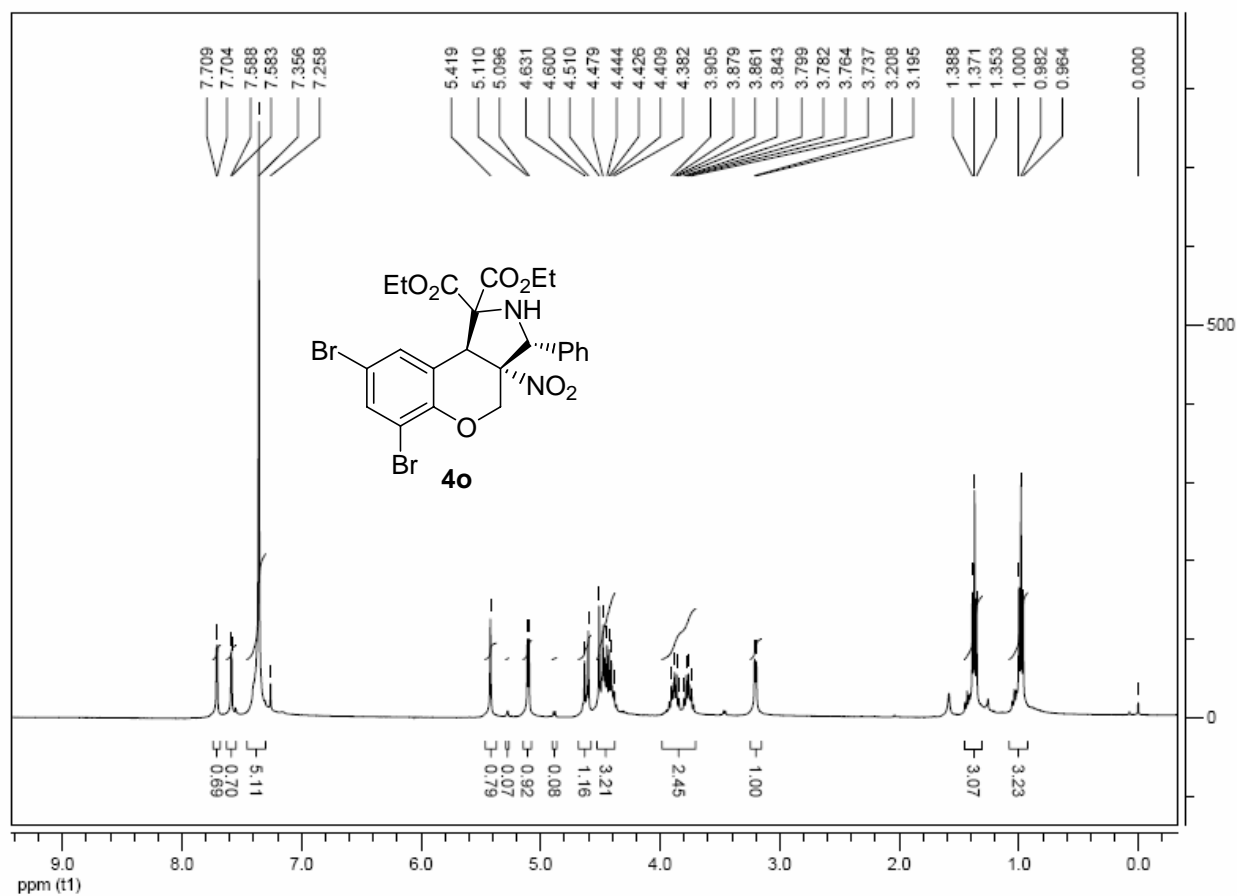
Diethyl 6-ethoxy-3-phenyl-3a-nitrobenzopyrano[3,4-c]-pyrrolidine-1,1-dicarboxylate (4m).



Diethyl 6,8-dichloro-3-phenyl-3a-nitrobenzopyrano[3,4-c]-pyrrolidine-1,1-dicarboxylate (4n).



Diethyl 6,8-dibromo-3-phenyl-3a-nitrobenzopyrano[3,4-c]-pyrrolidine-1,1-dicarboxylate (4o).



Diethyl 3,4-diphenyl-3a-nitrobenzopyrano[3,4-c]-pyrrolidine -1,1-dicarboxylate (4p).

