

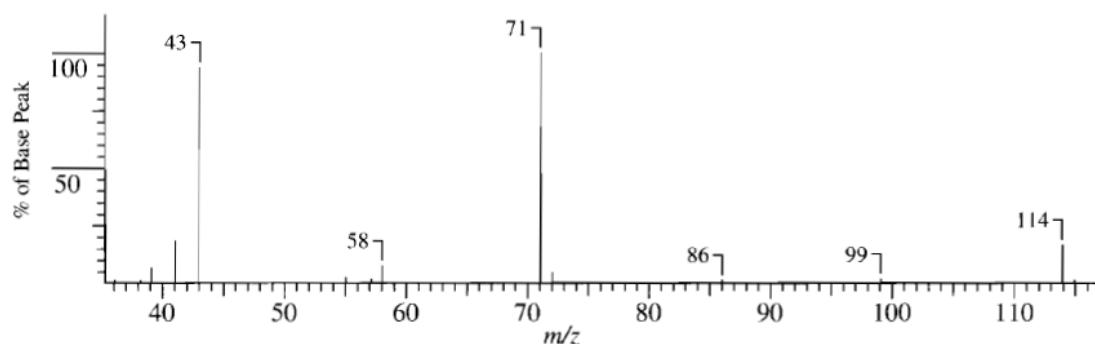
Méthodes physico-chimiques d'analyse
TD N°5 : Identification Spectrométrique de quelques composés organiques

Exercice : Déterminer les formules développées des composés (A-I) dont la série spectrales (SM, ^{13}C /DEPT, IR, RMN ^1H) est donné, en répondant sur les questions suivantes :

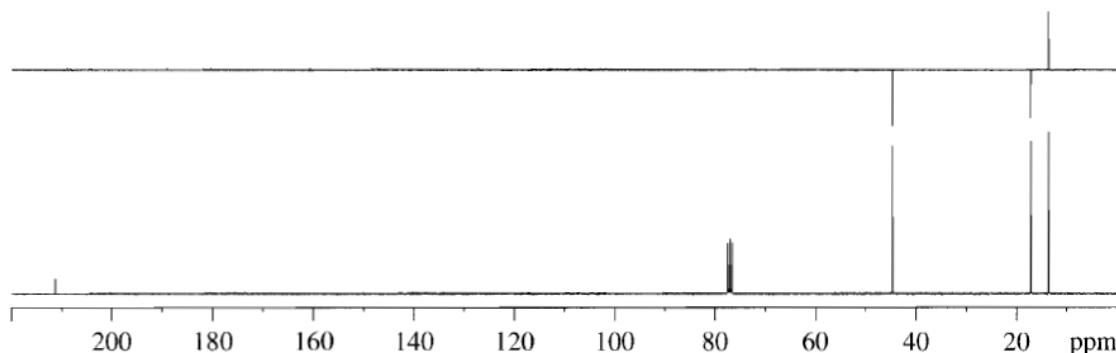
1. Calculer l'indice de déficience en hydrogène ?
 2. Indiquer le pic de l'ion moléculaire et le pic de base de chaque composé (Spectres IE) ?
 3. Attribuer les bandes représentatives dans le spectre IR ?
 4. Attribuer tous les protons dans le spectre RMN ^1H ? Expliquer la multiplicité ?
 5. Attribuer tous les carbones dans les spectres RMN ^{13}C / DEPT ?
- (Les spectres RMN ^1H et les spectres ^{13}C ont été enregistrés à 300 MHz et 75.5 MHz dans le CDCl_3 , respectivement)

Composé A ($\text{C}_7\text{H}_{14}\text{O}$)

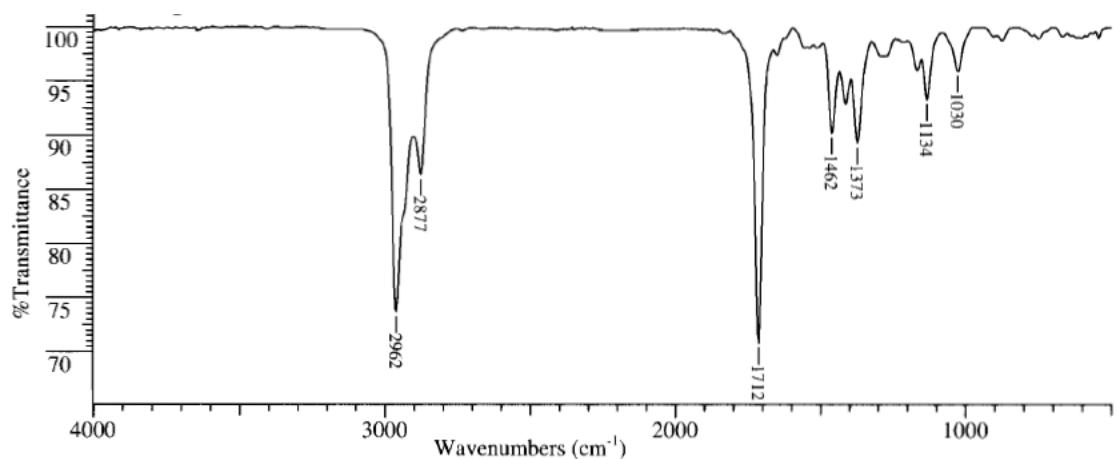
SM (IE)



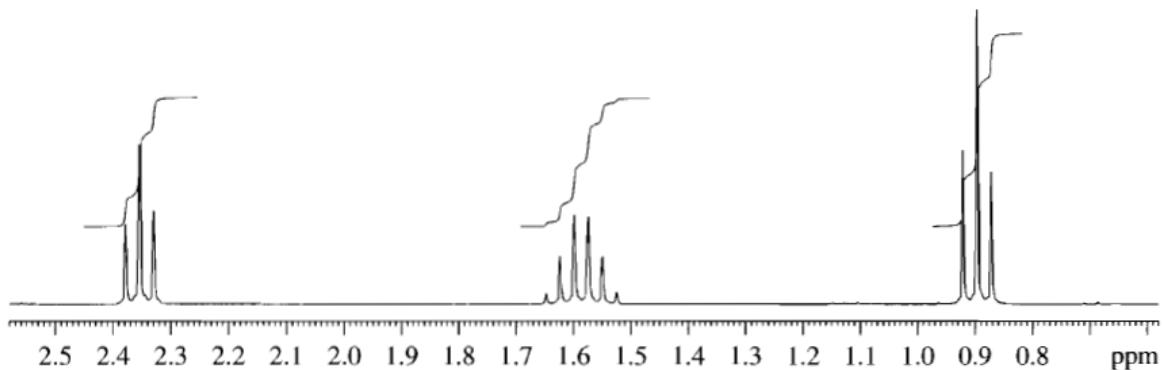
^{13}C /DEPT



IR

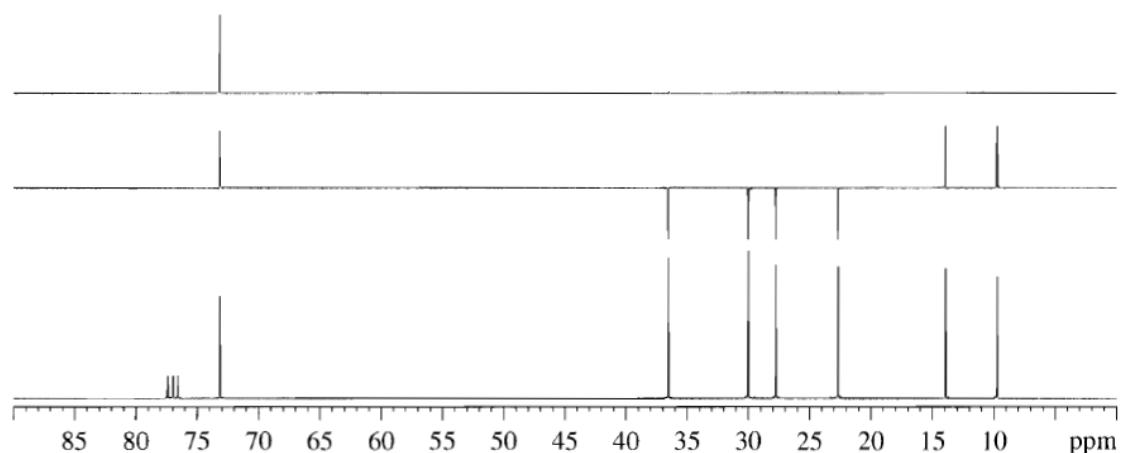


RMN¹H



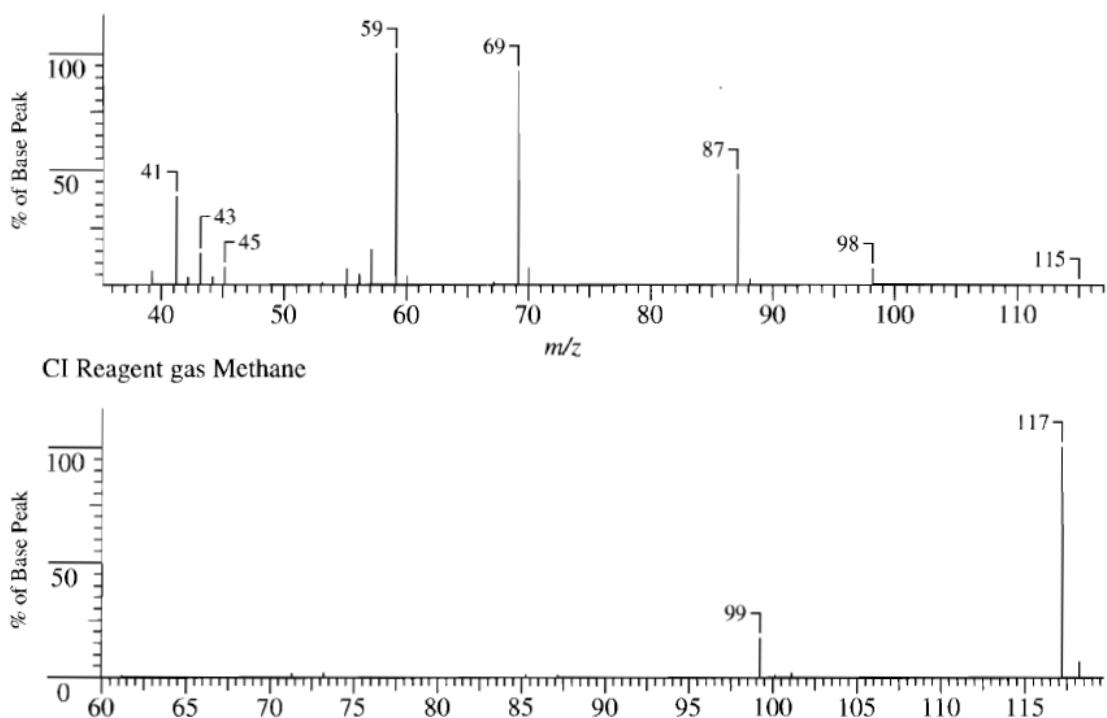
Composé B ($\text{C}_7\text{H}_{16}\text{O}$)

¹³C/DEPT

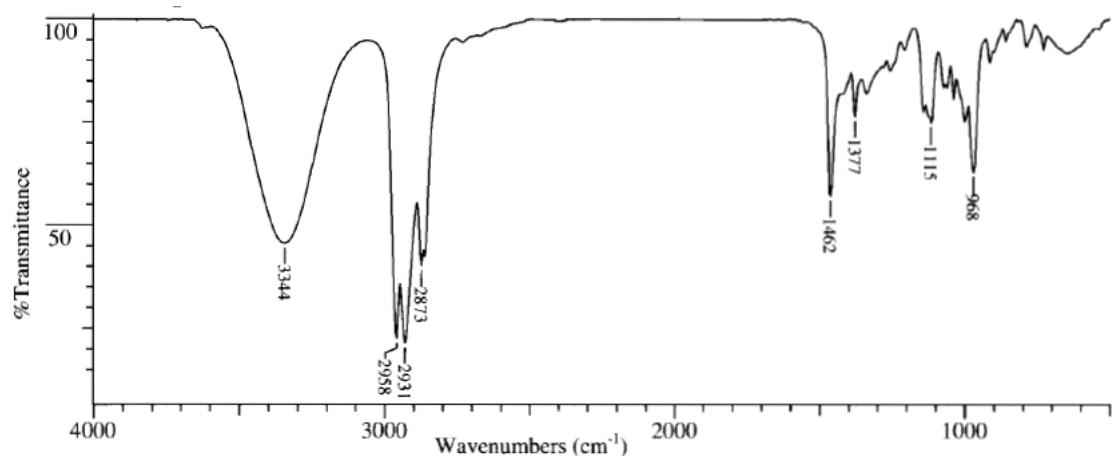


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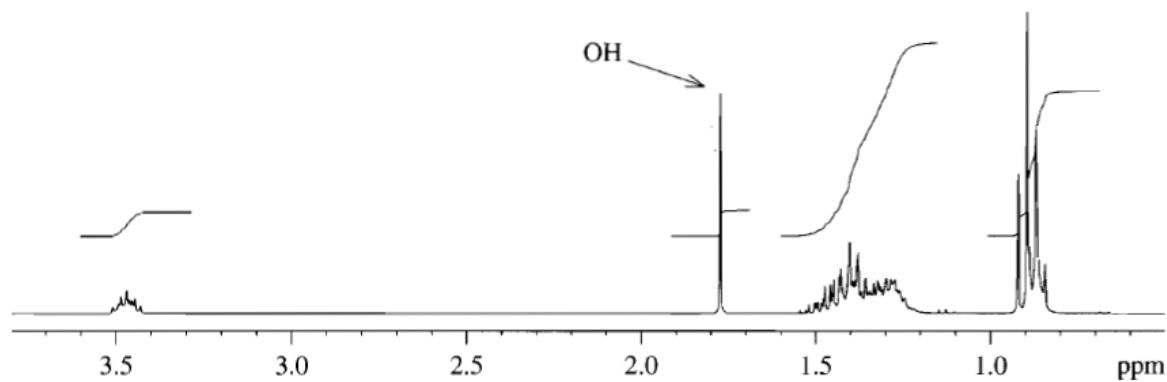
SM (IE et IC)



IR

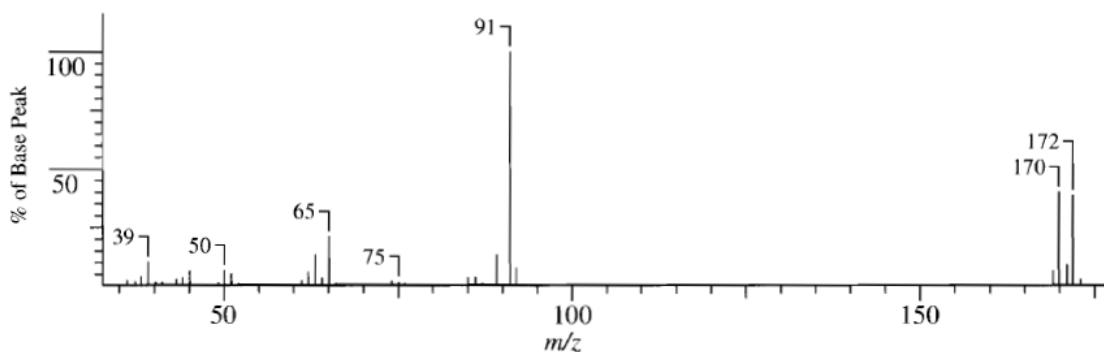


RMN¹H

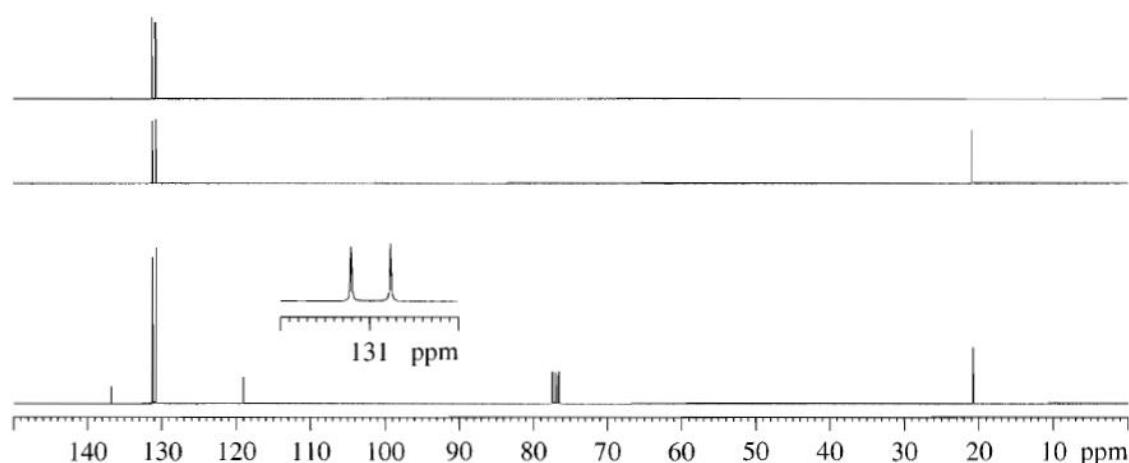


Composé C (C₇H₇Br)

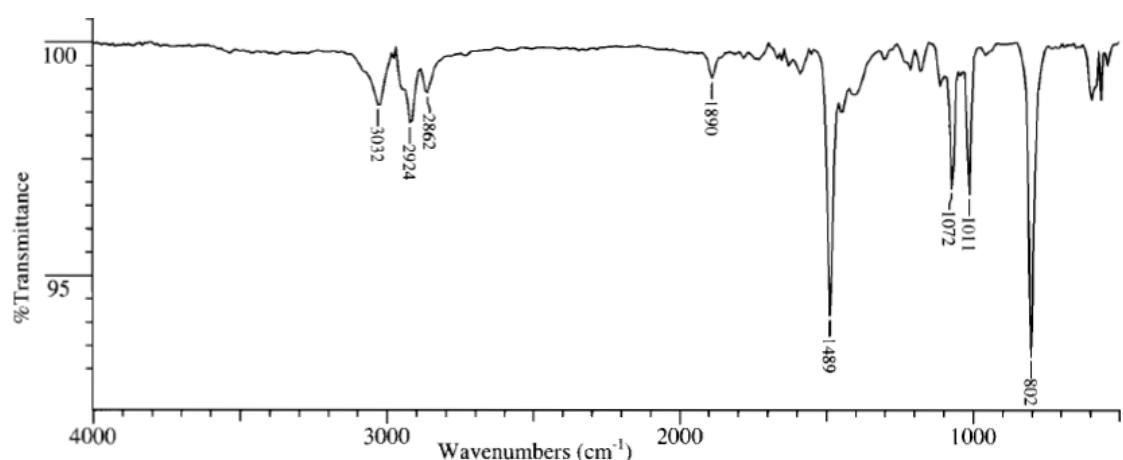
SM (IE)



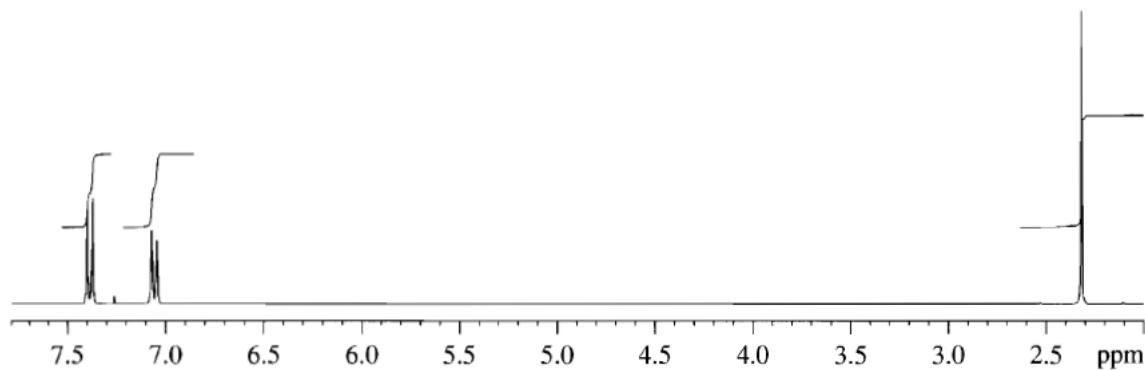
¹³C/DEPT



IR

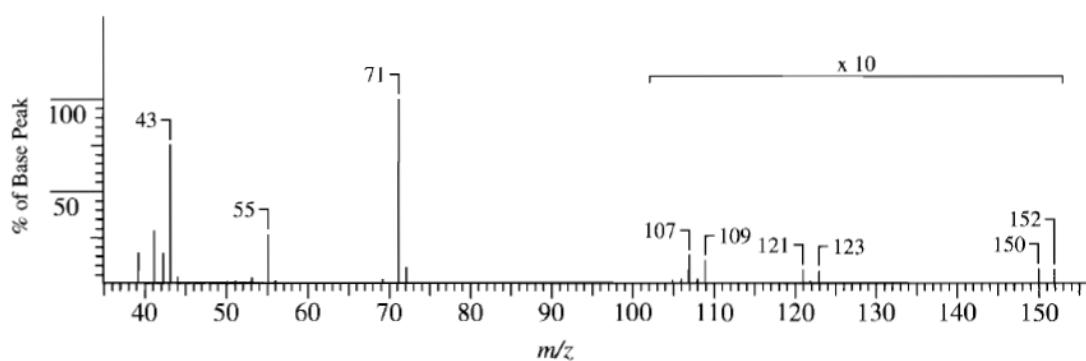


RMN¹H



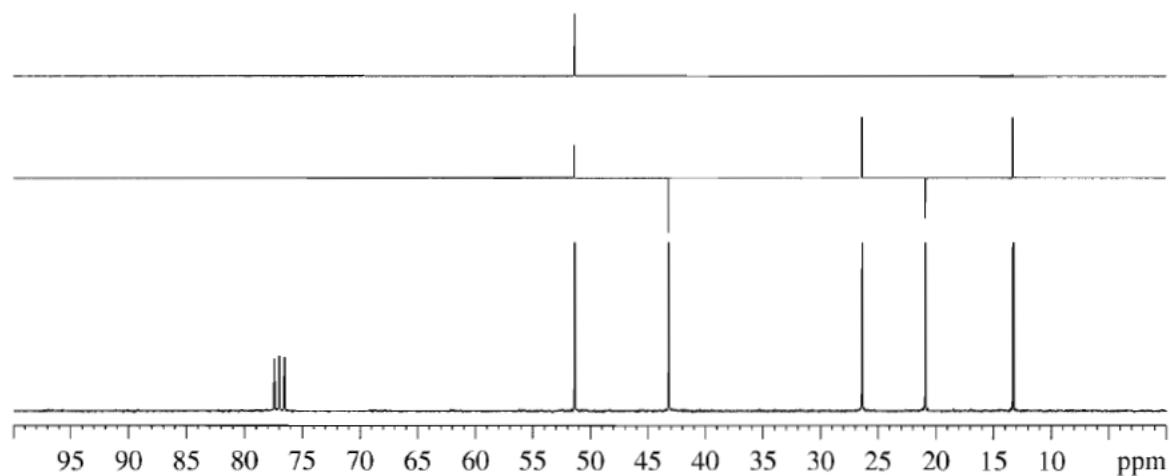
Composé D ($\text{C}_5\text{H}_{11}\text{Br}$)

SM (IE)

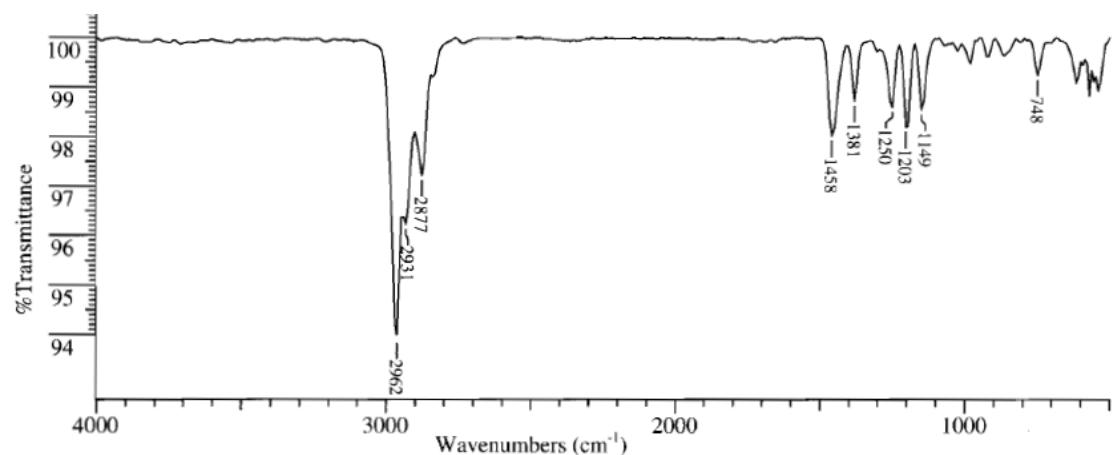


5

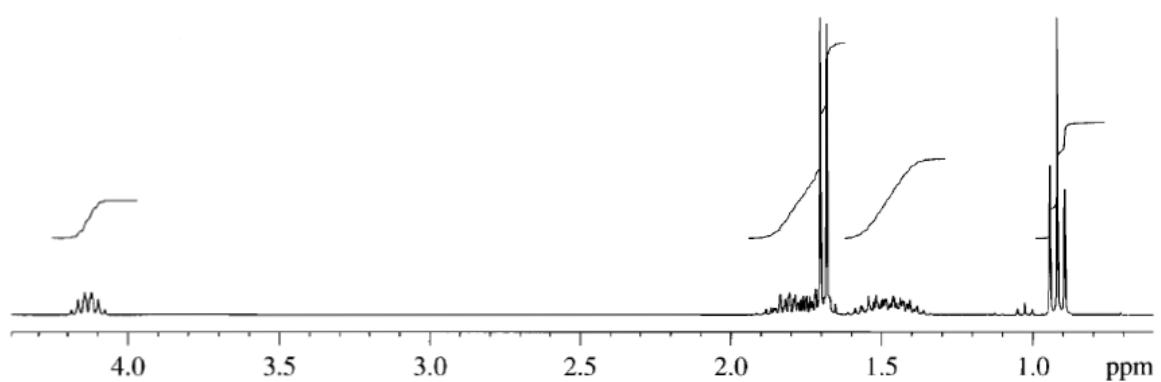
¹³C/DEPT



IR

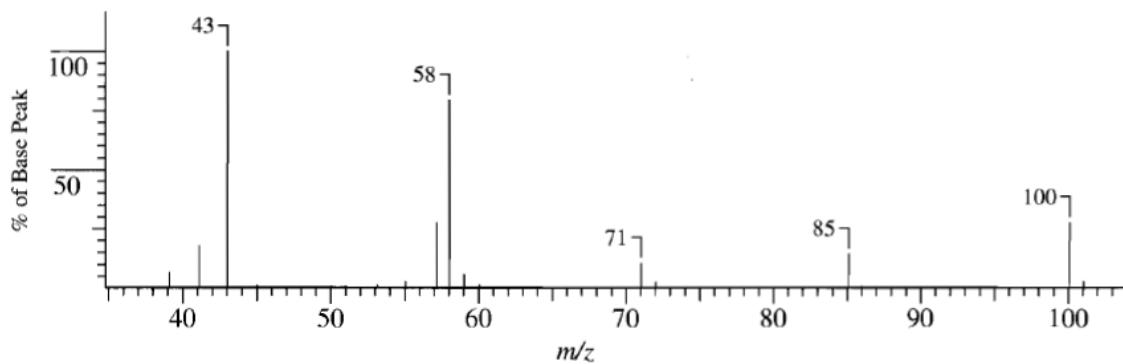


RMN¹H

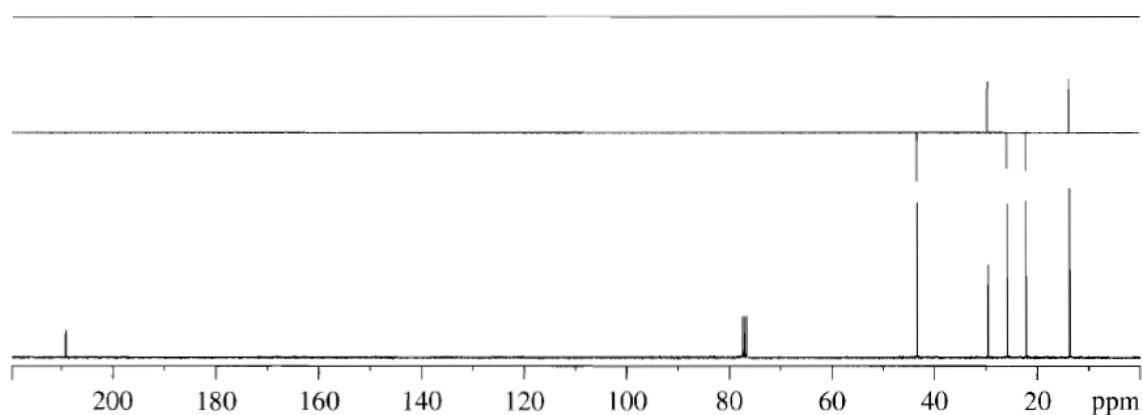


Composé E ($C_6H_{12}O$)

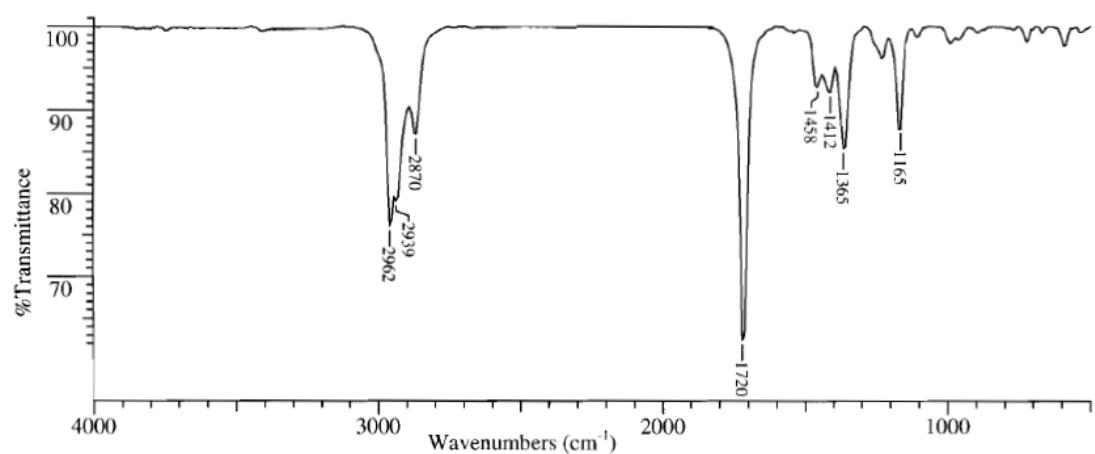
SM (IE)



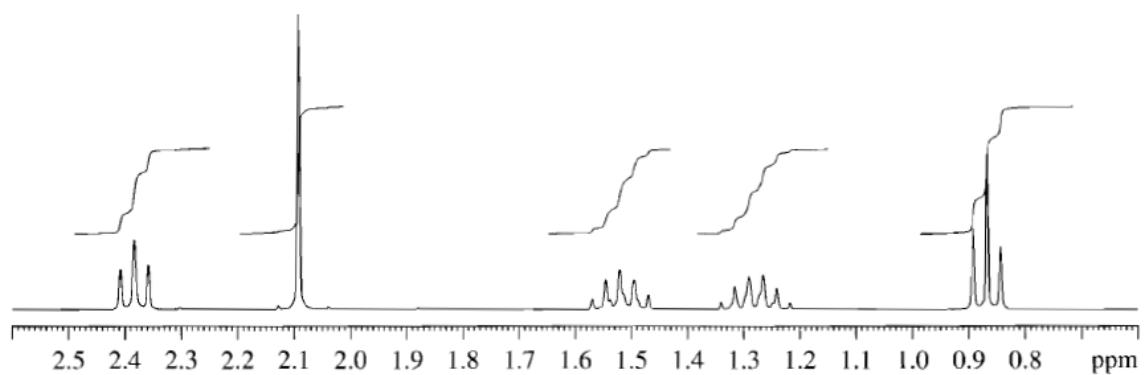
^{13}C /DEPT



IR

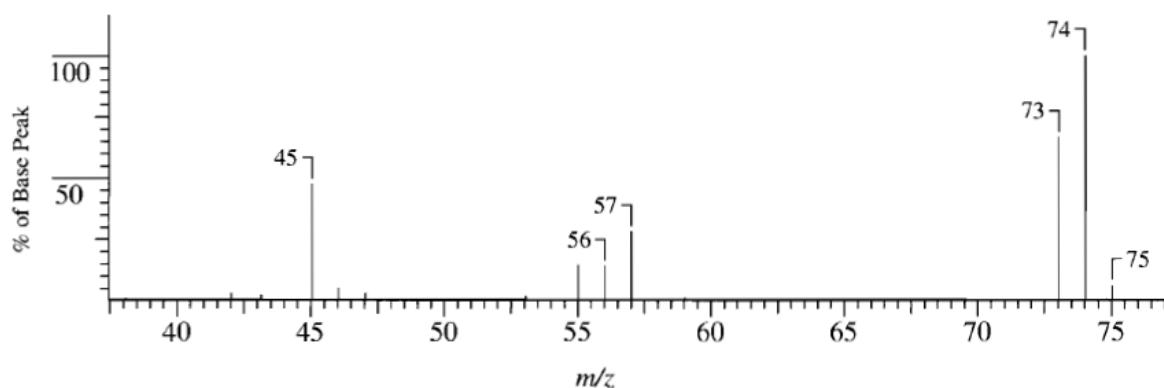


RMN¹H

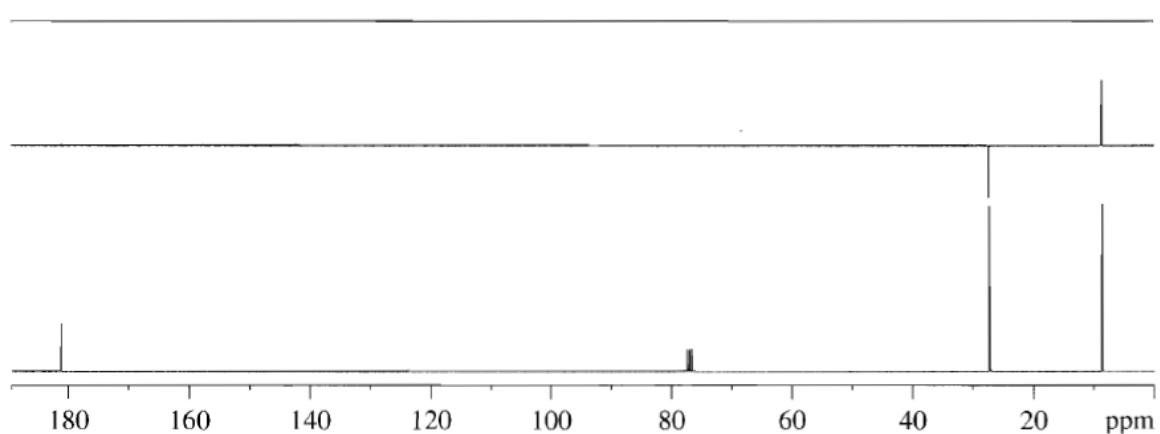


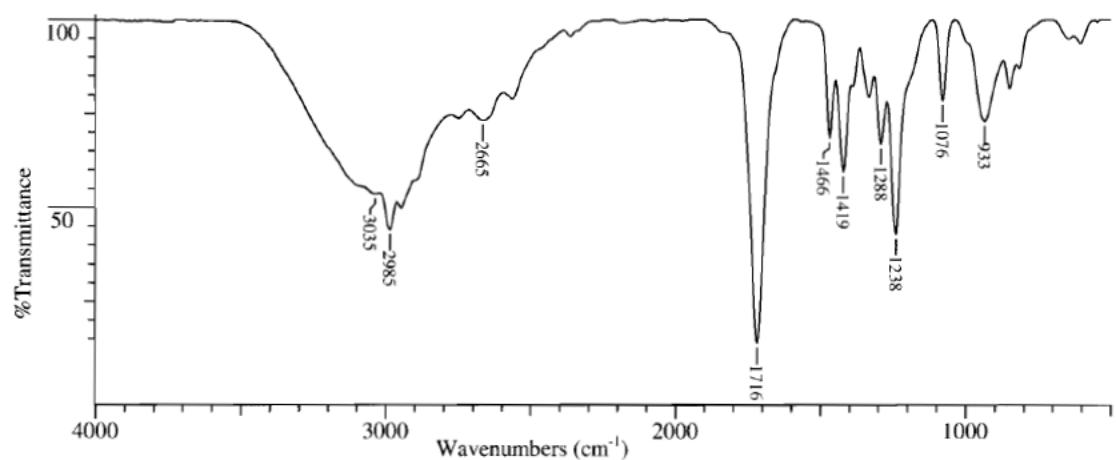
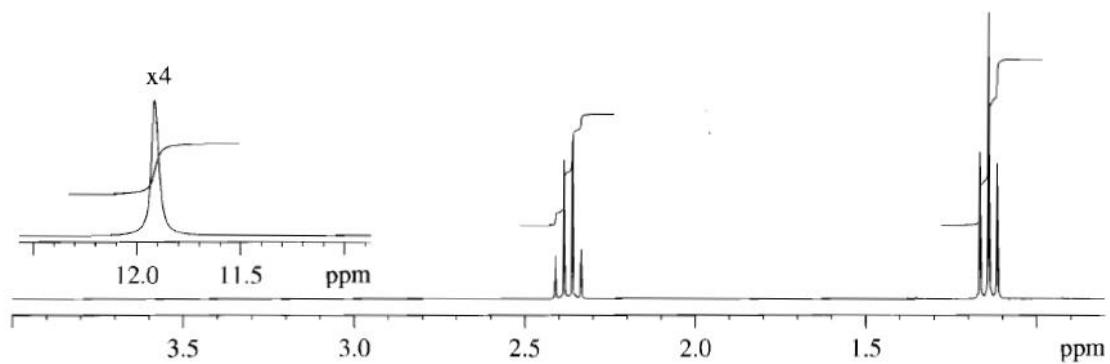
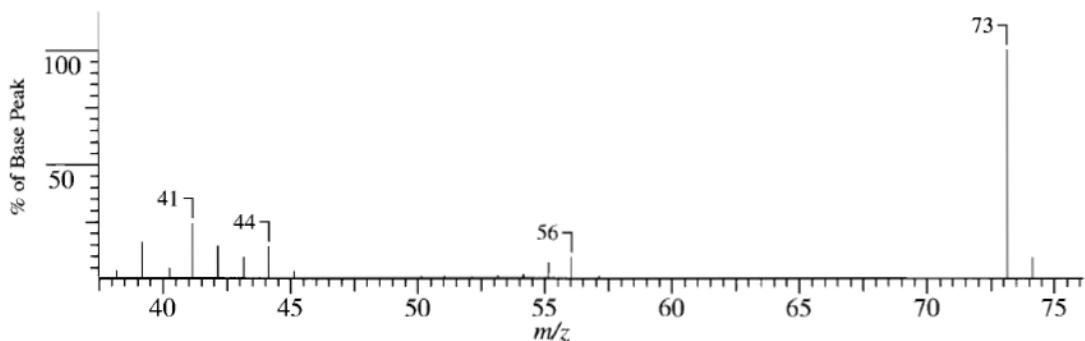
Composé F (C₃H₆O₂)

SM (IE)

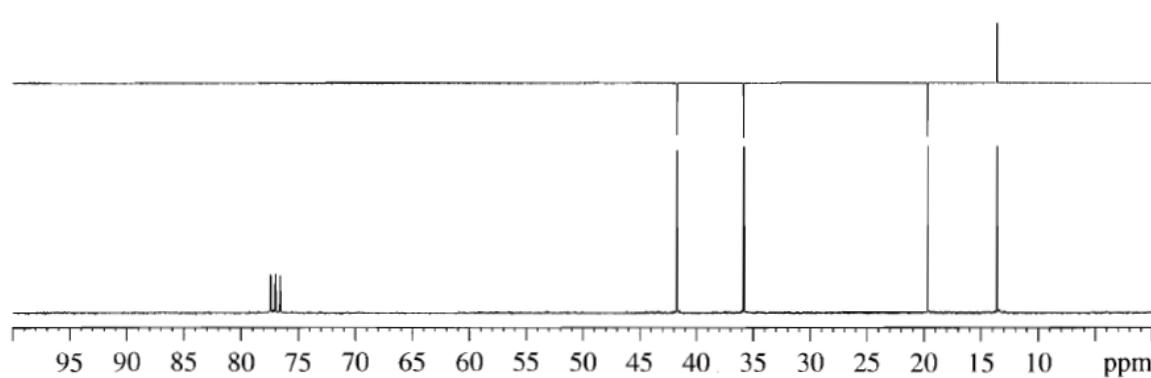


¹³C/DEPT

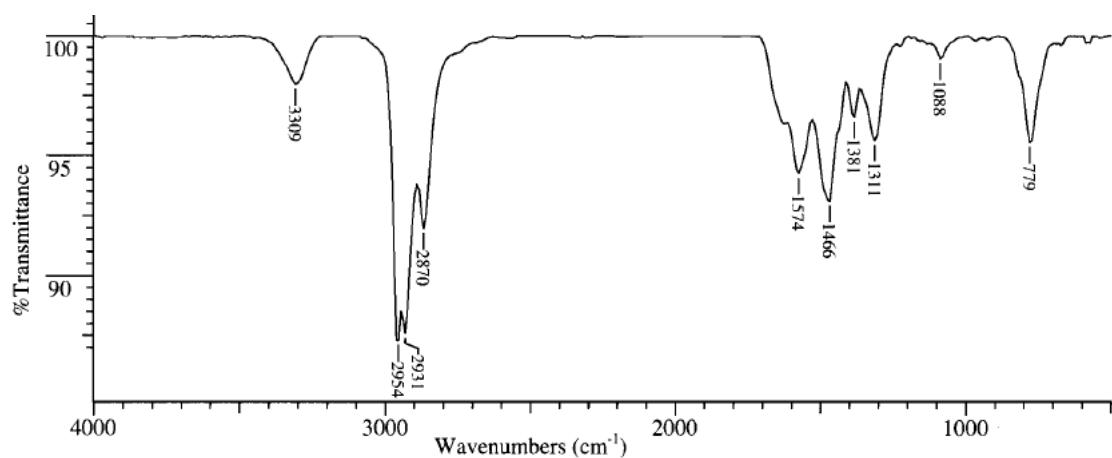


IR**RMN¹H****Composé G ($\text{C}_4\text{H}_{11}\text{N}$)****SM (IE)**

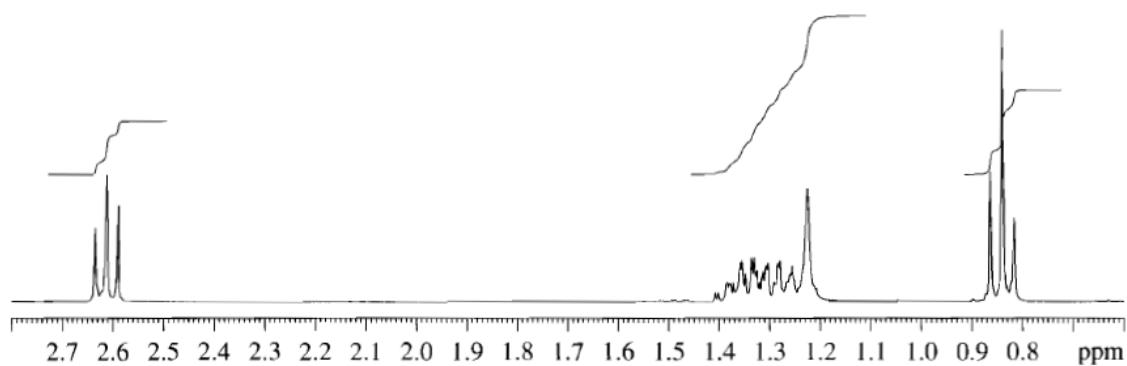
¹³C/DEPT



IR



RMN¹H



REFERENCES BIBLIOGRAPHIQUES (Spectres)

Robert M. Silverstein, Francis X. Webster, David J. Kiemle. Identification spectrométrique de composés organiques. 2007. 2 Ed. de boeck.

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