

Supporting Information for

Copper-Catalyzed Oxidative Cyclization of 1,5-Enynes with Concomitant C-C Bond Cleavage: An Unexpected Access to 3-Formyl-1-indenone Derivatives

Jian Zhang, Degui Wu, Xiaoling Chen, Yunkui Liu,* and Zhenyuan Xu

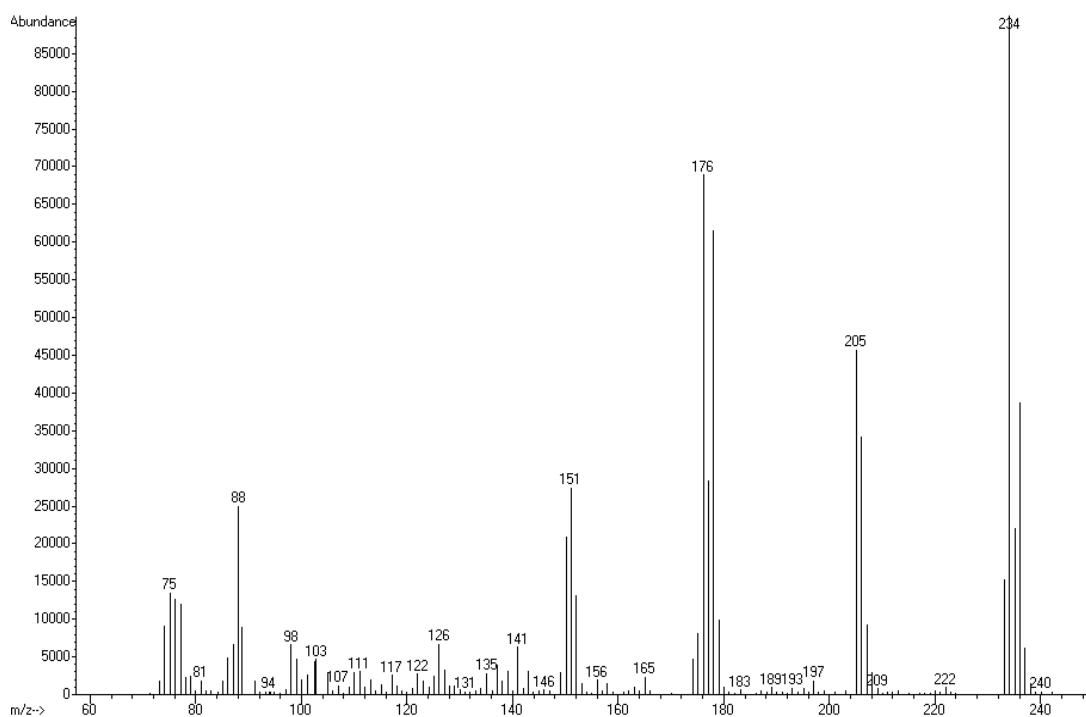
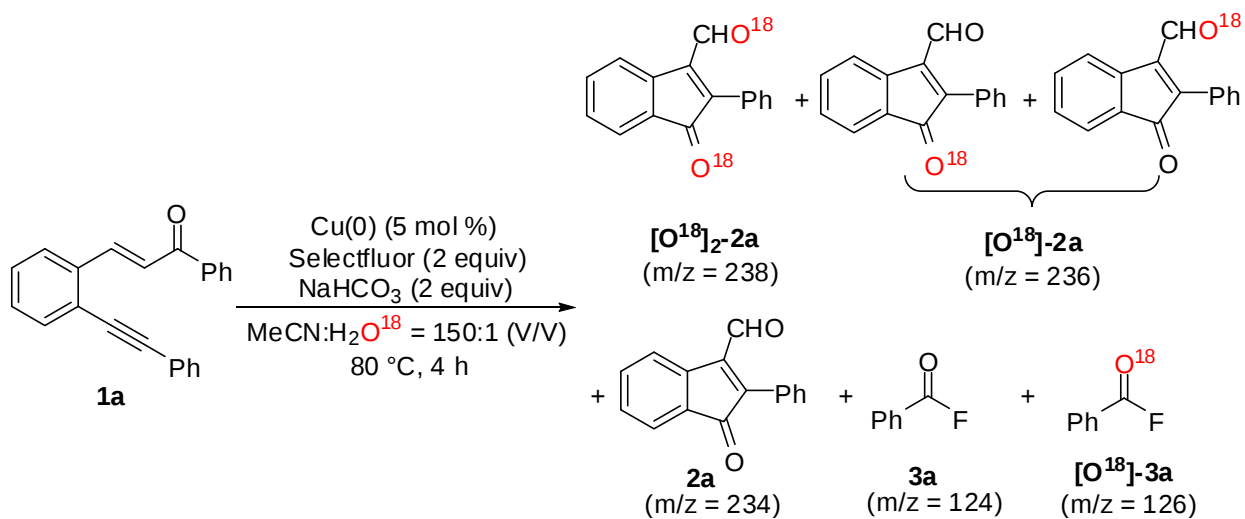
State Key Laboratory Breeding Base of Green Chemistry-Synthesis Technology,
Zhejiang University of Technology, 18 Chaowang Road, Hangzhou 310014, P. R. China

Email: ykuiliu@zjut.edu.cn

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1. Charts for Mechanism Studies

1.1. Reaction of 1a in CH₃CN-H₂O¹⁸ (150:1, V/V) versus in CH₃CN-H₂O (150:1, V/V)



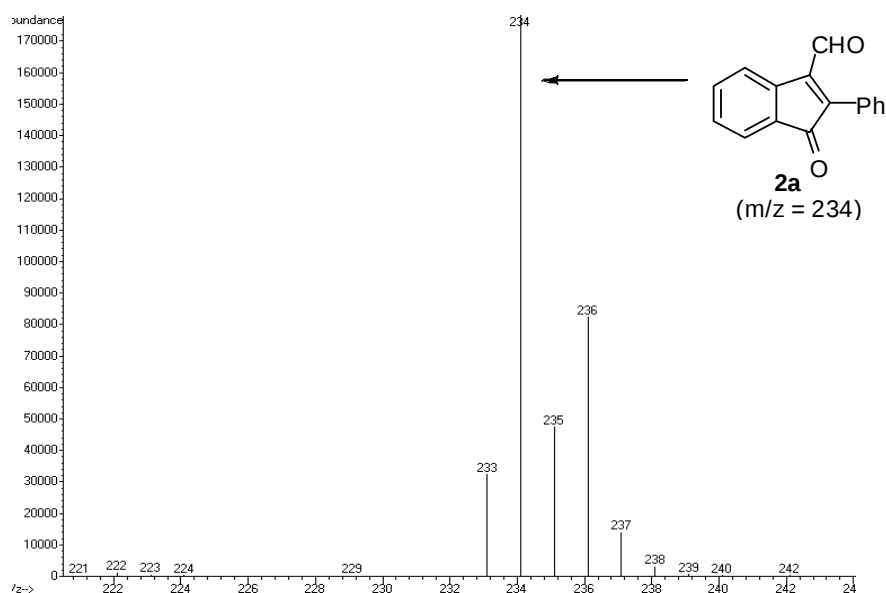


Figure S1. GC-MS Spectra of **2a** resulting from reaction of **1a** in CH₃CN-H₂O (150:1, V/V)

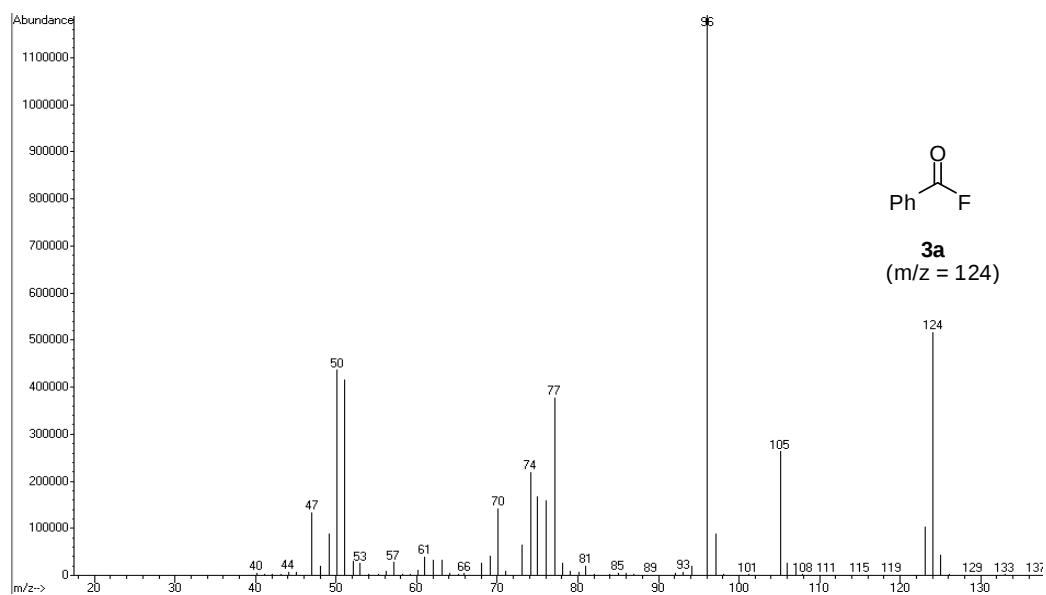


Figure S2. GC-MS Spectra of **3a** resulting from reaction of **1a** in CH₃CN-H₂O (150:1, V/V)

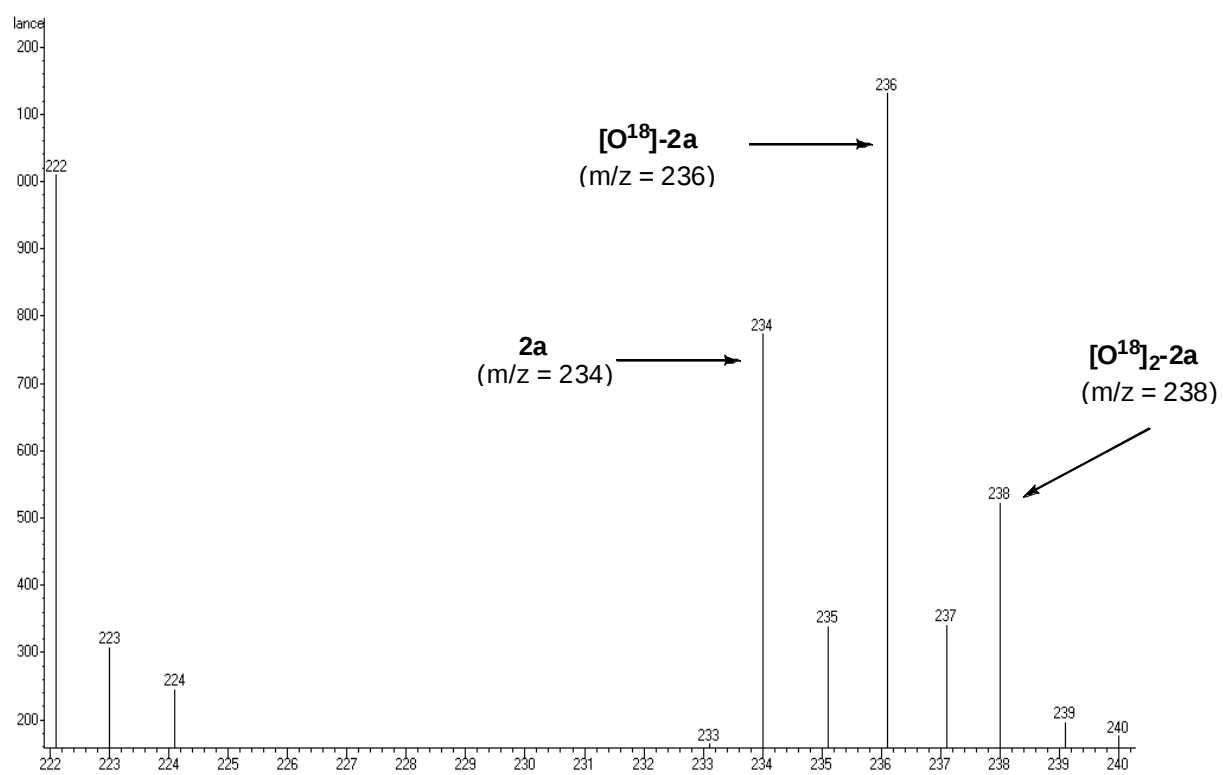
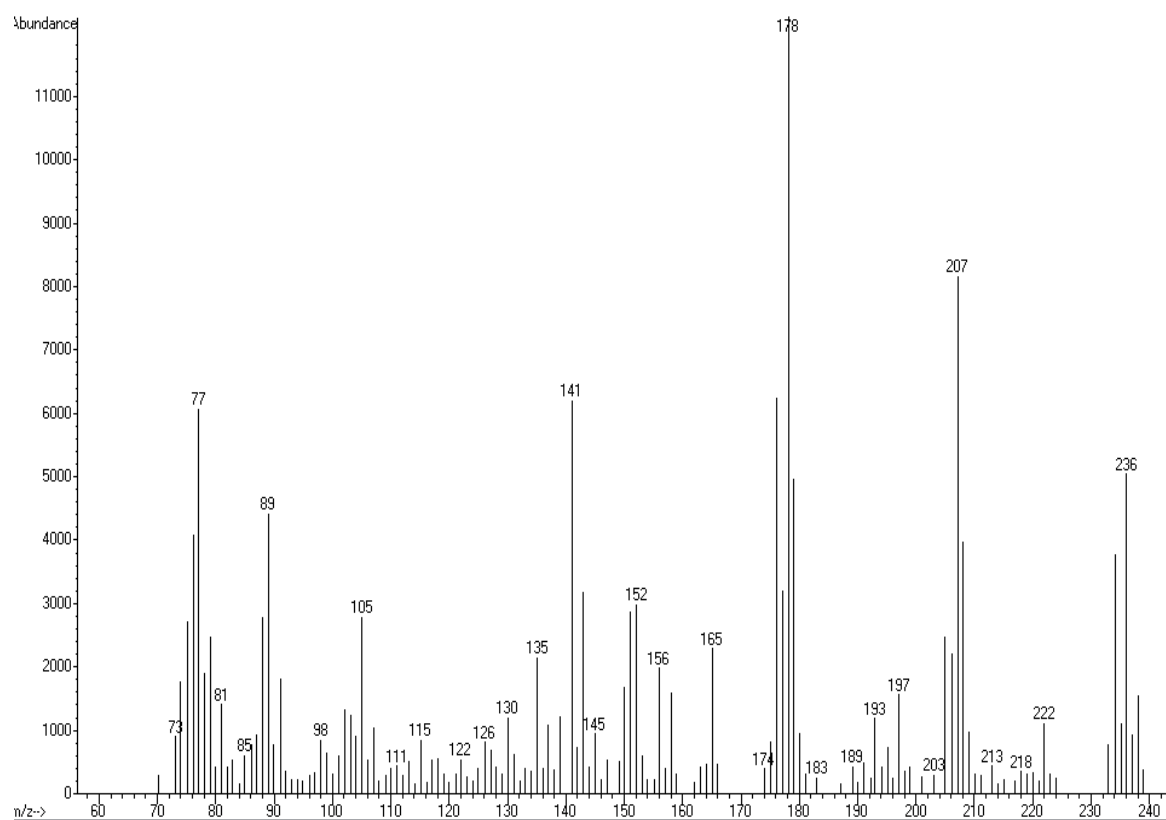


Figure S3. GC-MS Spectra of **2a** resulting from reaction of **1a** in $\text{CH}_3\text{CN-H}_2\text{O}^{18}$ (150:1, V/V)

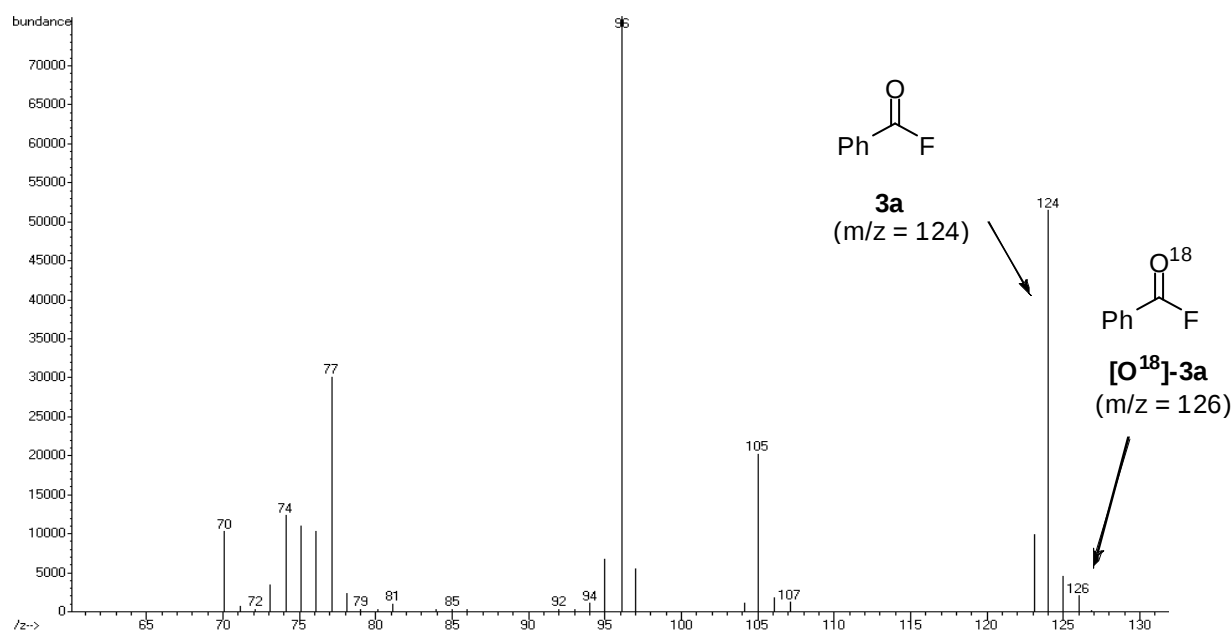


Figure S4. GC-MS Spectra of **3a** resulting from reaction of **1a** in $\text{CH}_3\text{CN-H}_2\text{O}^{18}$ (150:1, V/V)

1.2. Reaction of **5** under the Standard Reaction Conditions and ^{18}O -Labeling Experiment

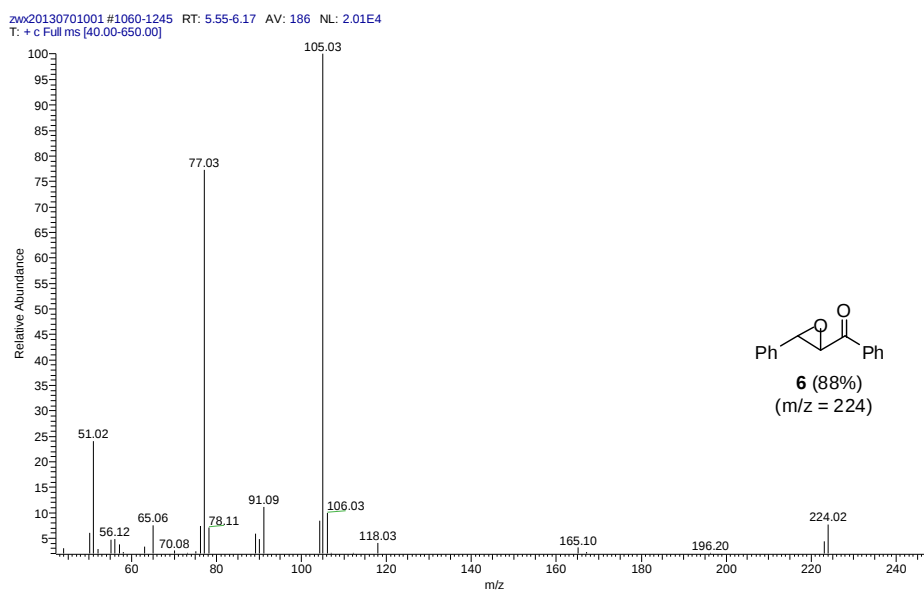
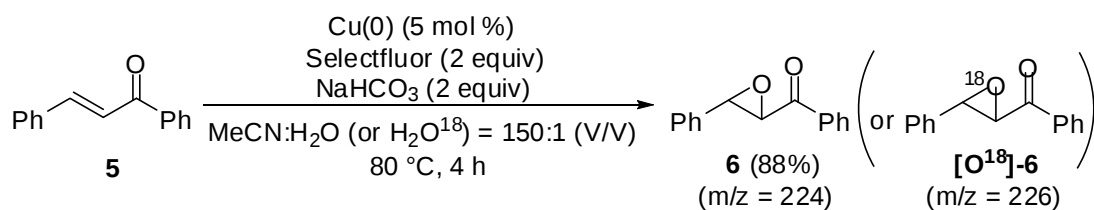


Figure S5 GC-MS Spectra of **6** resulting from reaction of **5** in $\text{CH}_3\text{CN-H}_2\text{O}$ (150:1, V/V)

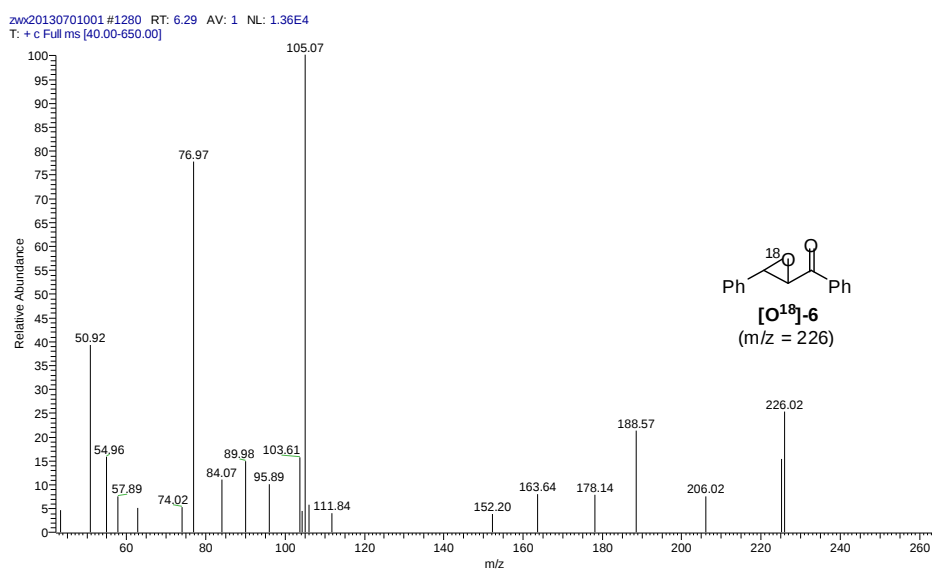
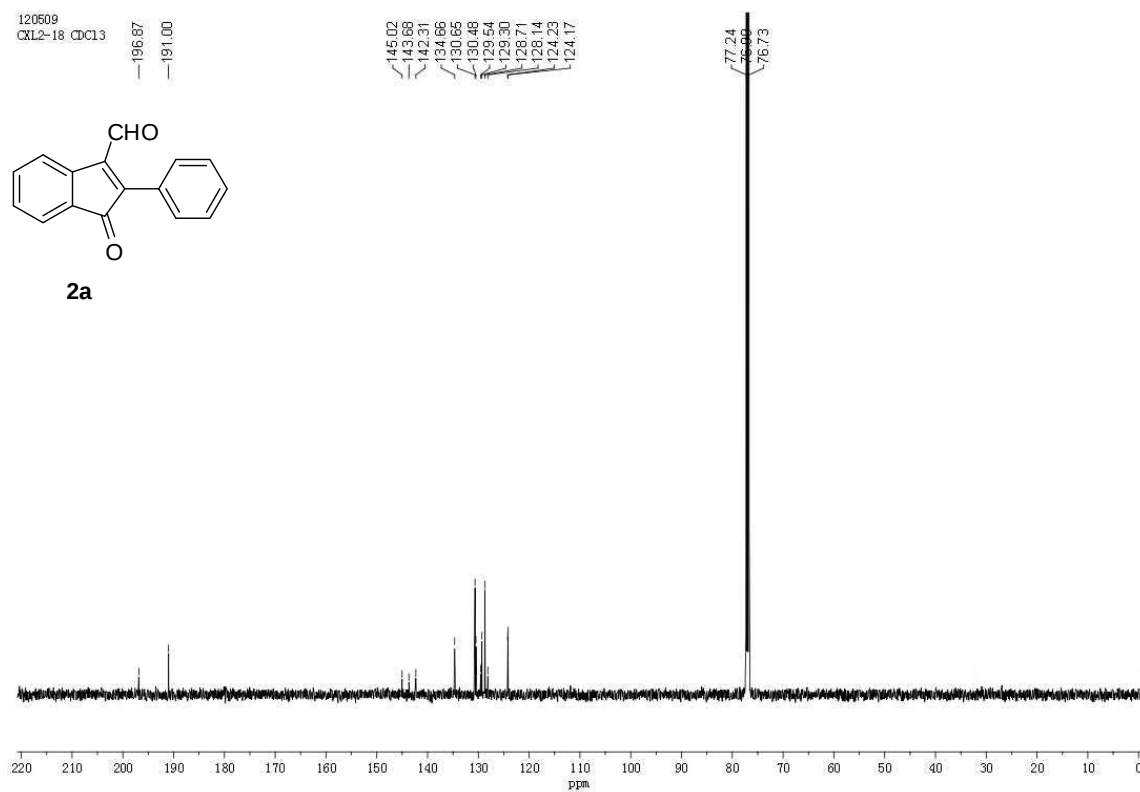
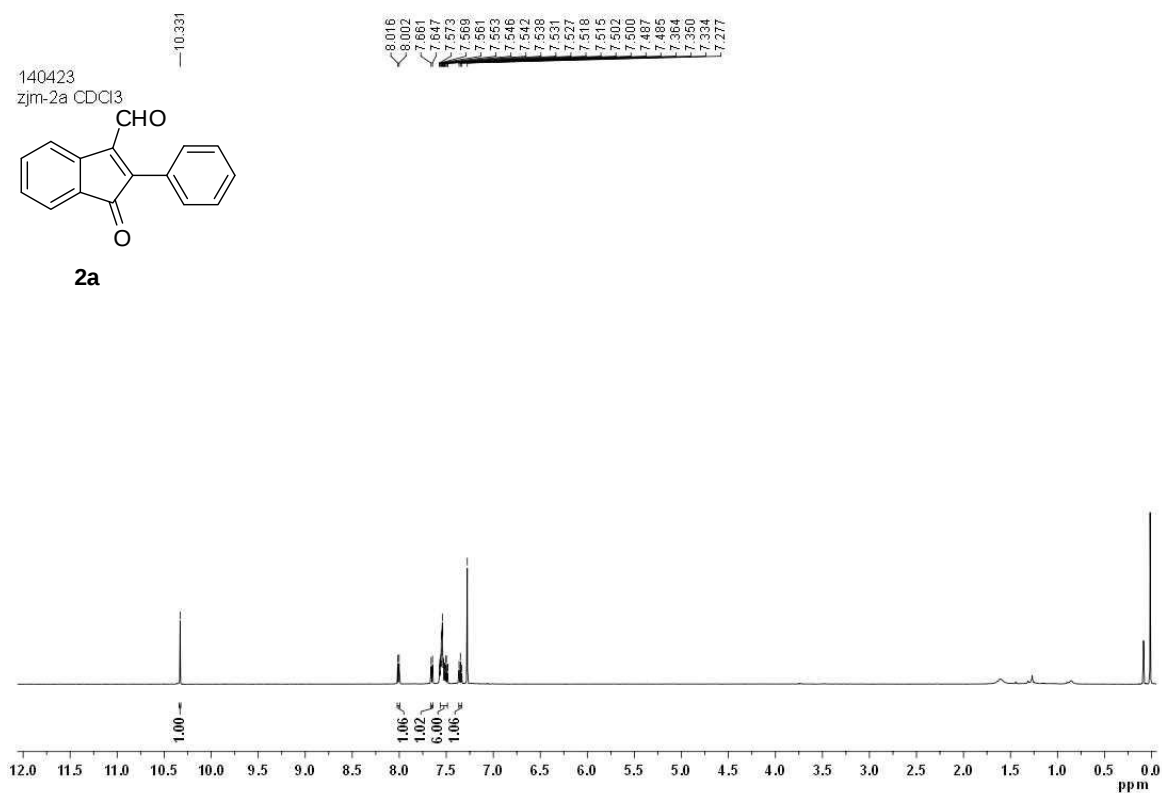
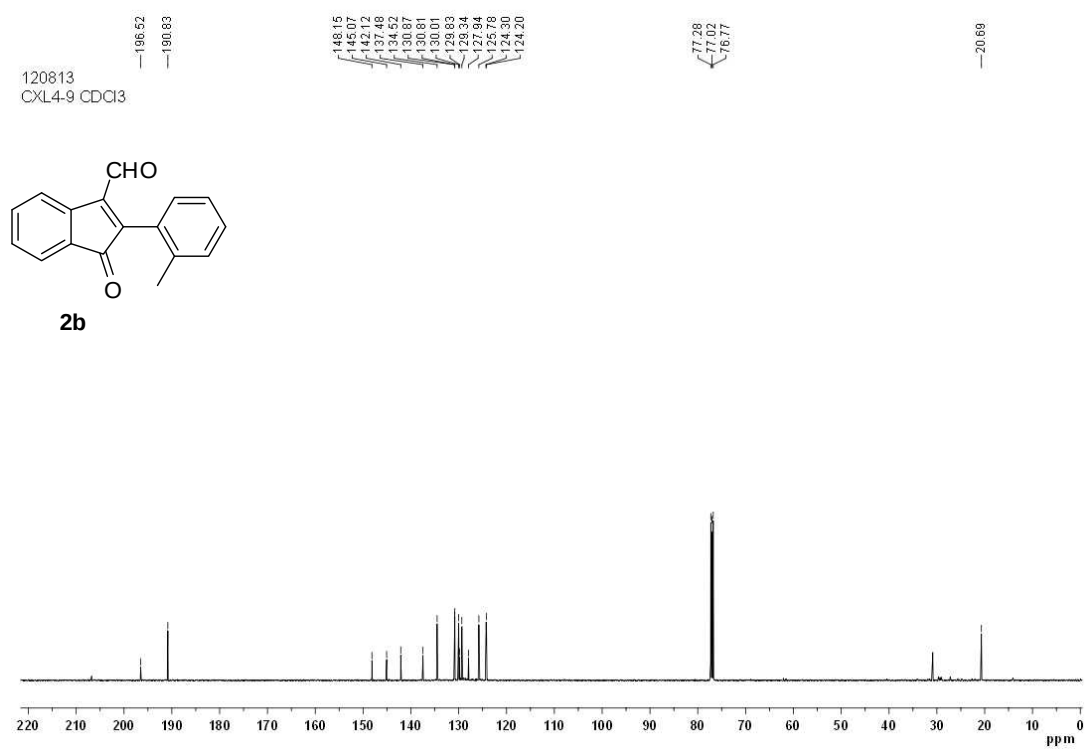
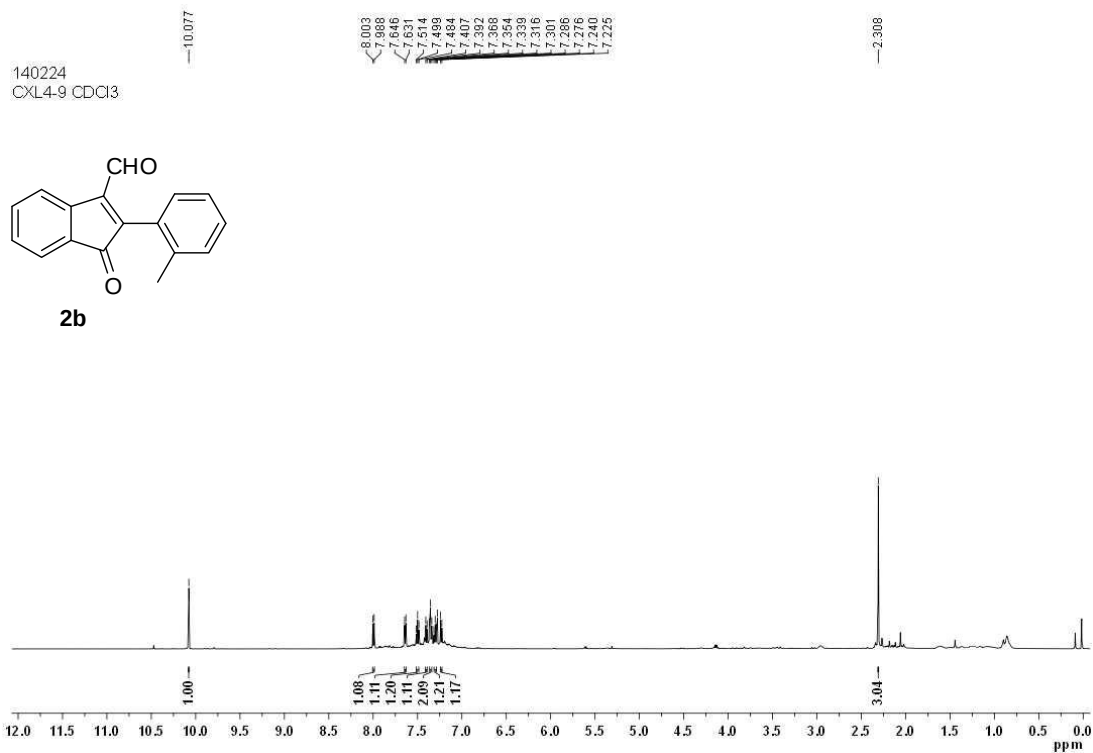
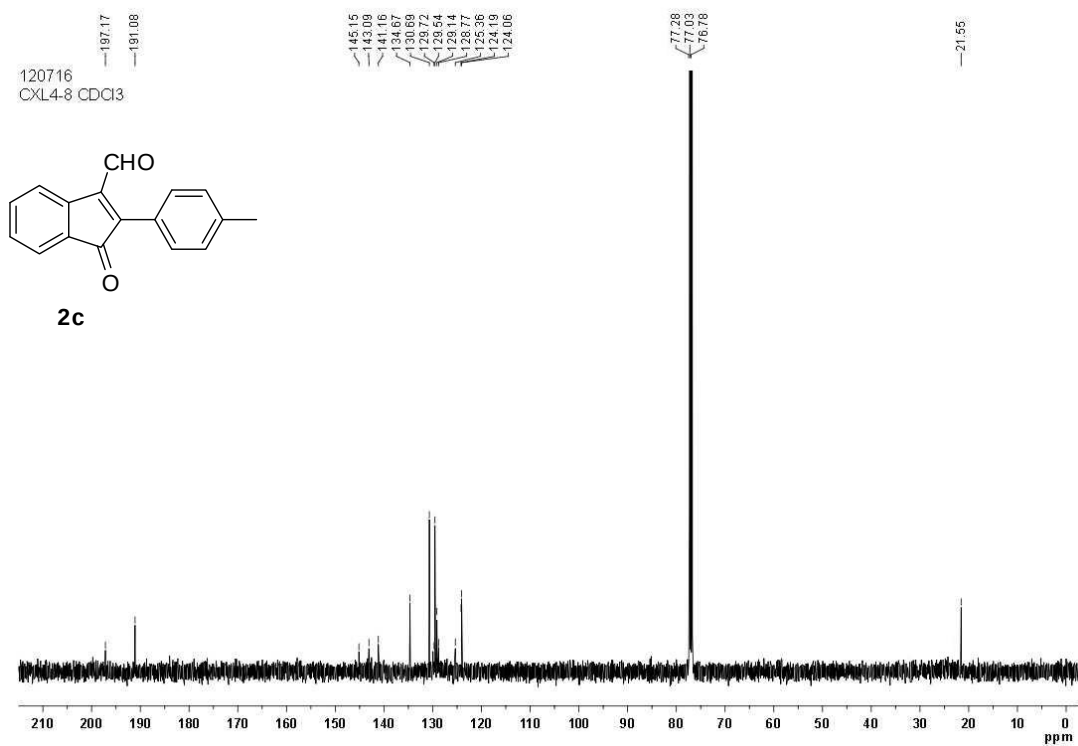
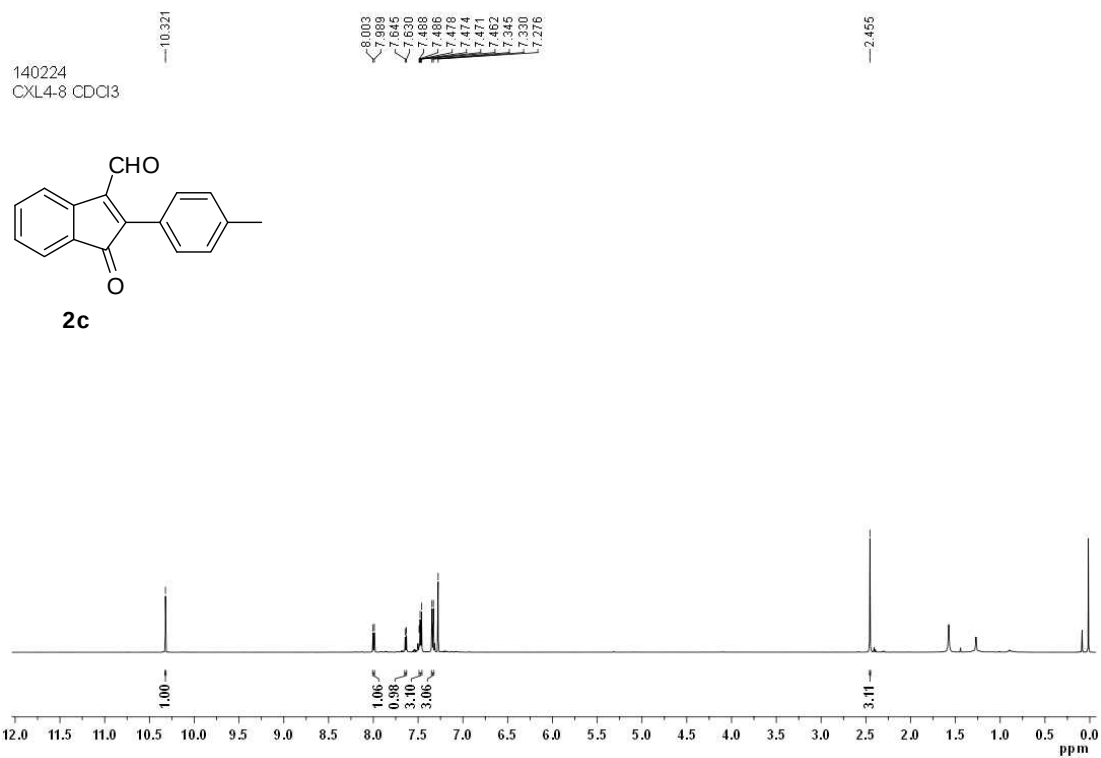


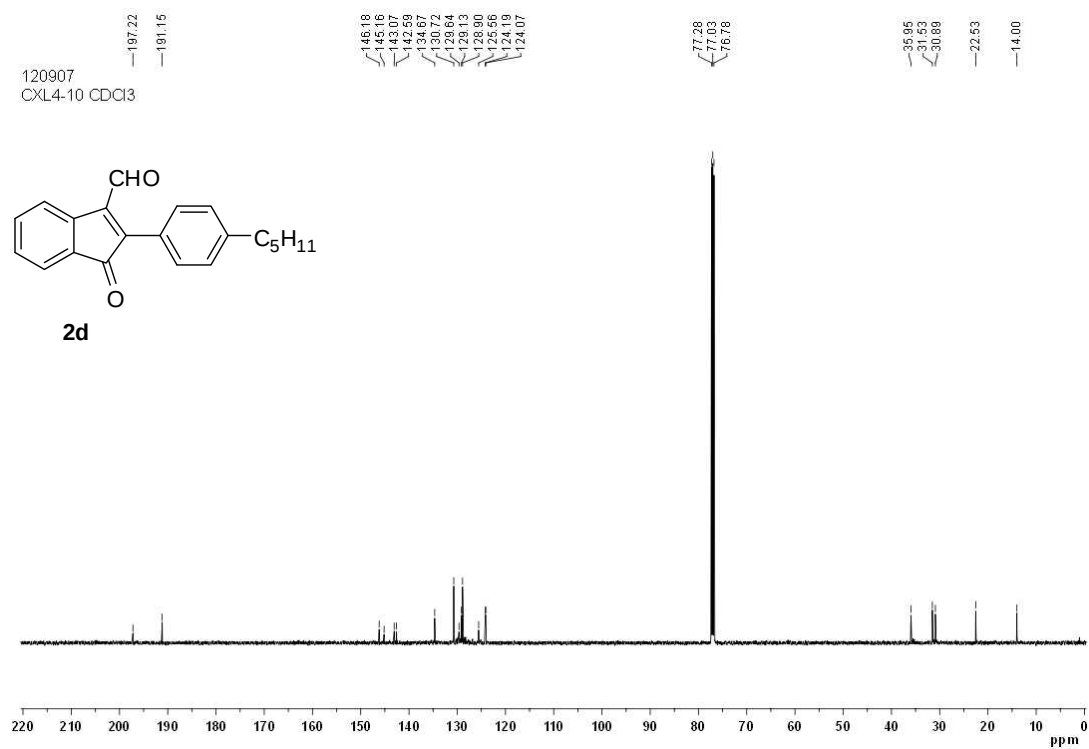
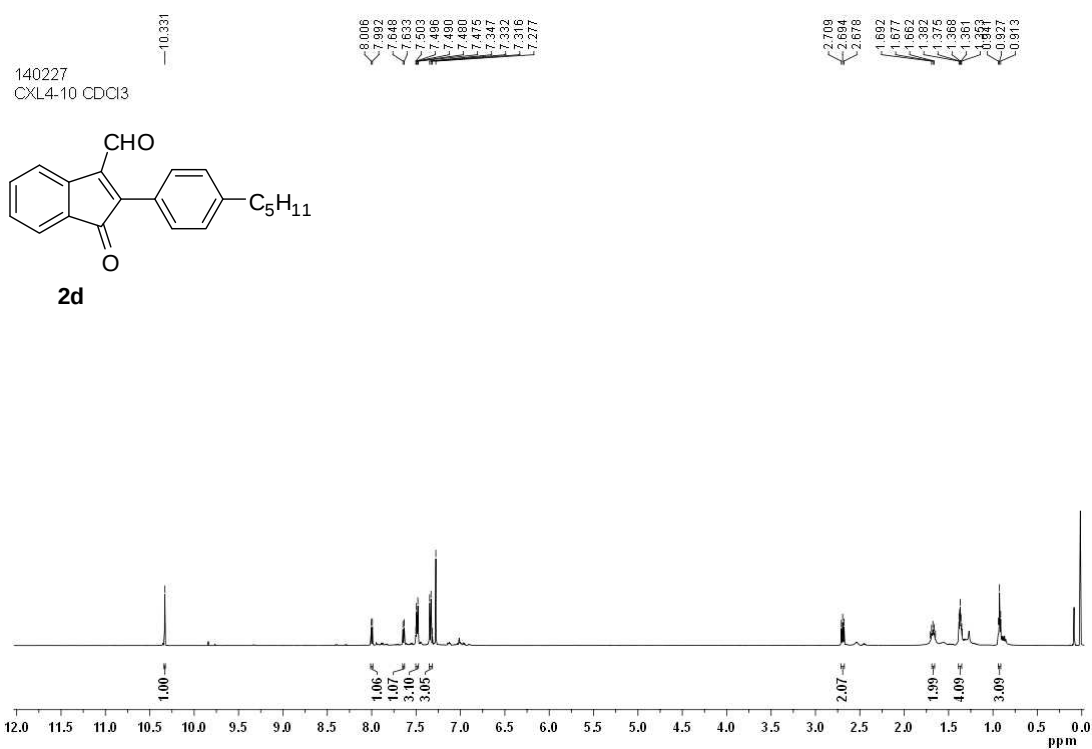
Figure S6 GC-MS Spectra of **[O¹⁸]-6** resulting from reaction of **5** in CH₃CN-H₂O¹⁸ (150:1, V/V)

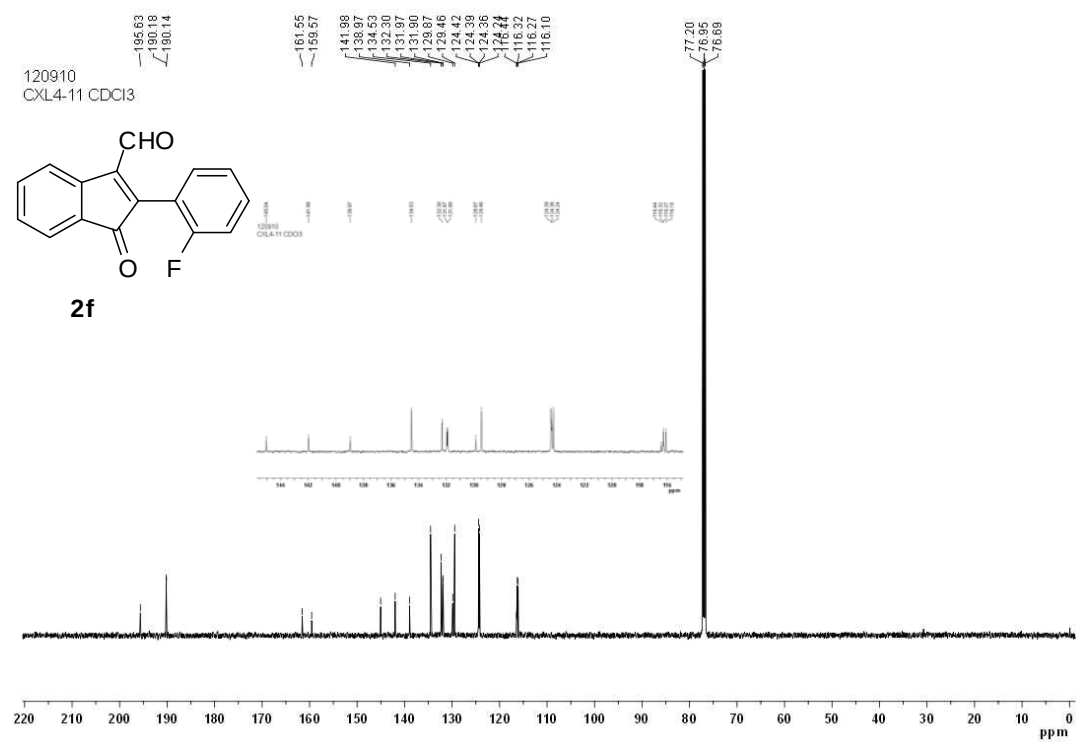
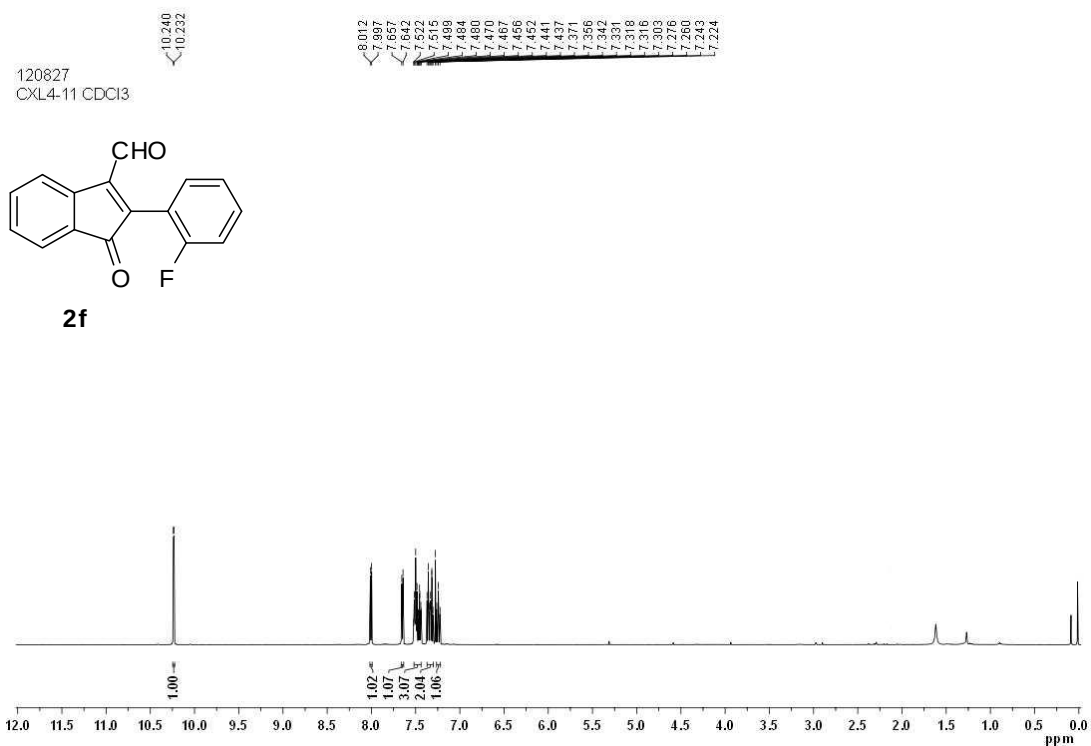
2. NMR Spectra of Products

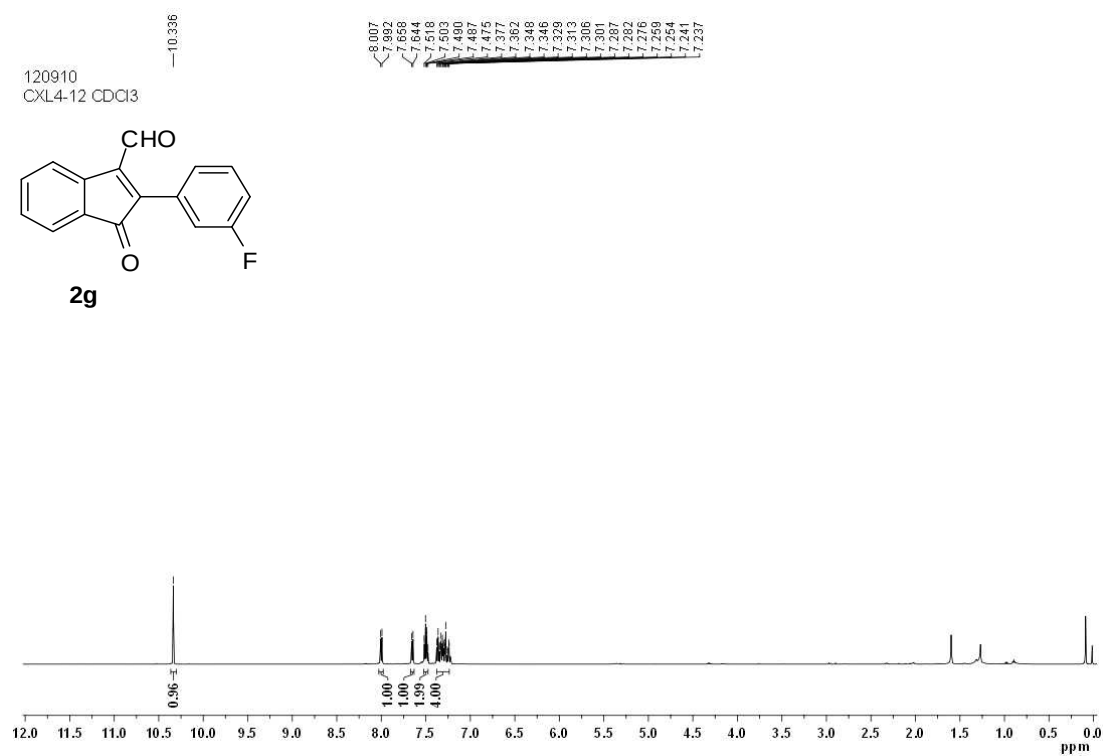
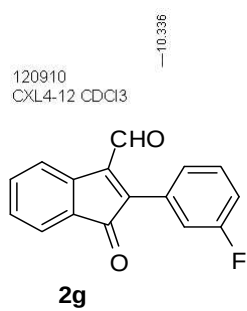
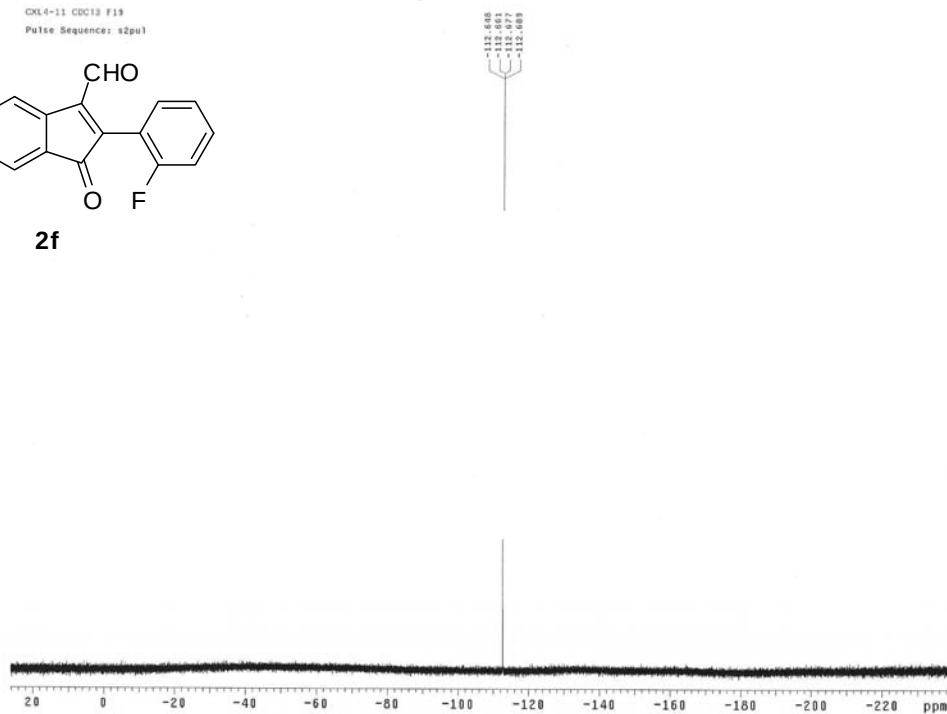


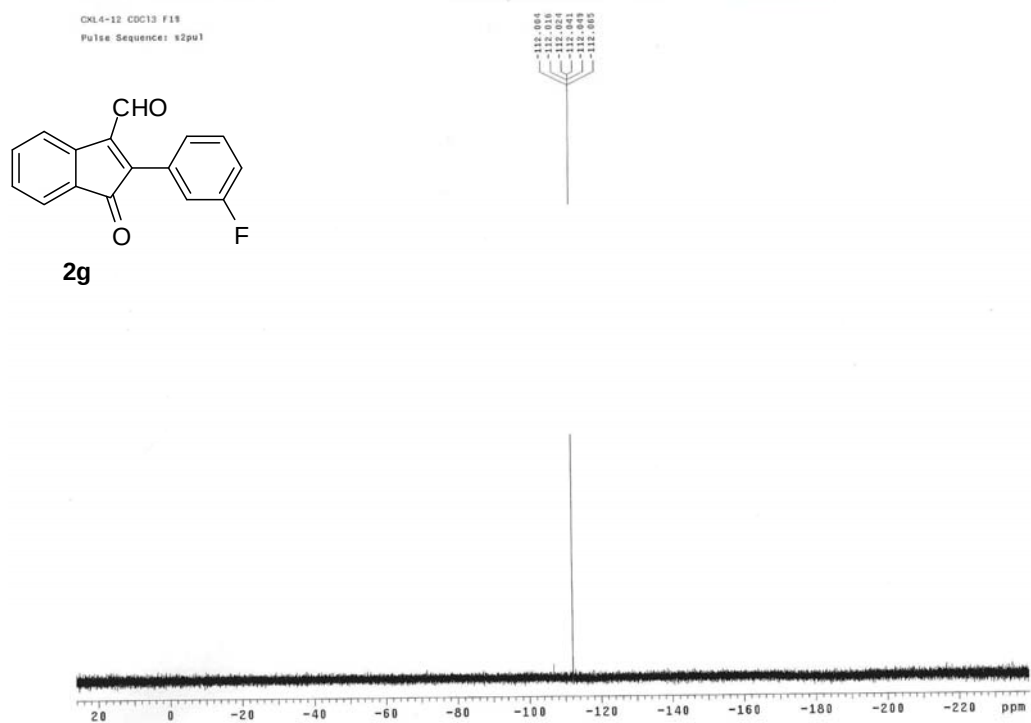
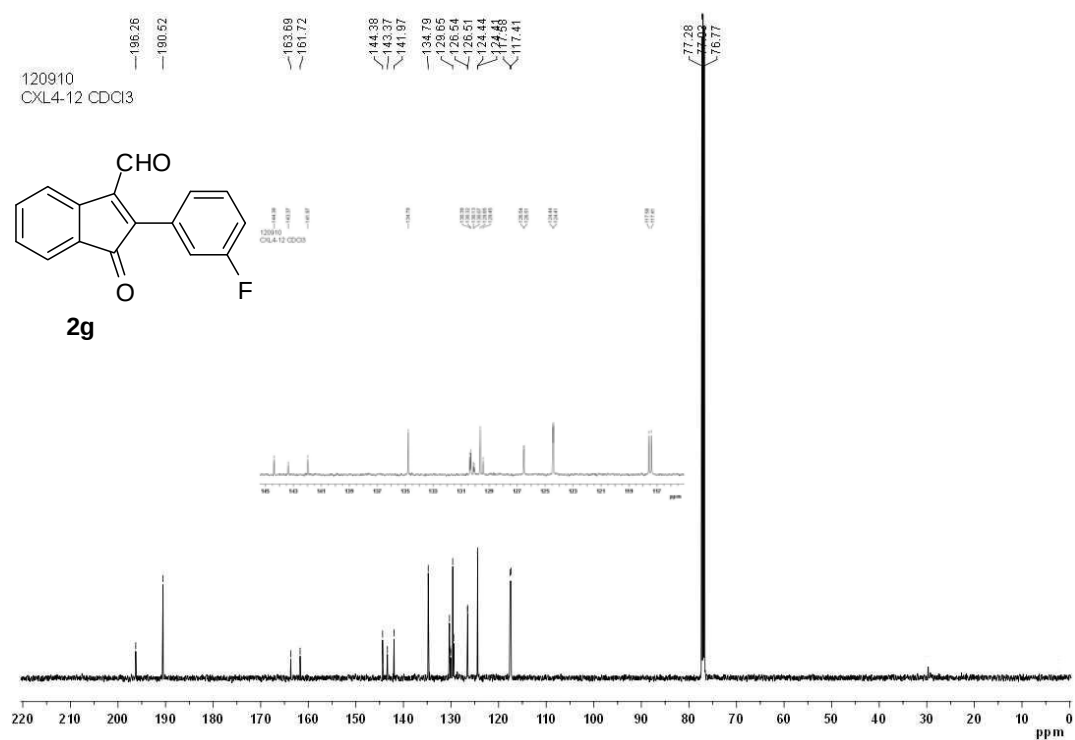


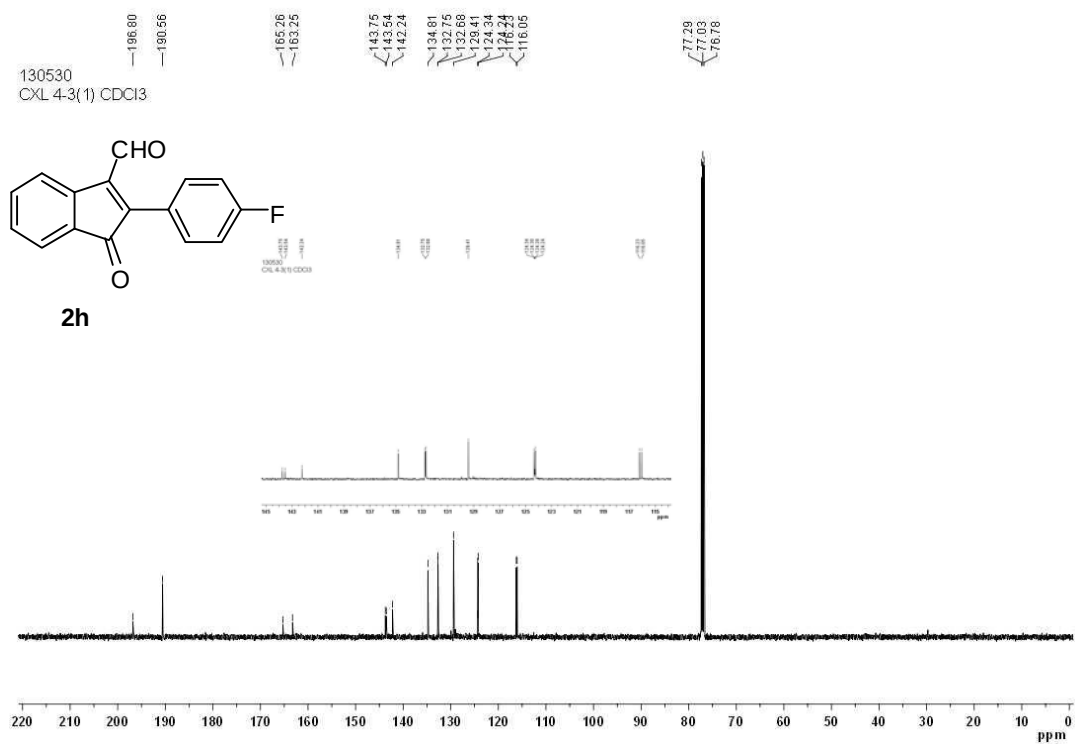
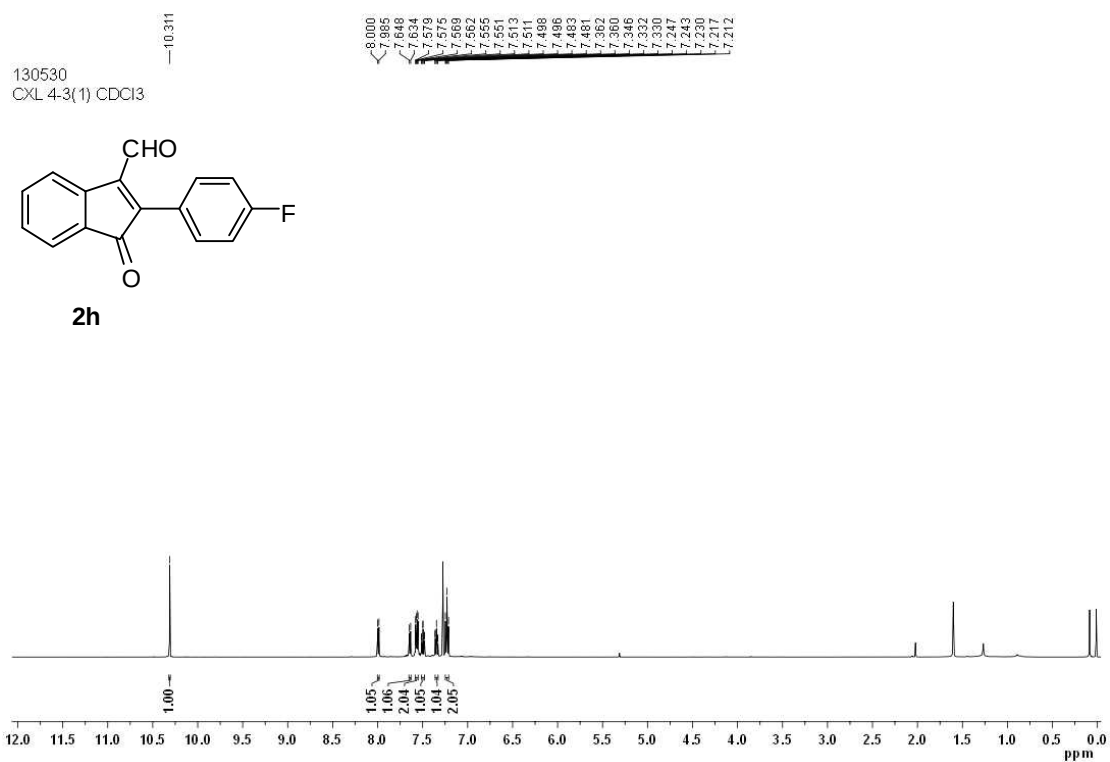


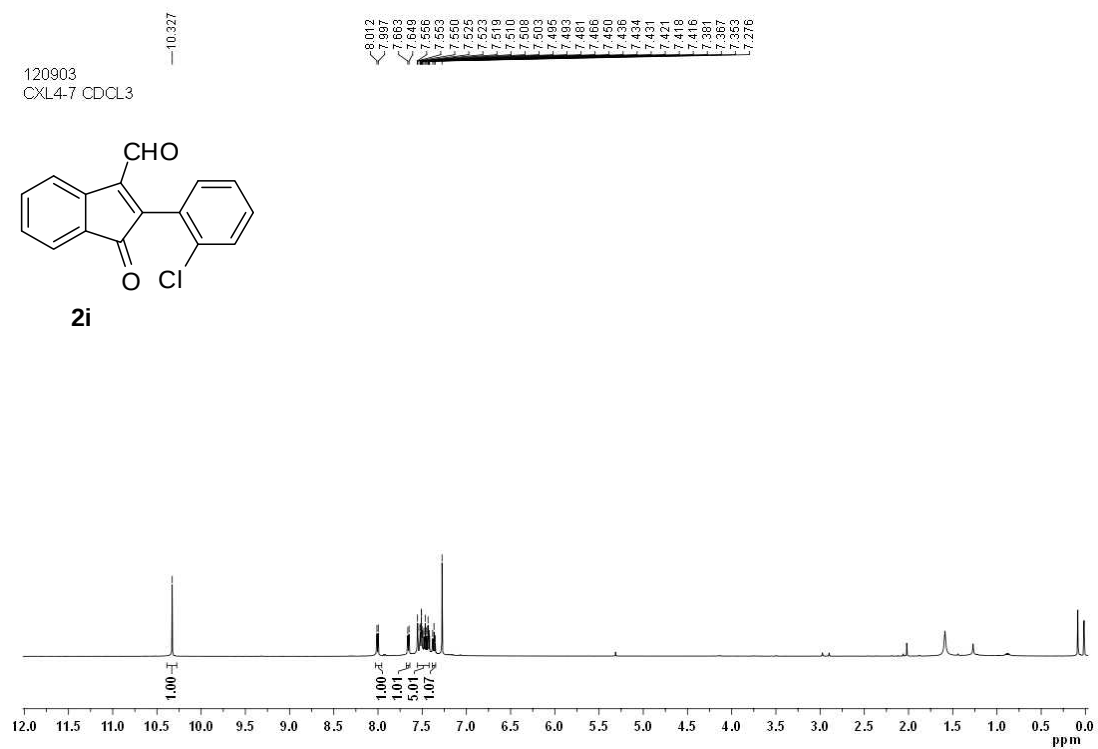
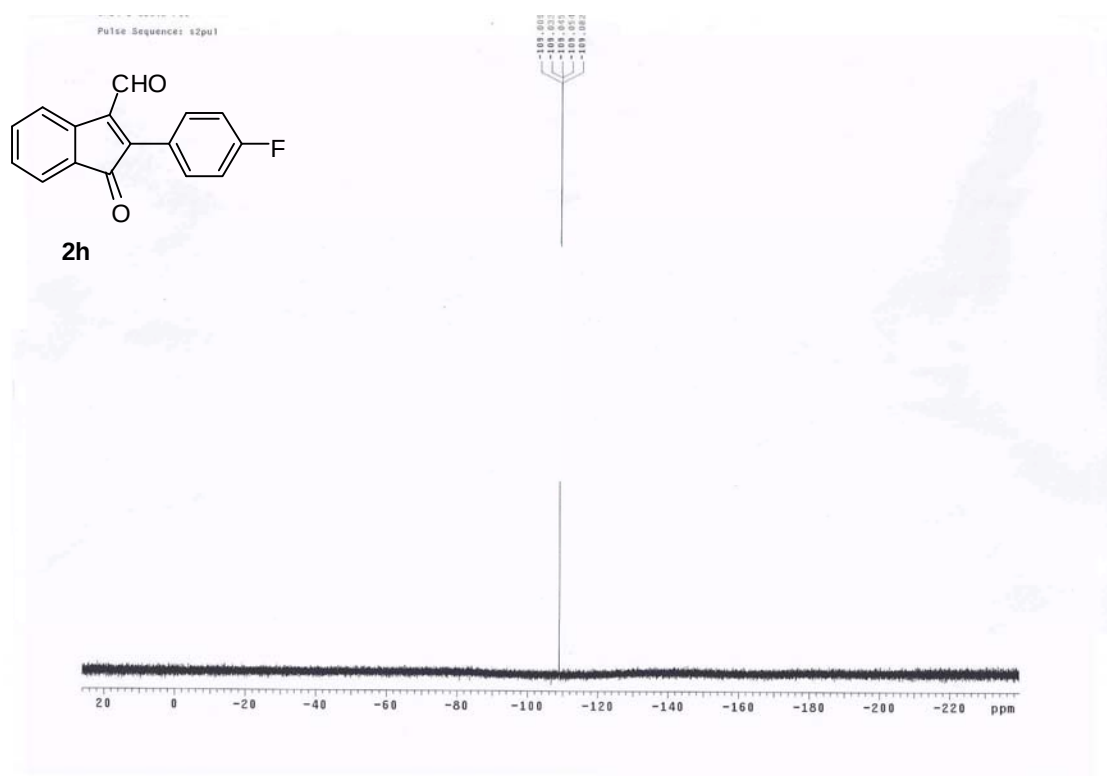


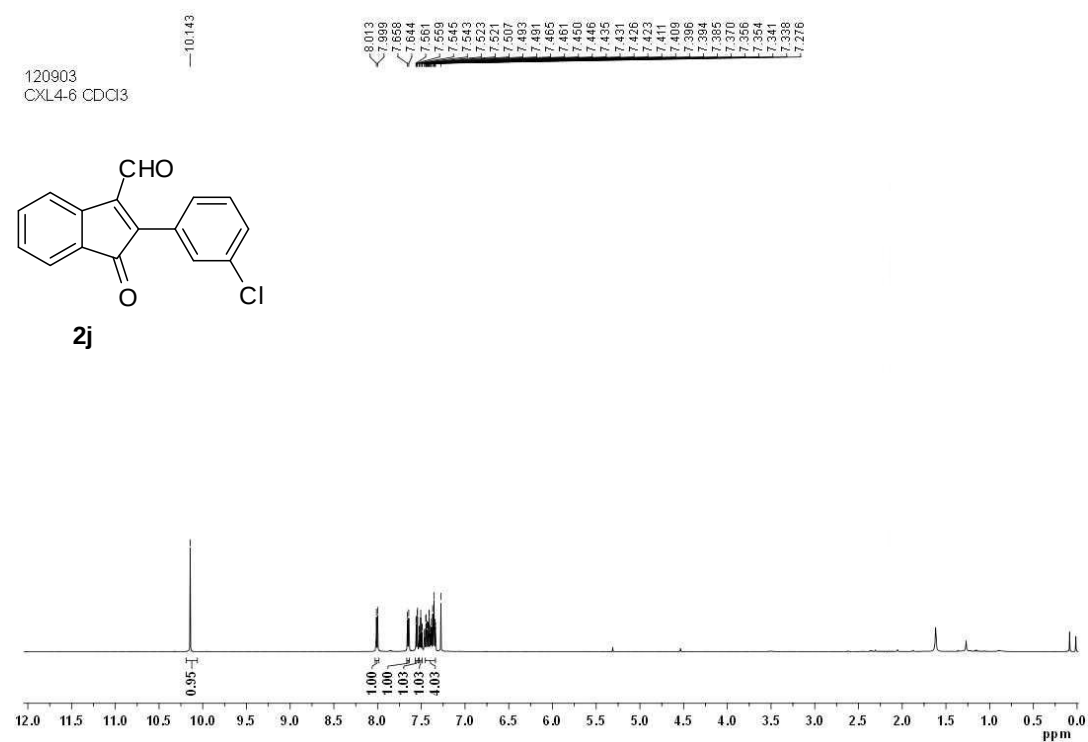
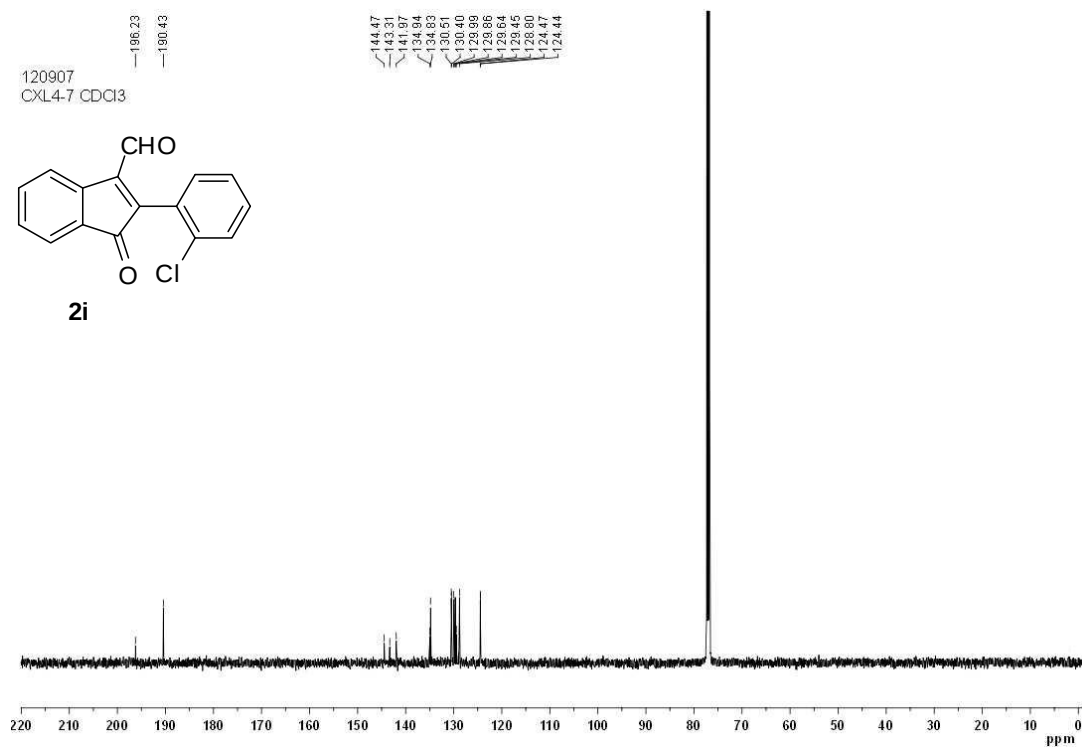


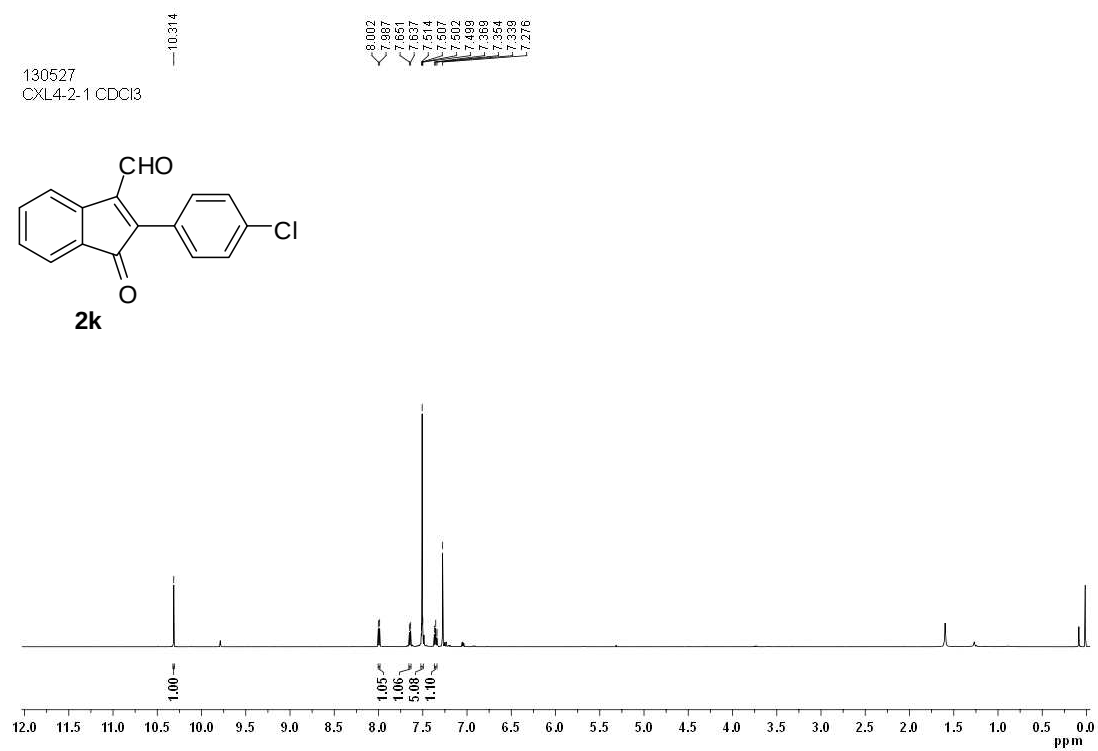
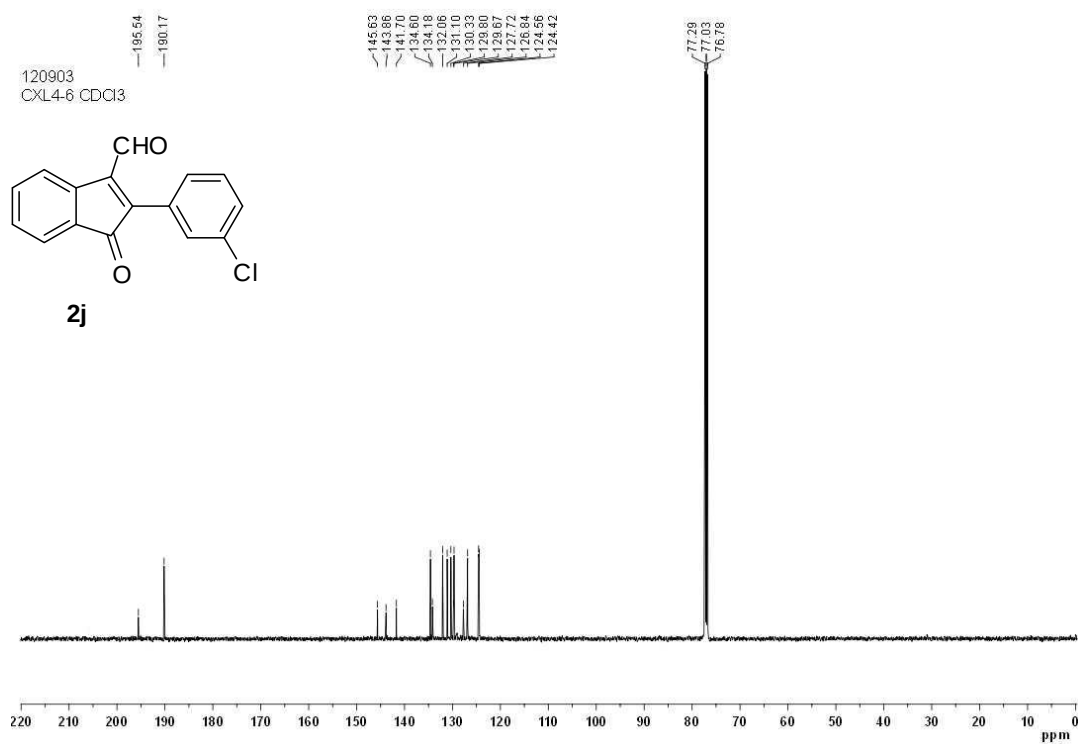


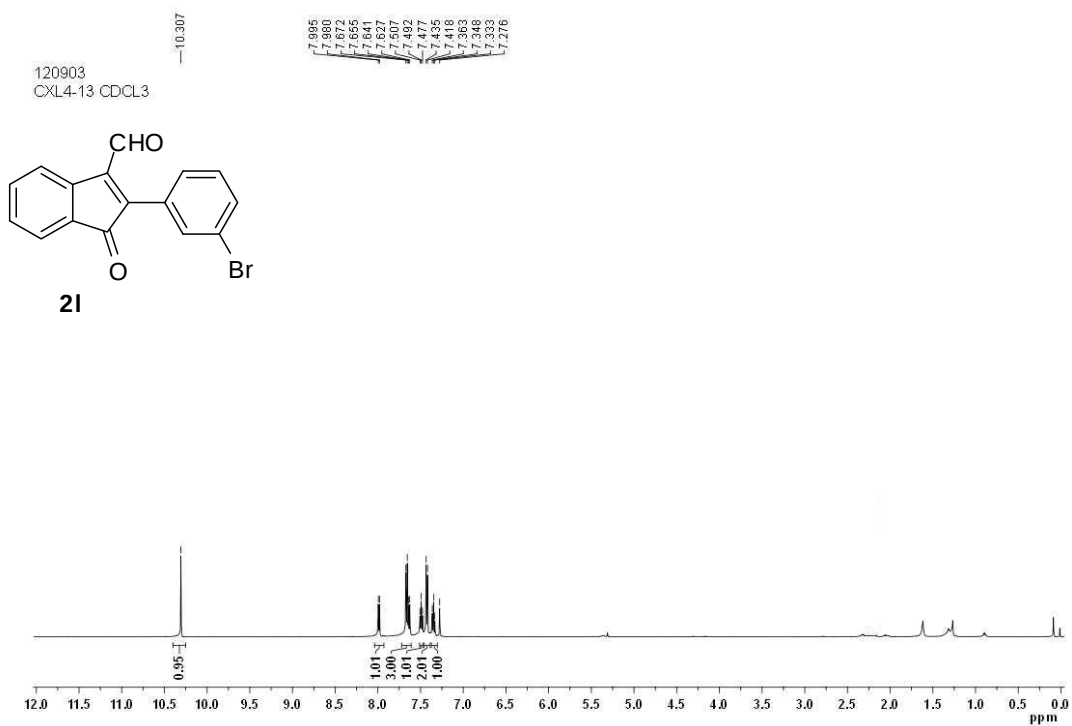
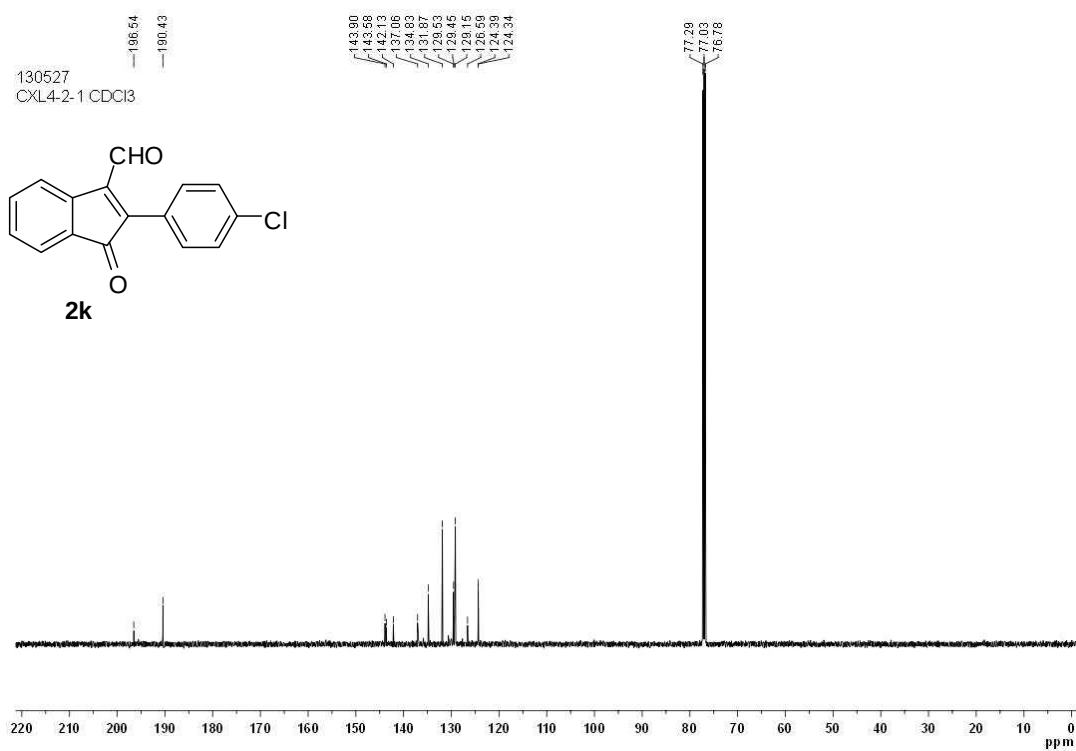


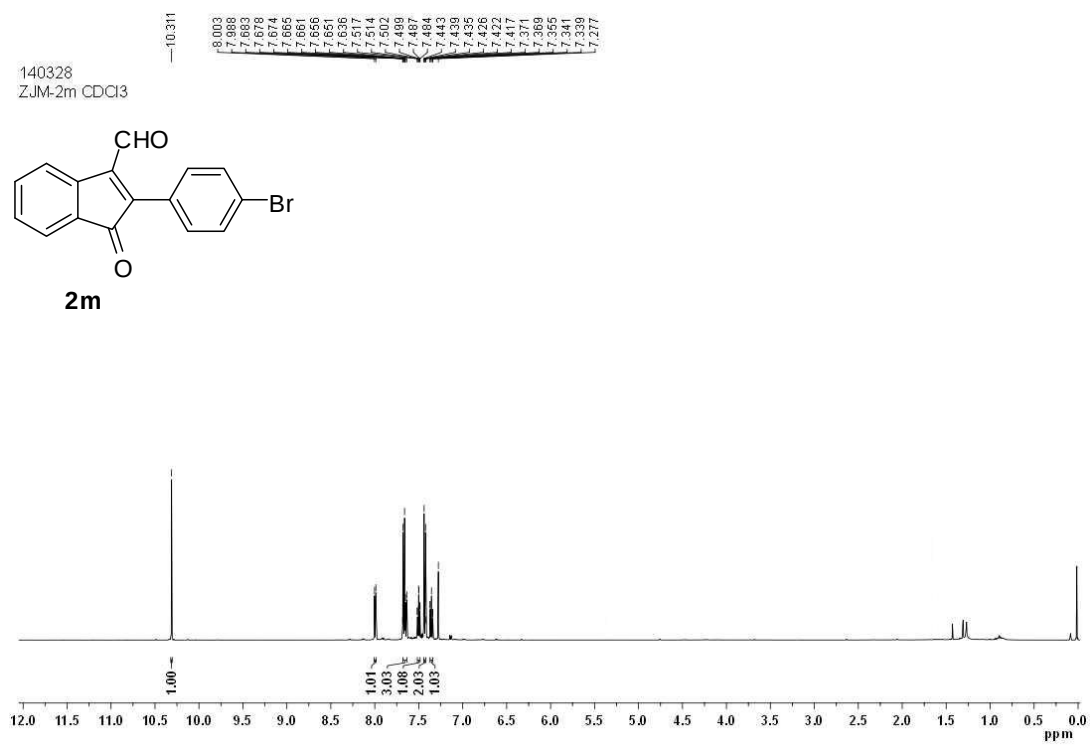
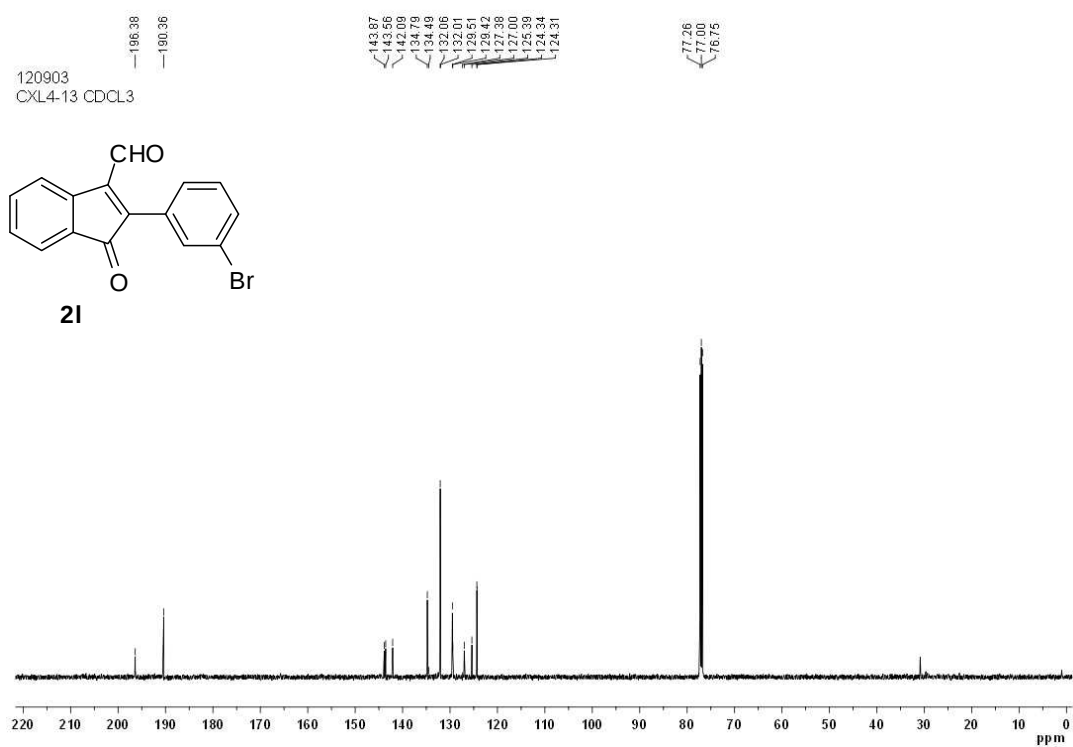


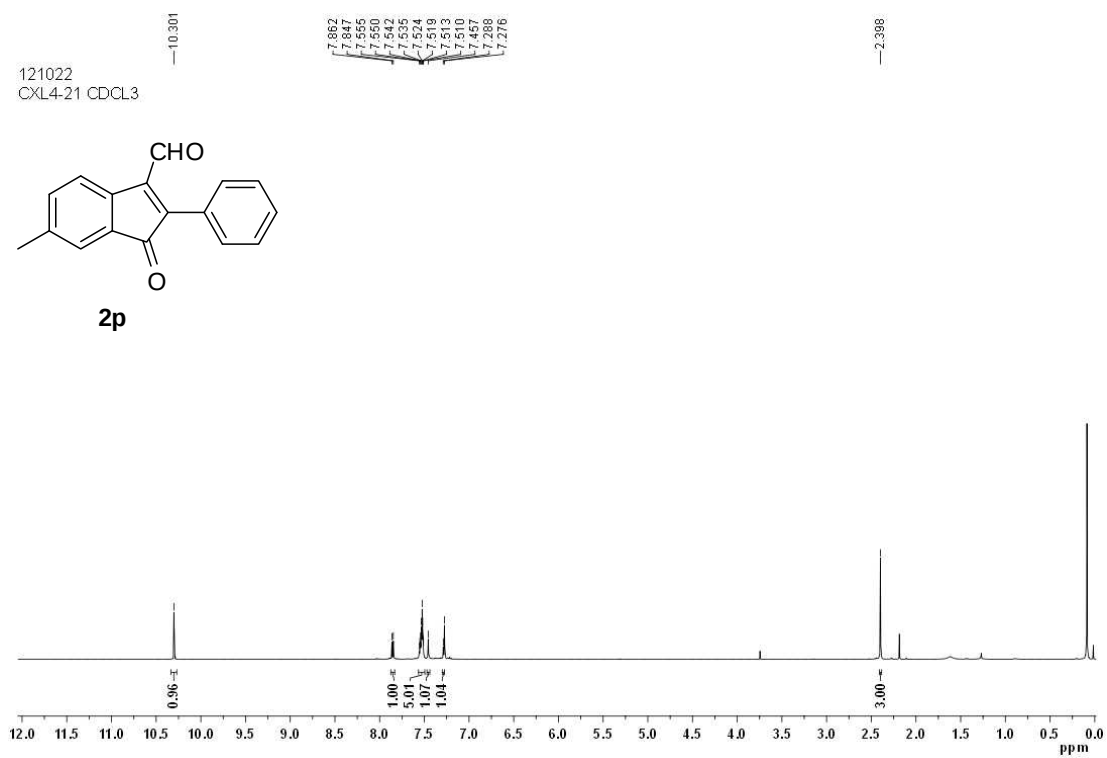
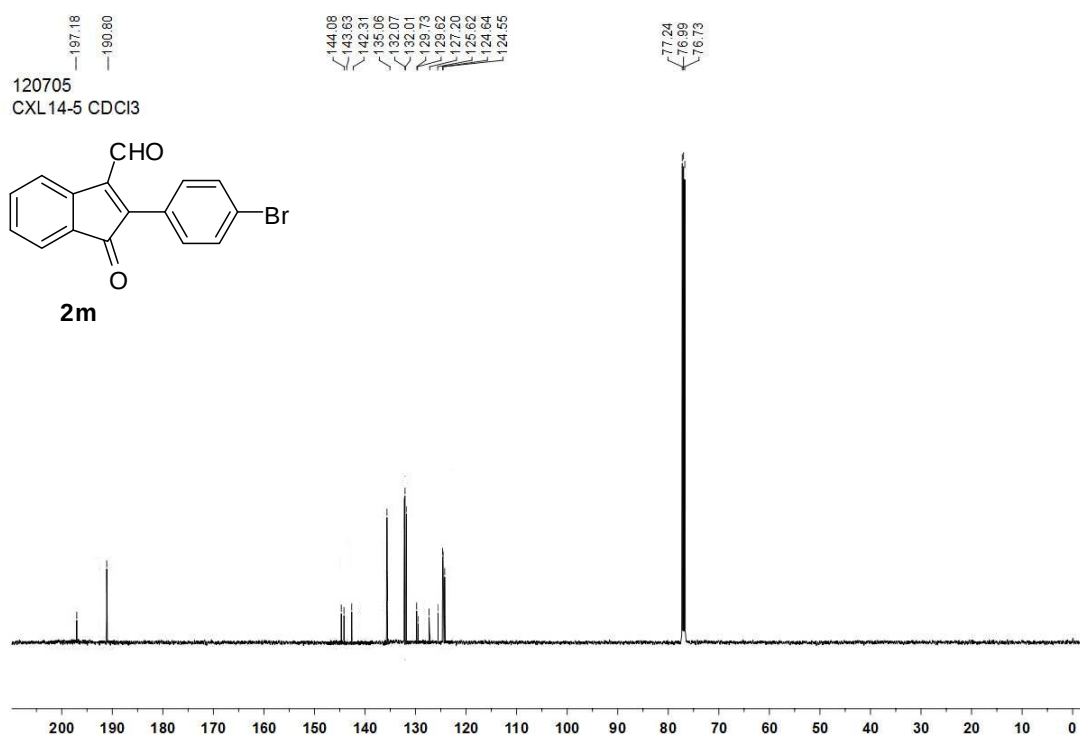


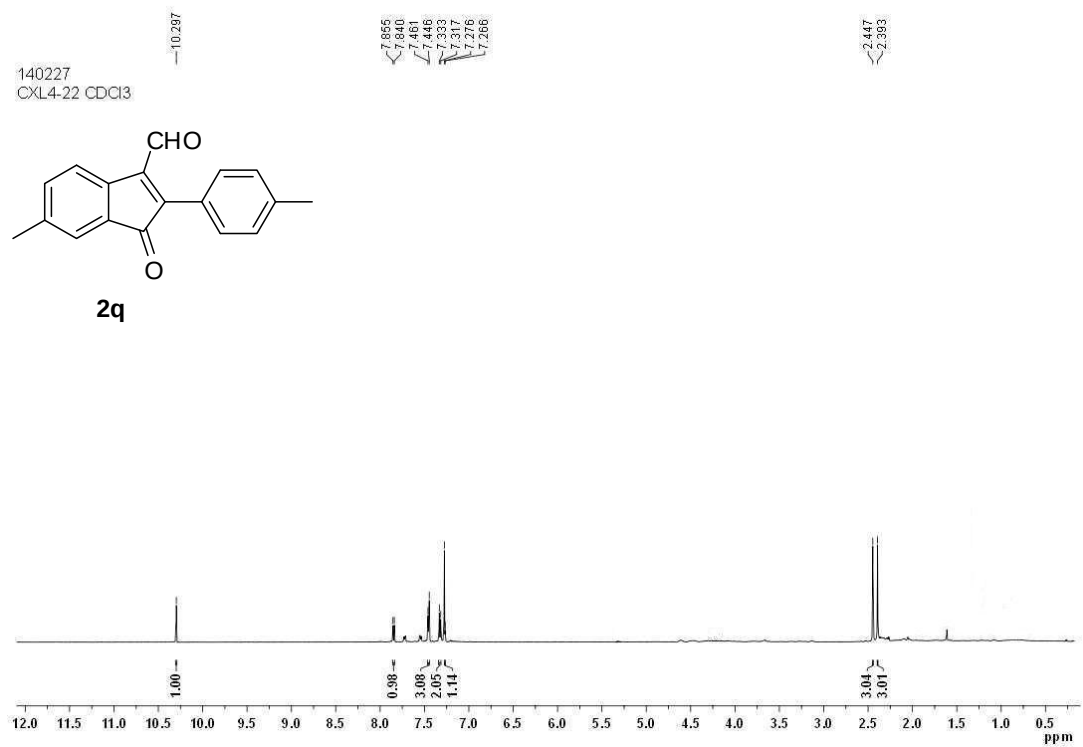
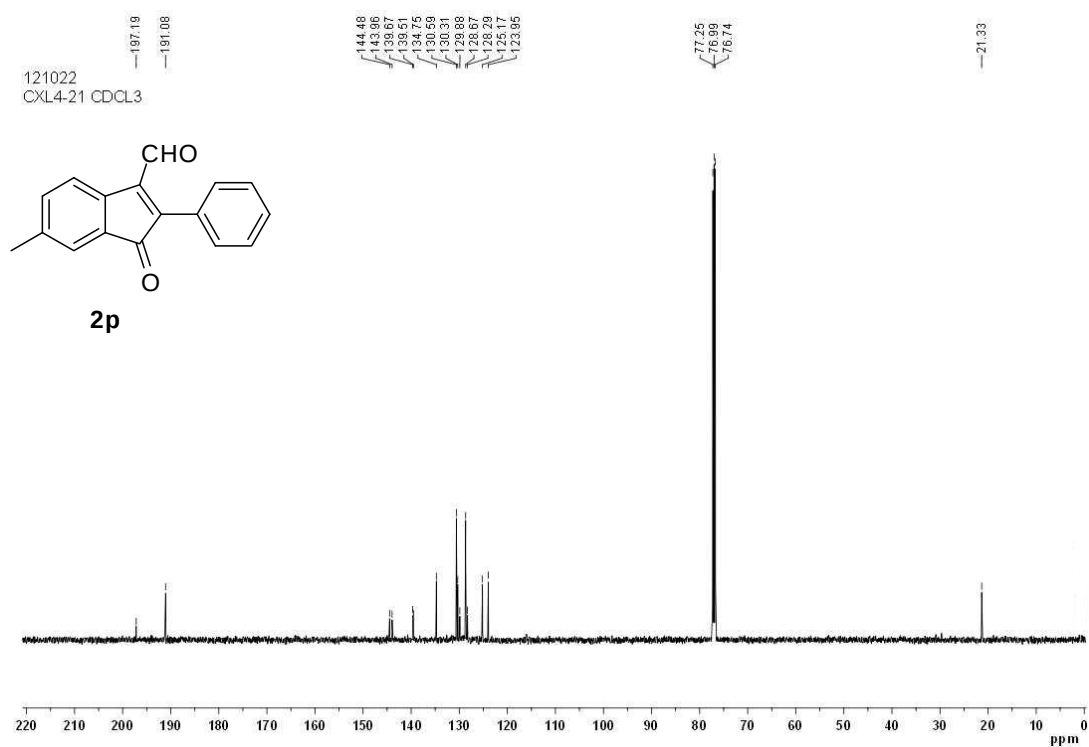


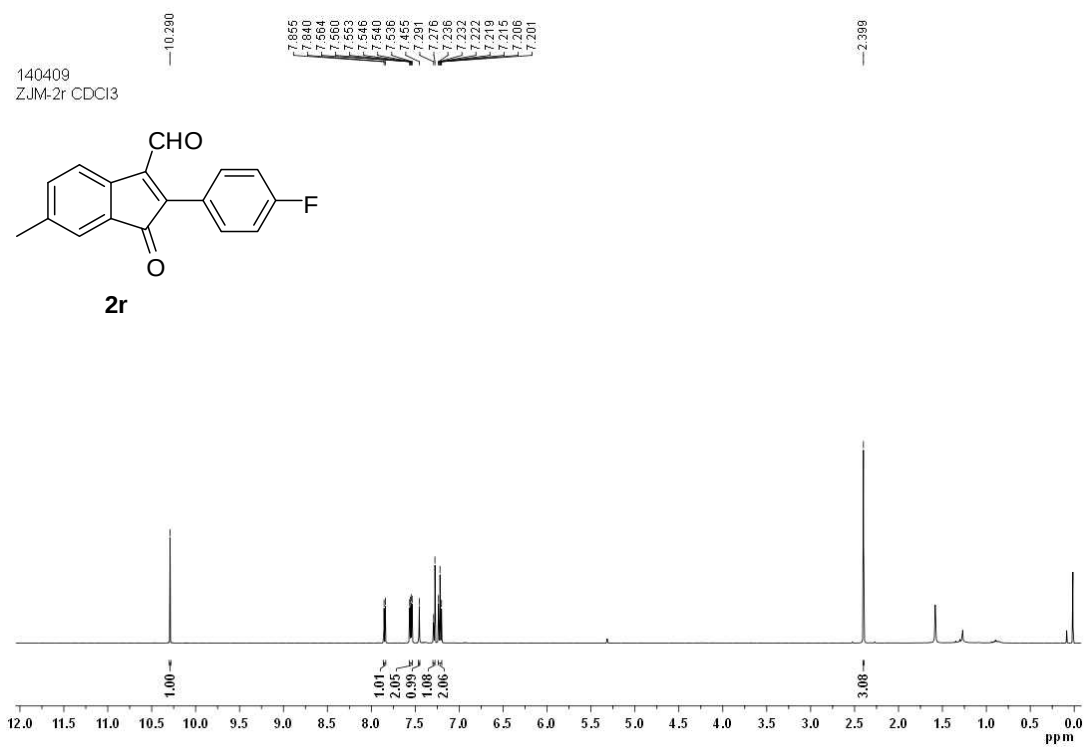
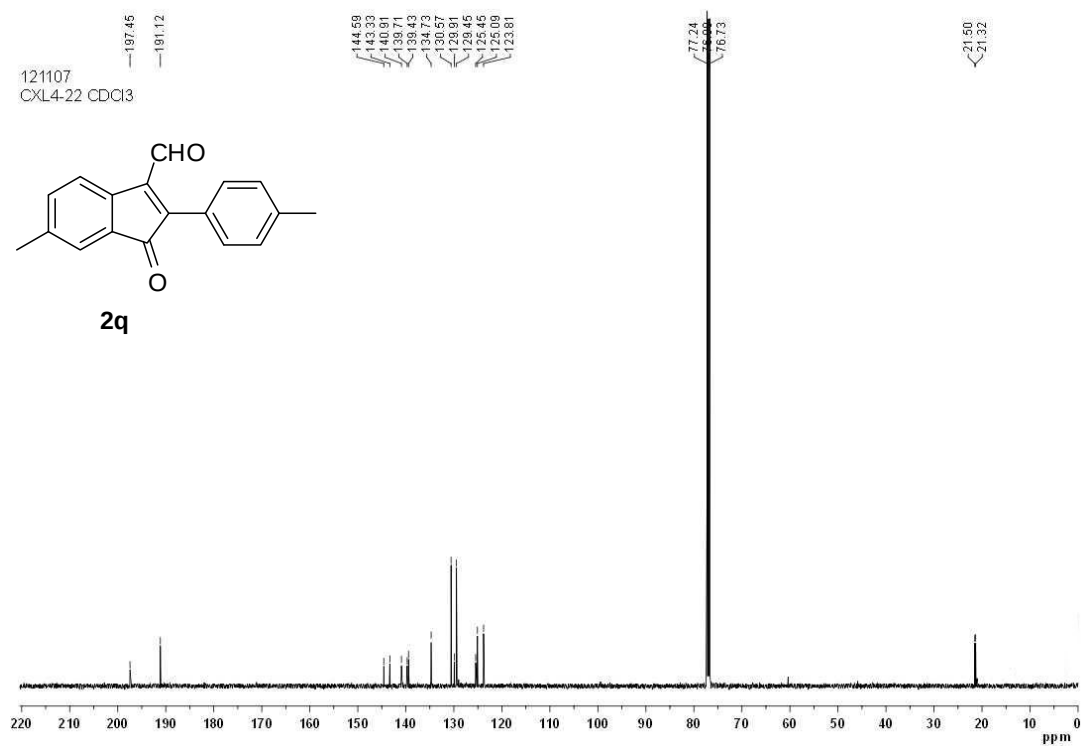


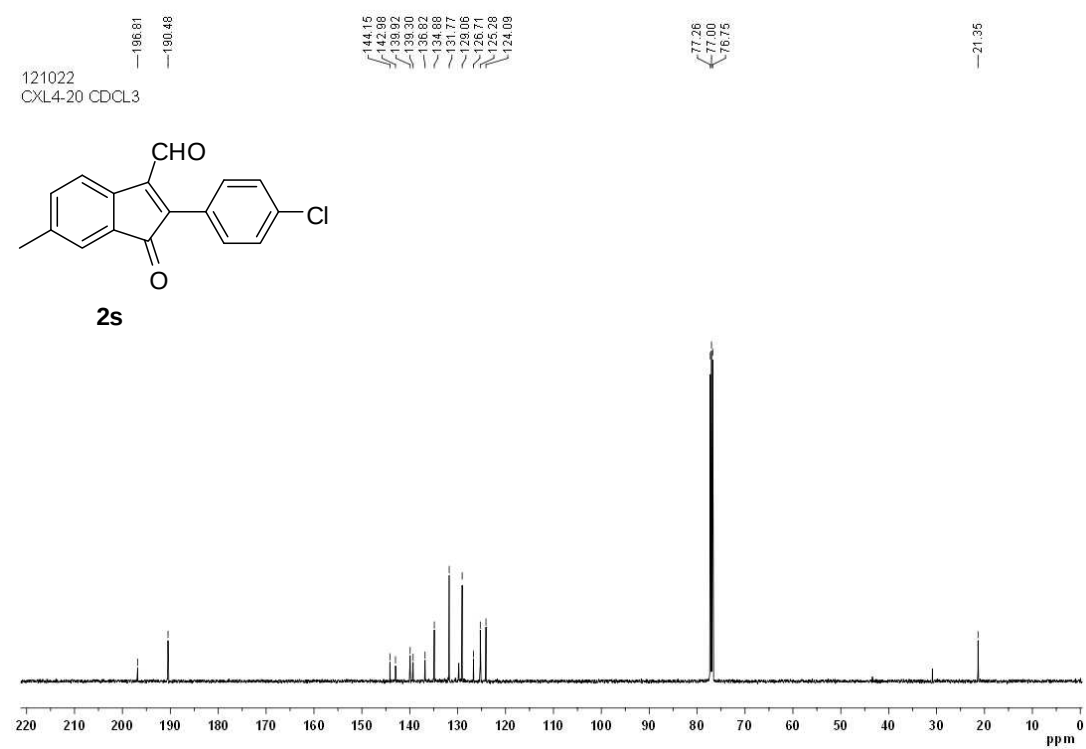
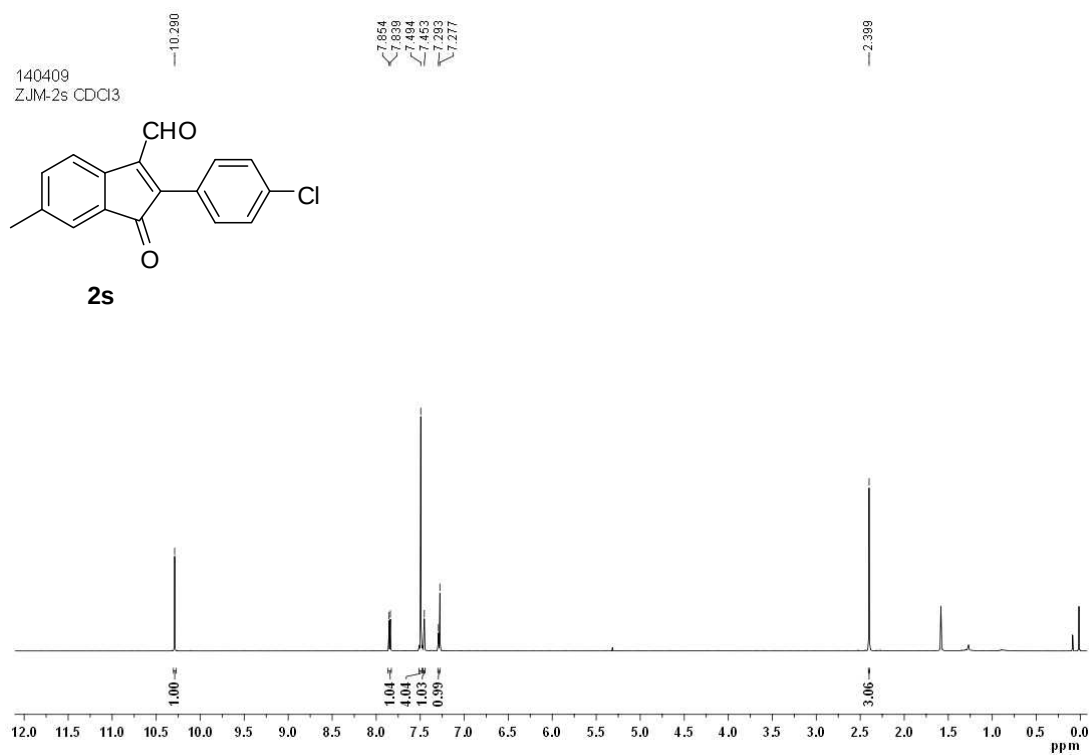


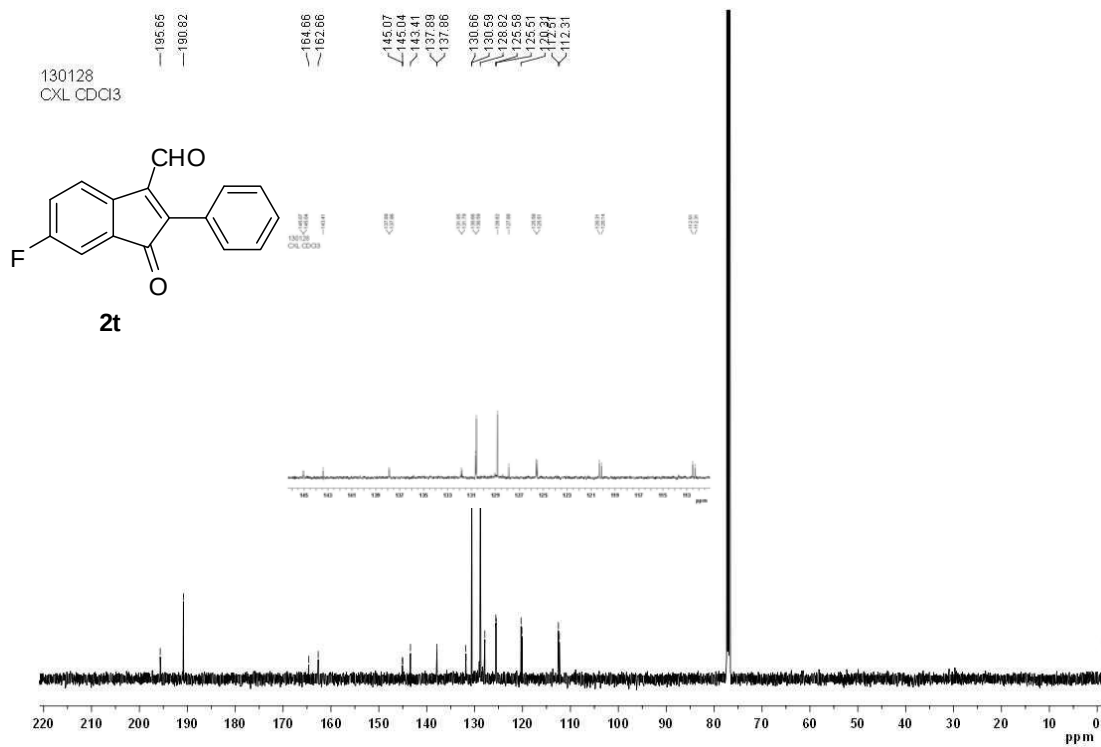
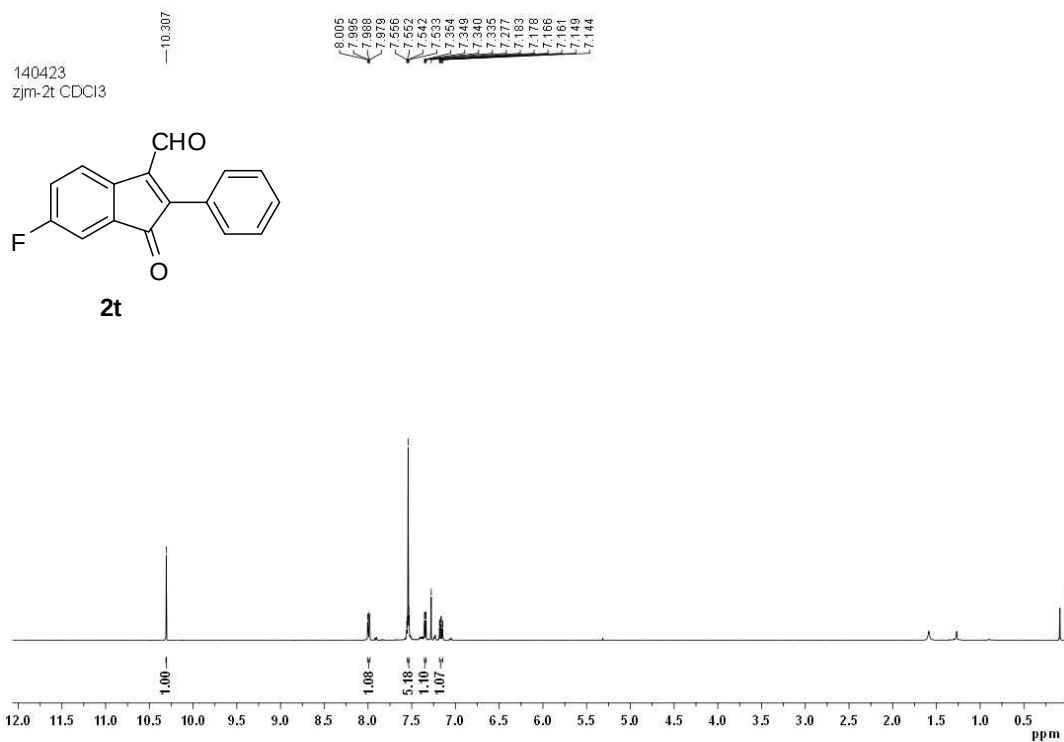


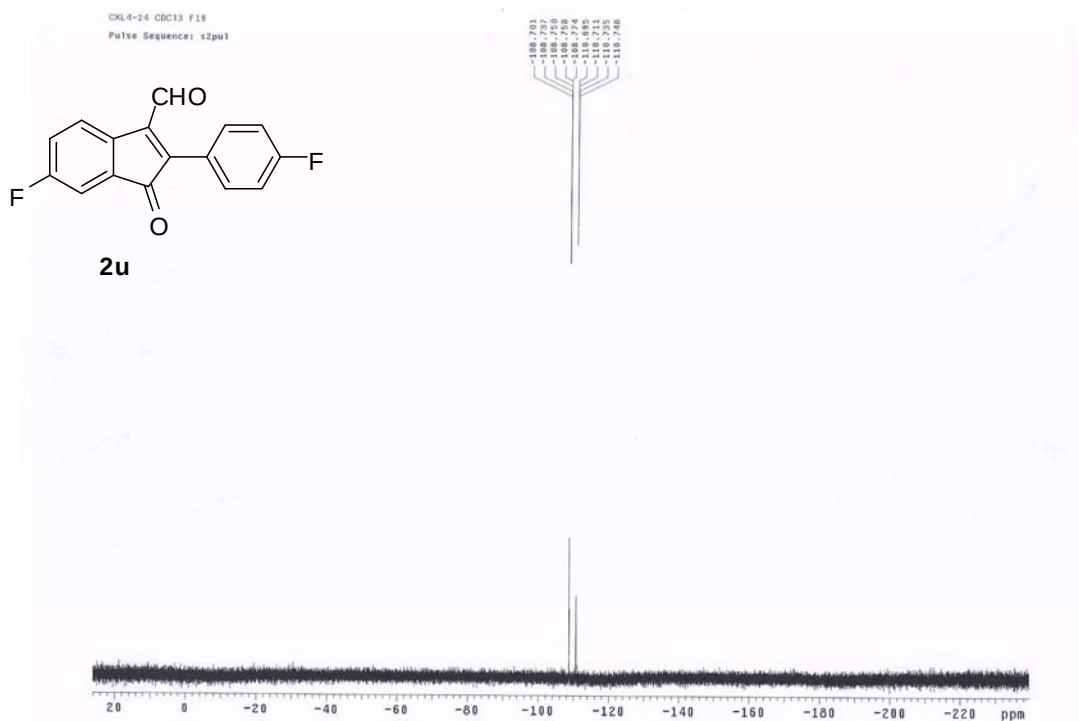
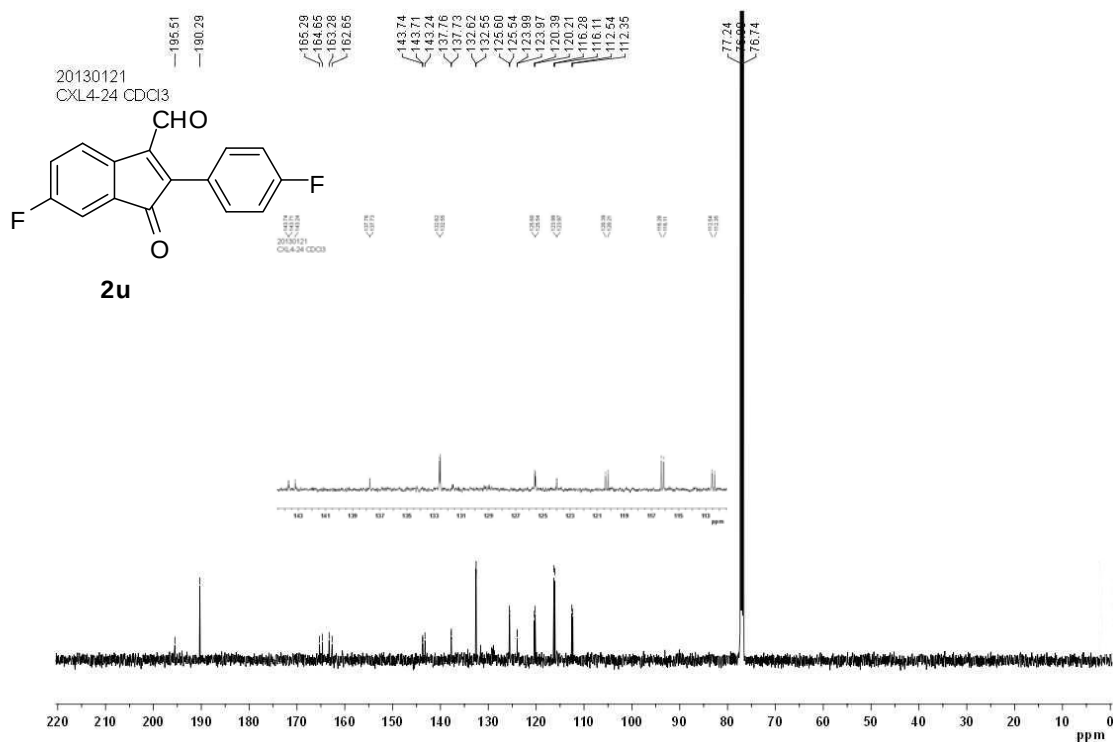


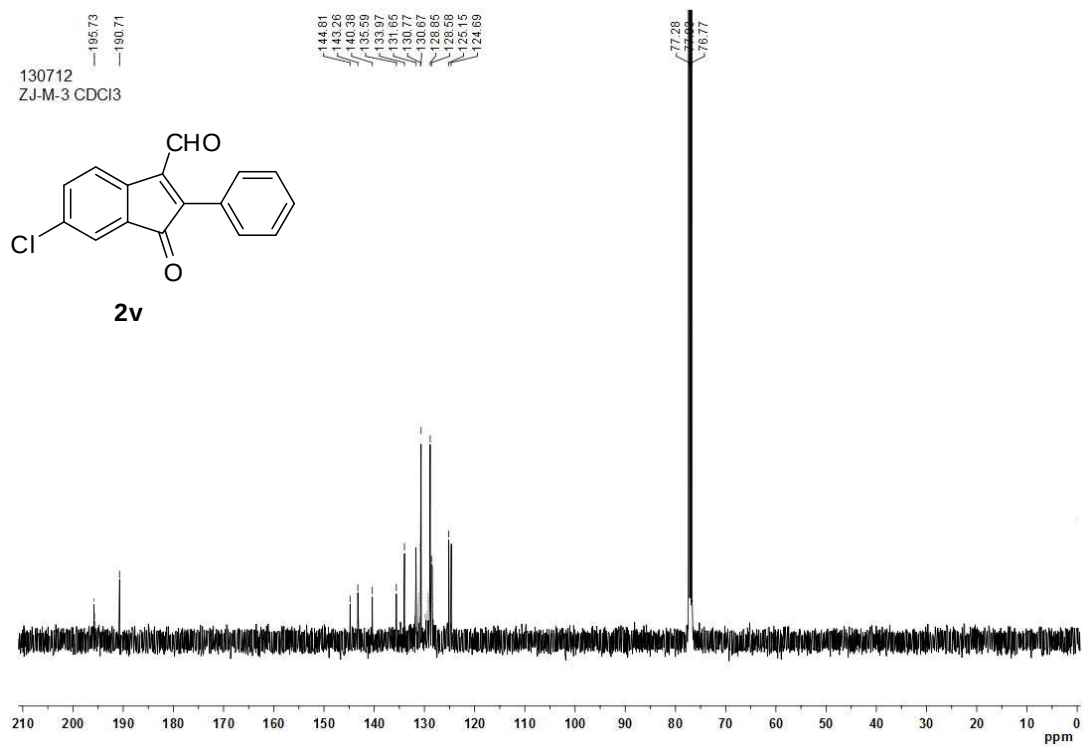
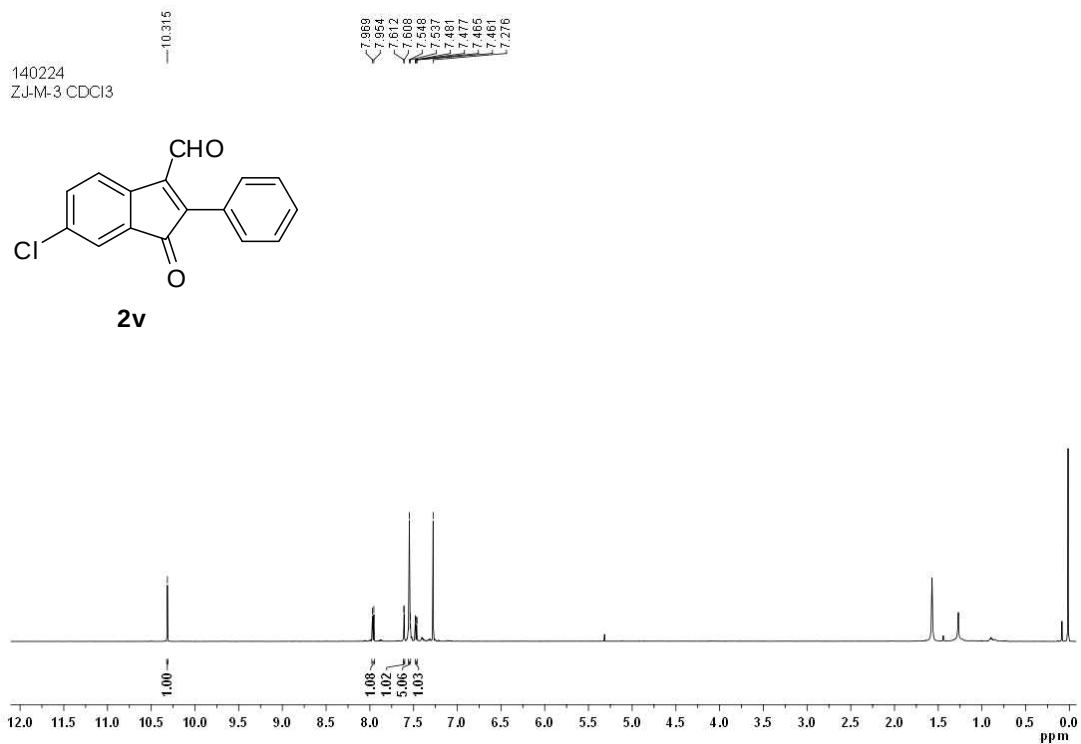


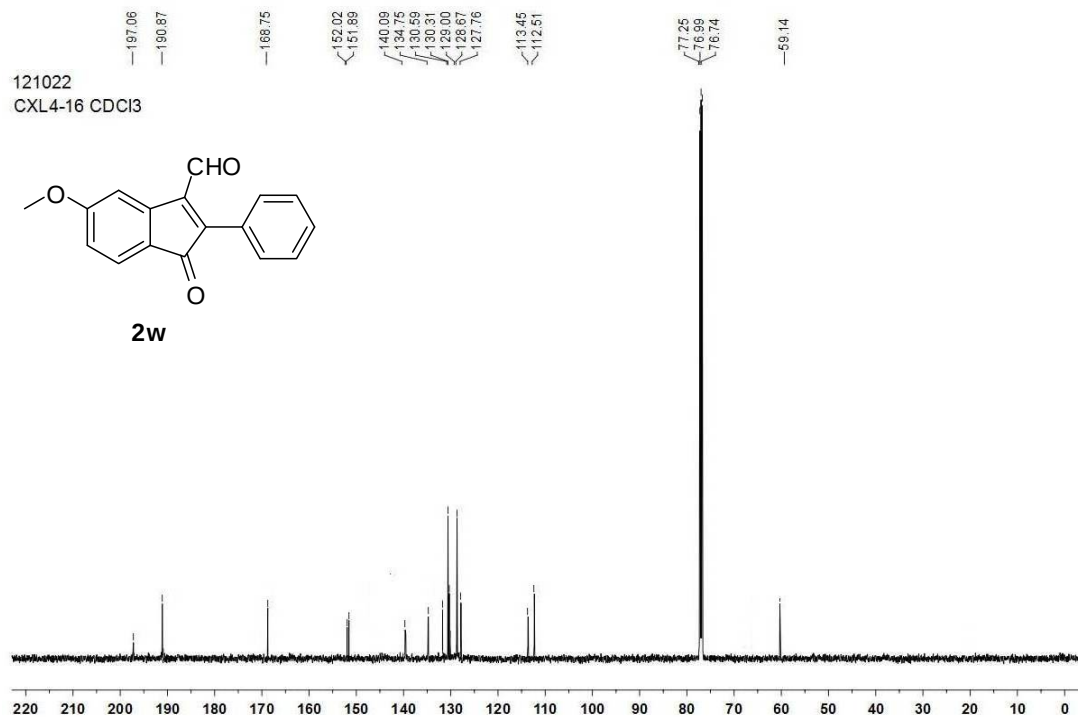
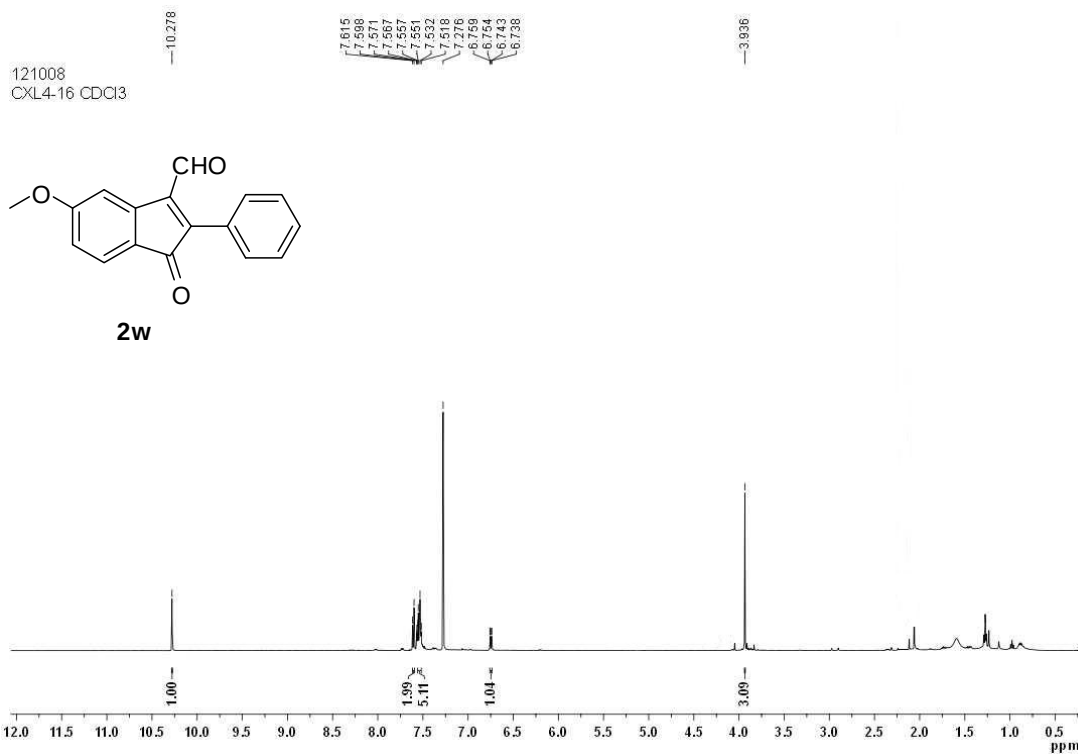


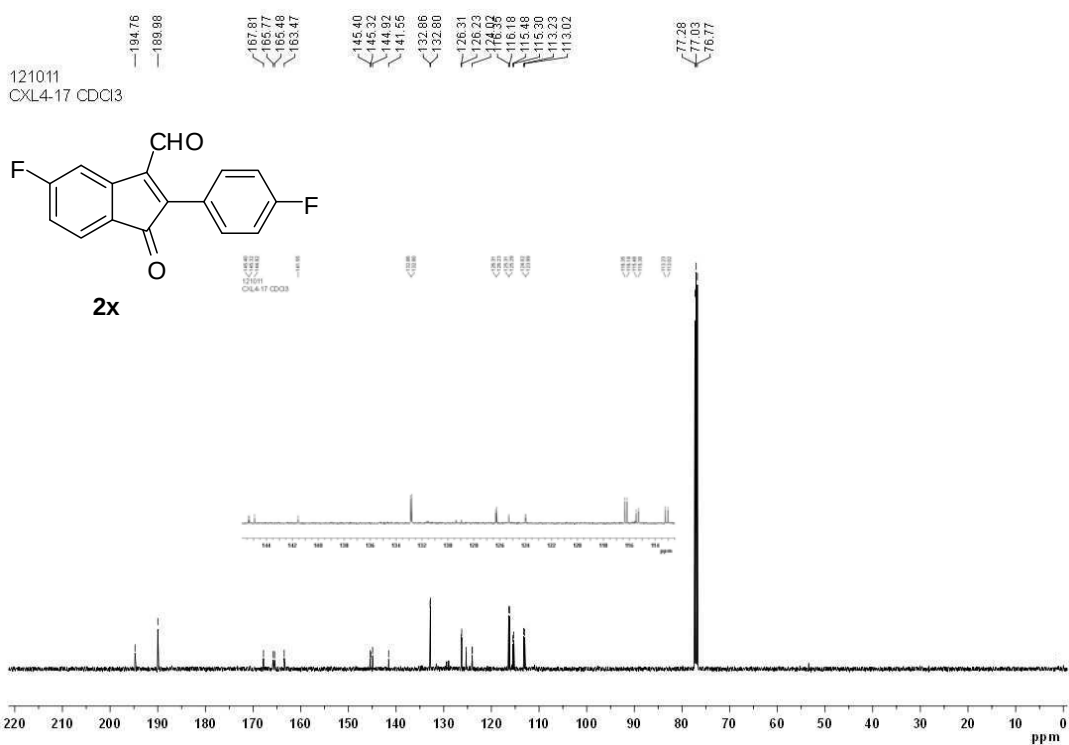
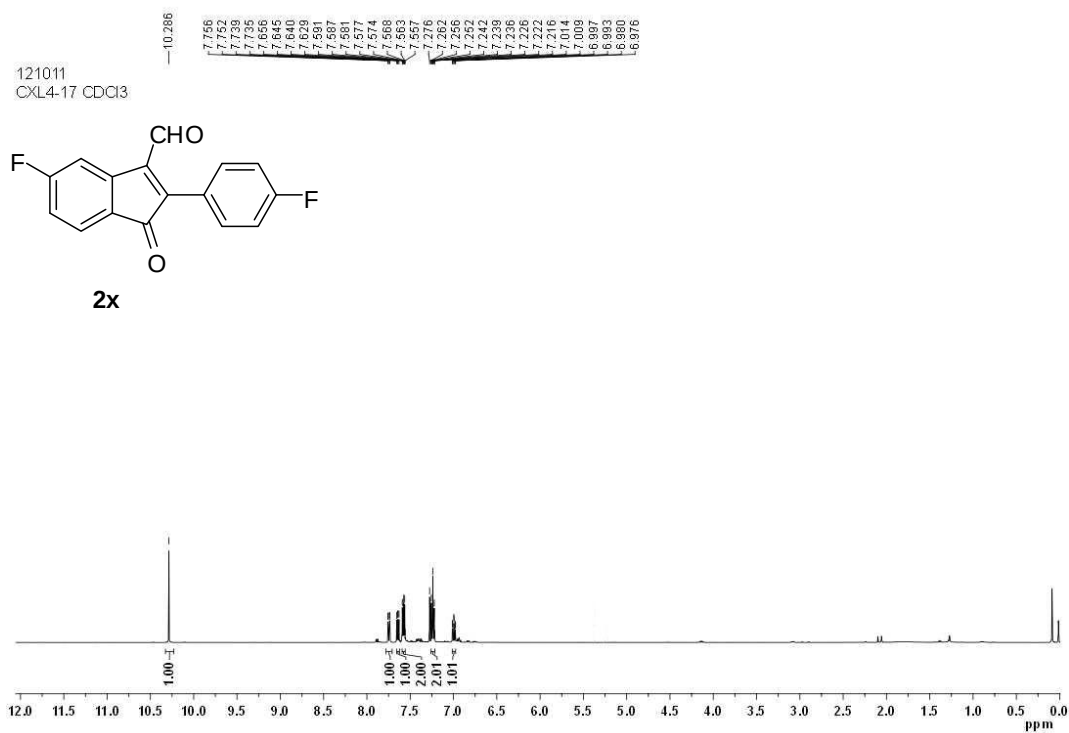


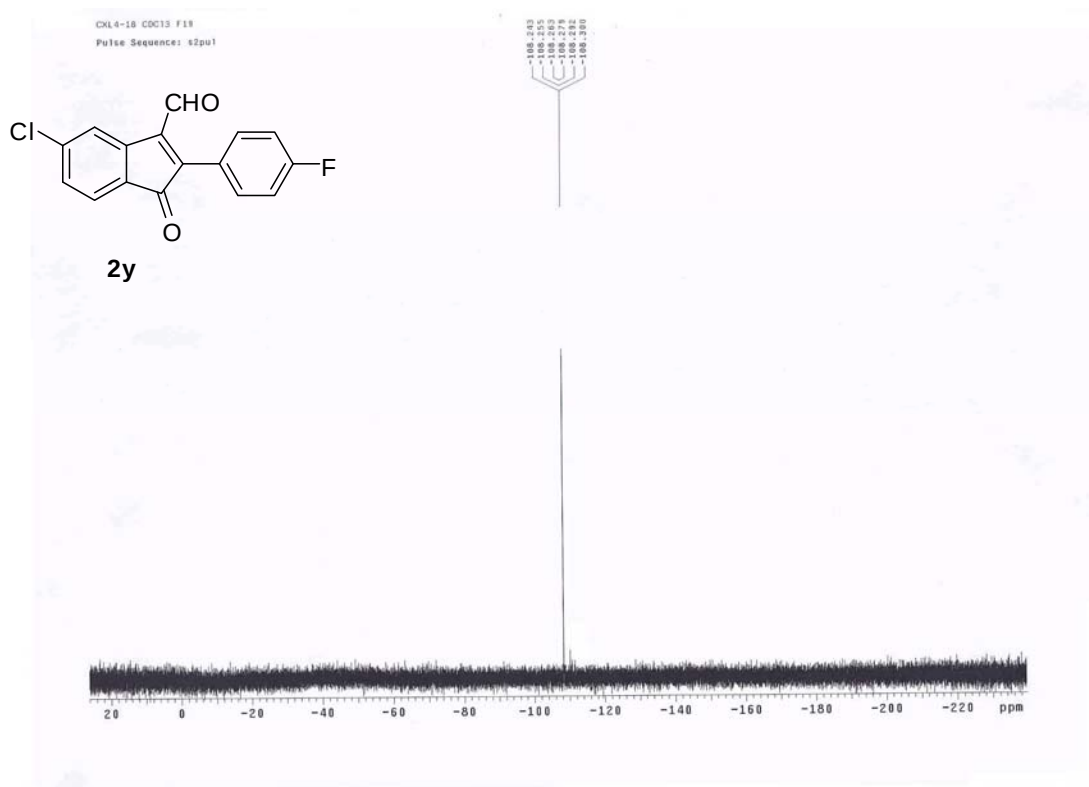
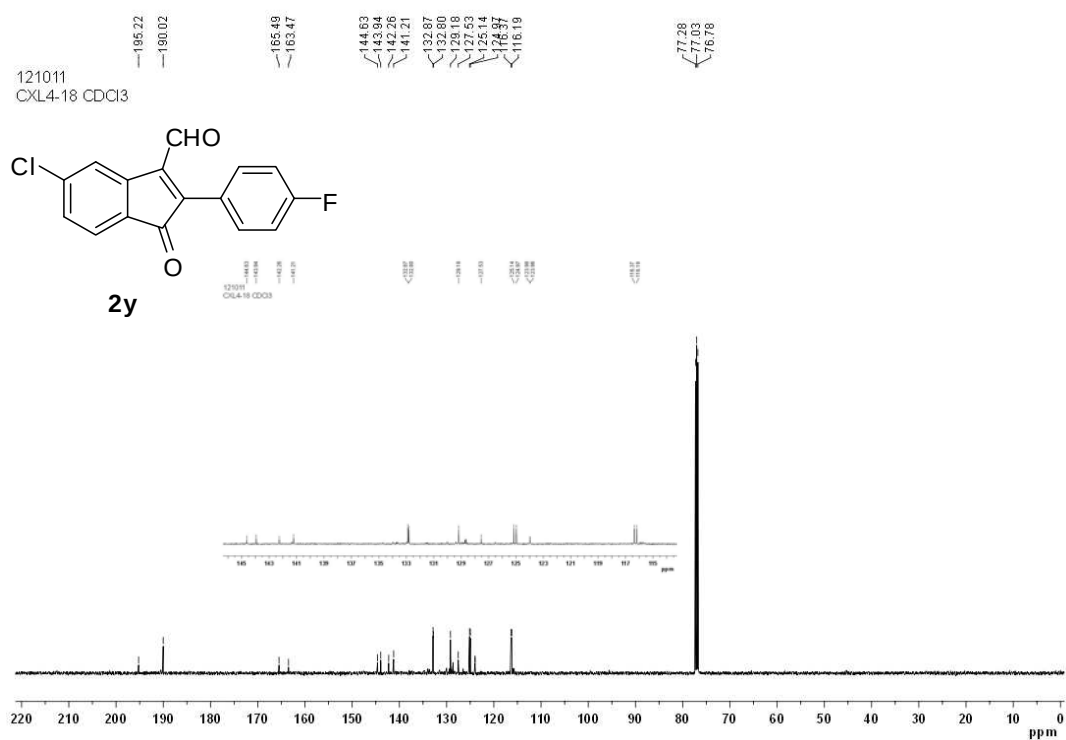


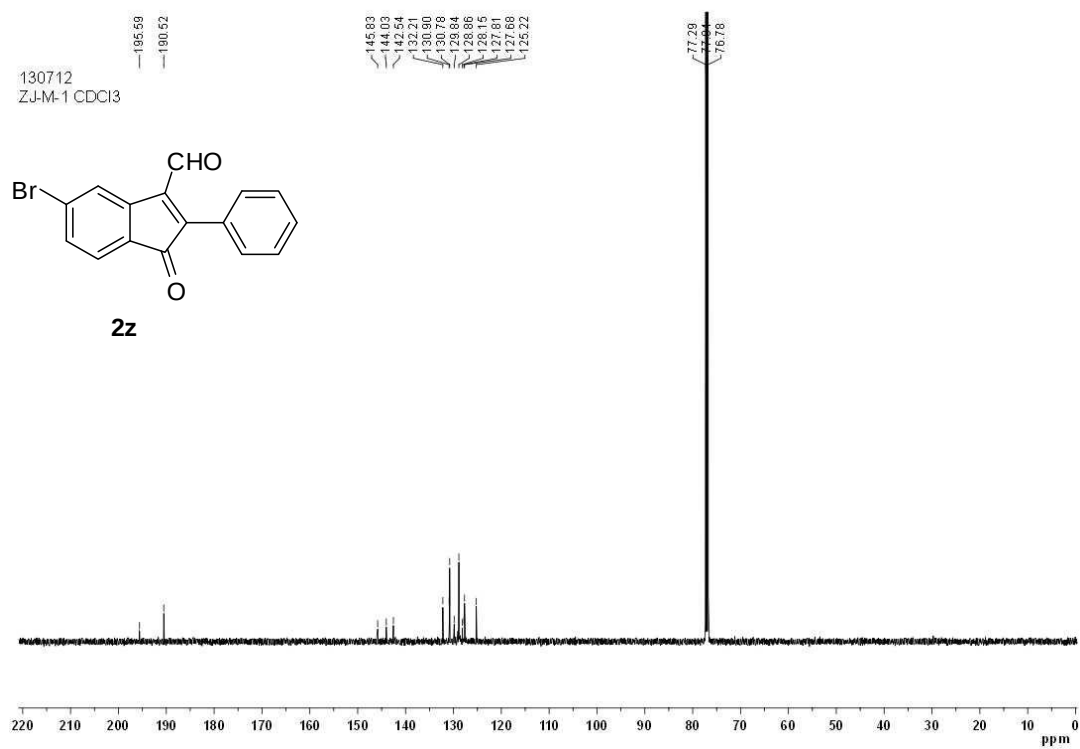
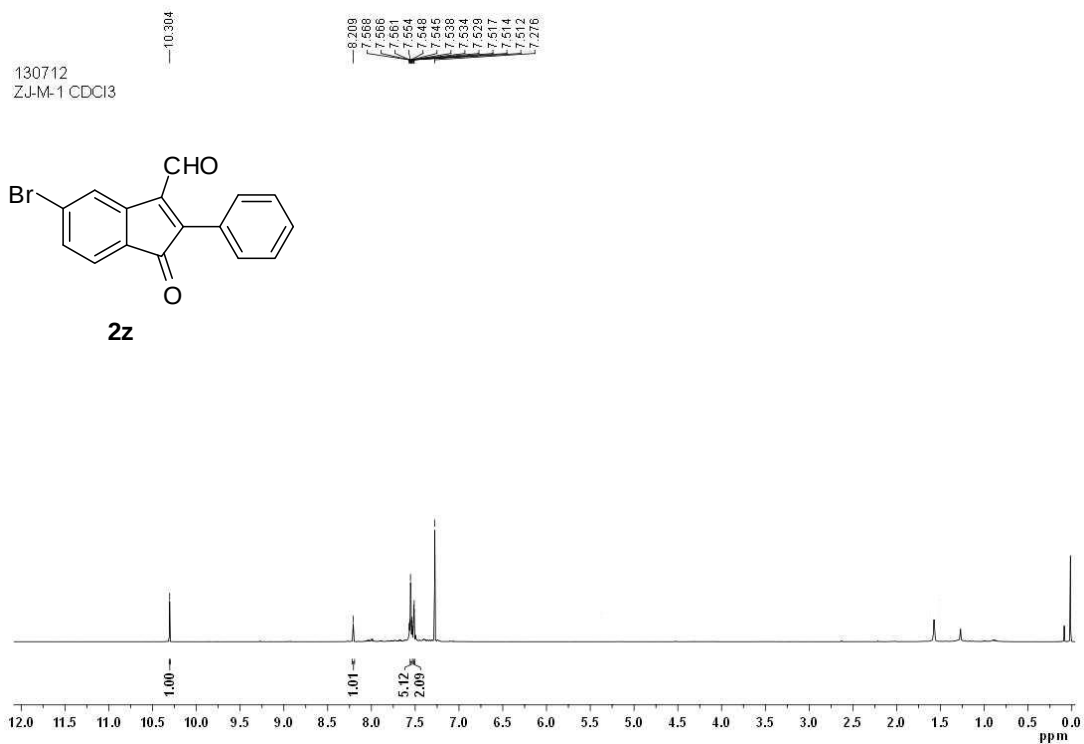


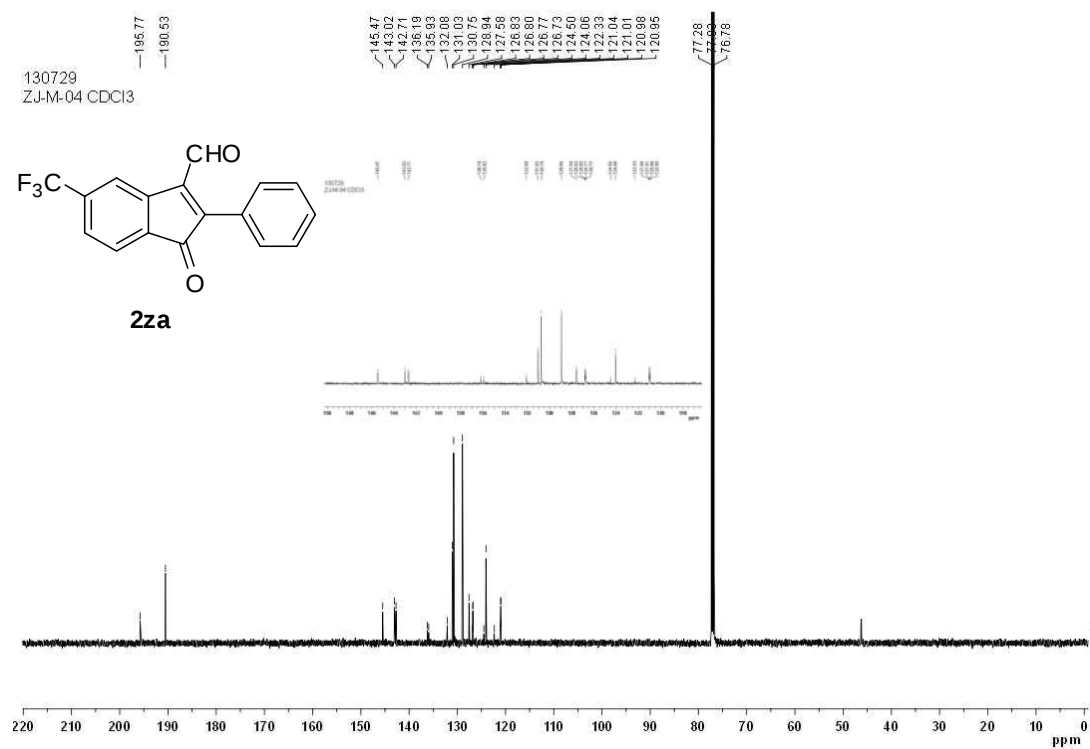
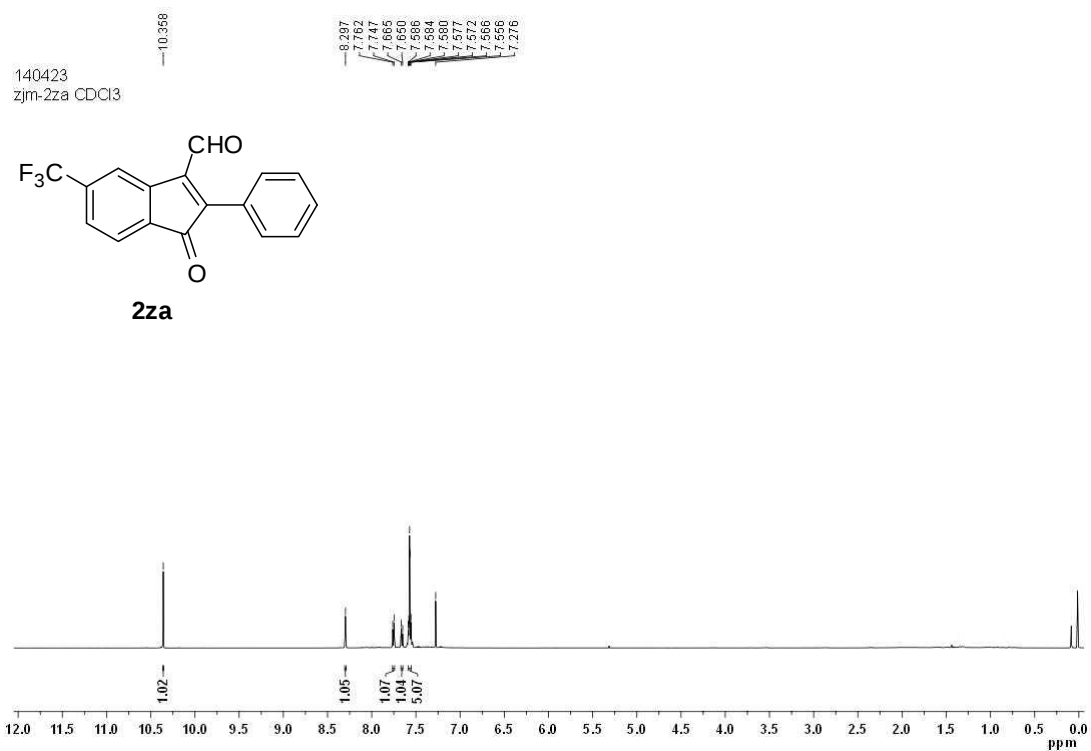


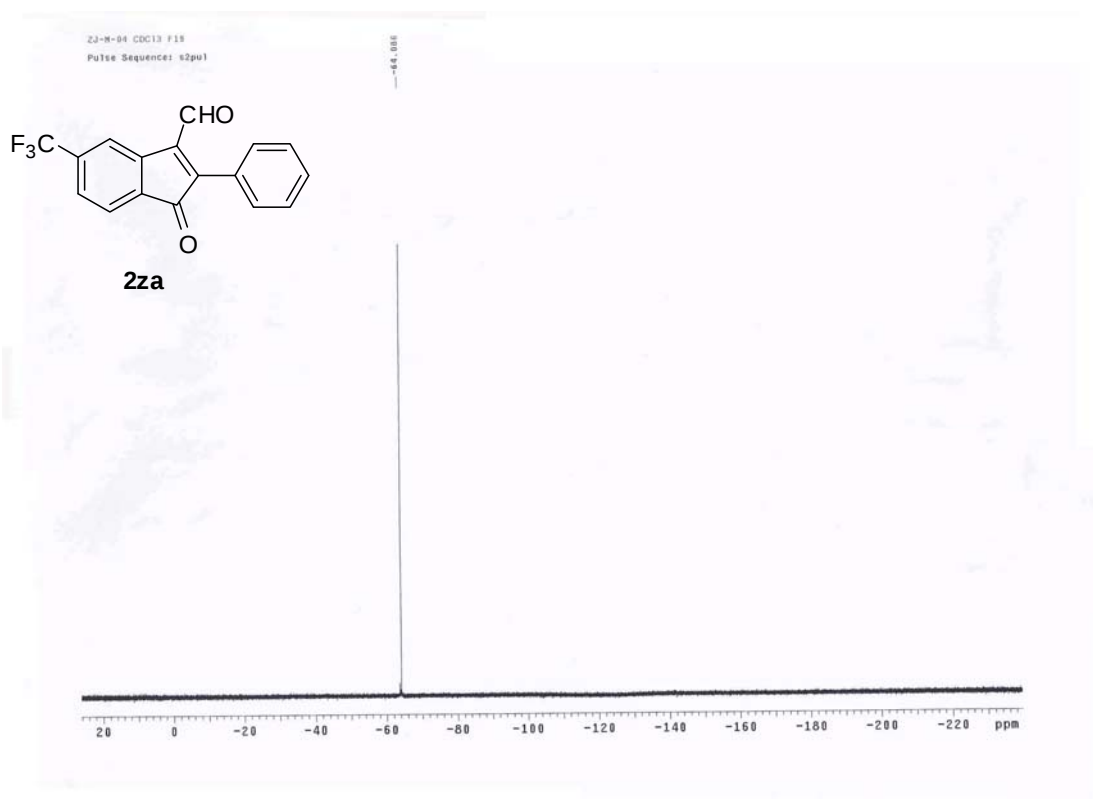




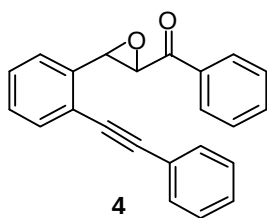








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