**Supplementary Information**

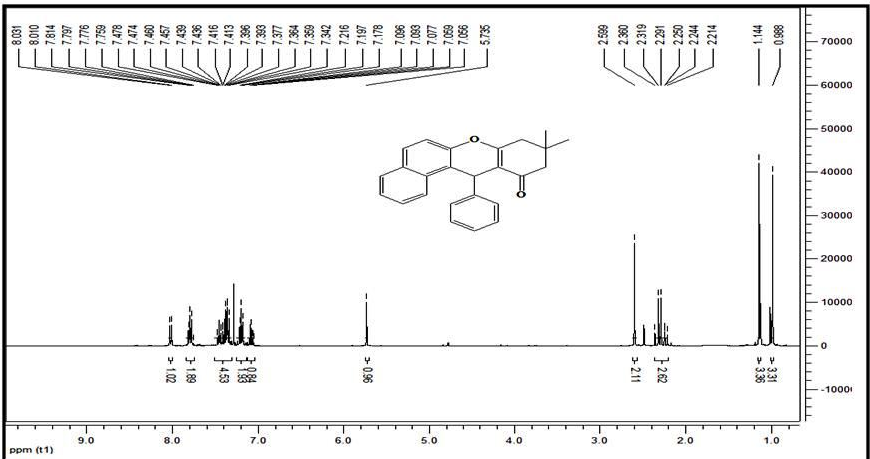
**Facile and rapid synthesis of divers xanthene derivatives using Lanthanum(III) chloride/chloroacetic acid as an efficient and reusable catalytic system under solvent-free conditions**

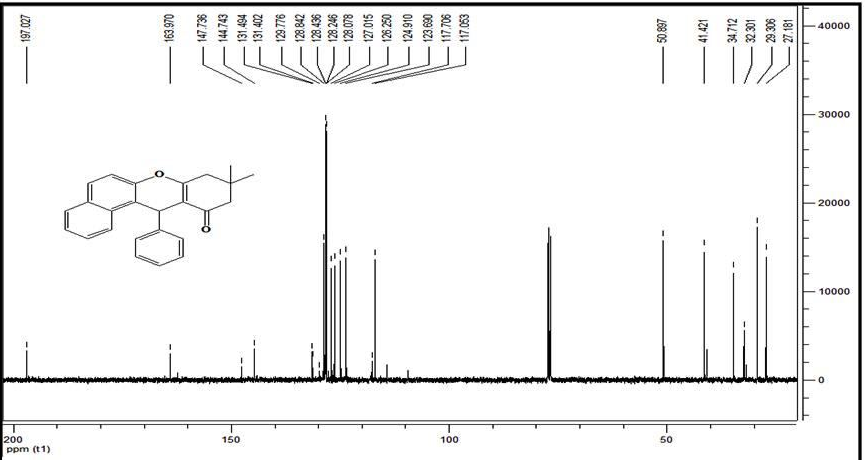
***Behjat Pouramiria, Maryam Shirvania and Esmat Tavakolinejad Kermania\****

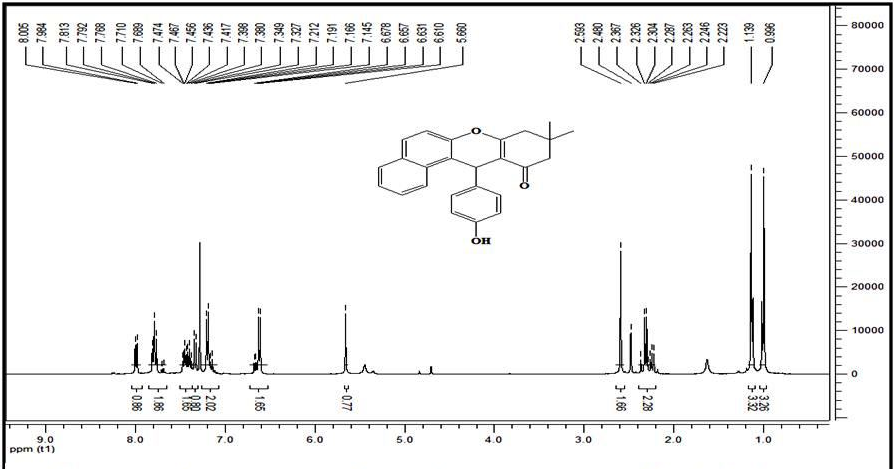
***aFaculty of Science, Depatrtment of Chemistry, Shahid Bahonar University of Kerman, Kerman, 76169, Iran.***

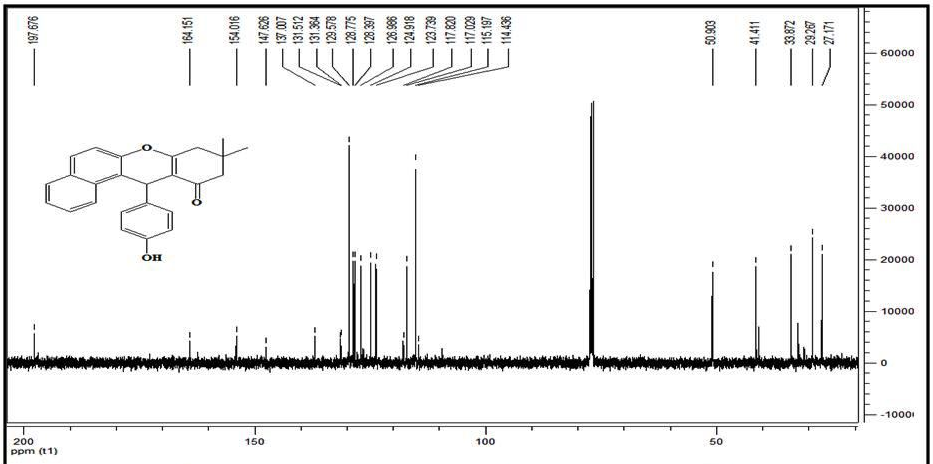
**Spectra**

1H NMR and 13C NMR of 9,9-dimethyl-12-phenyl-9,10-dihydro-8H-benzo[a]xanthen-11(12H)-one (**5a**):

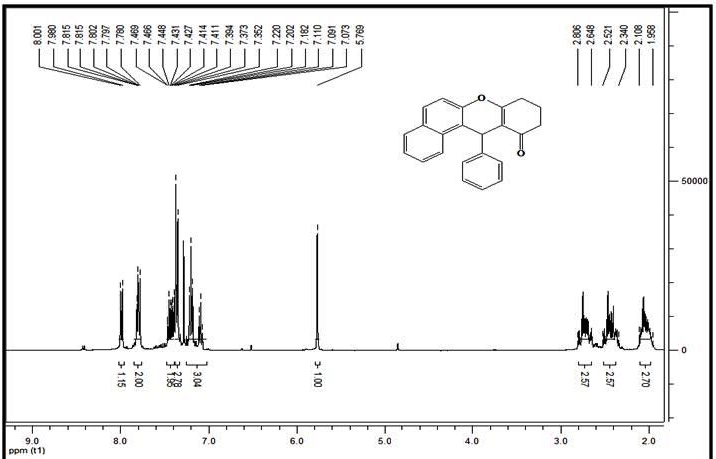


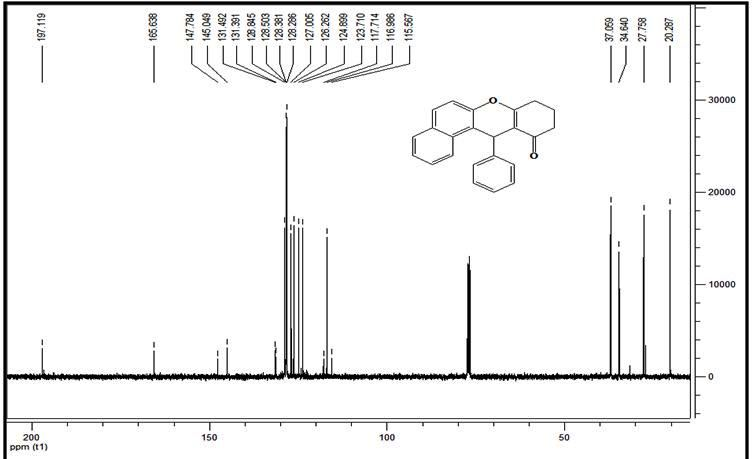


1H NMR and 13C NMR of 12-(4-hydroxyphenyl)-9,9-dimethyl-9,10-dihydro-8H-benzo[a]xanthen-11(12H)-one **(5b):**

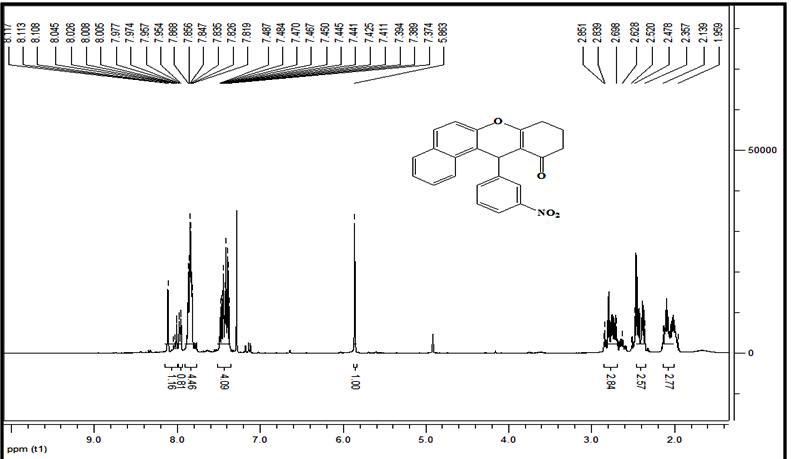


1H NMR and 13C NMR of 12-phenyl-9,10-dihydro-8H-benzo[a]xanthen-11(12H)-one **(5c):**

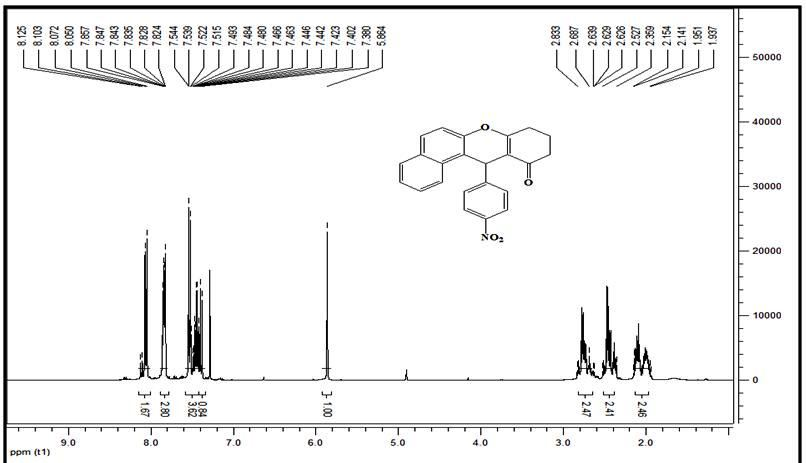


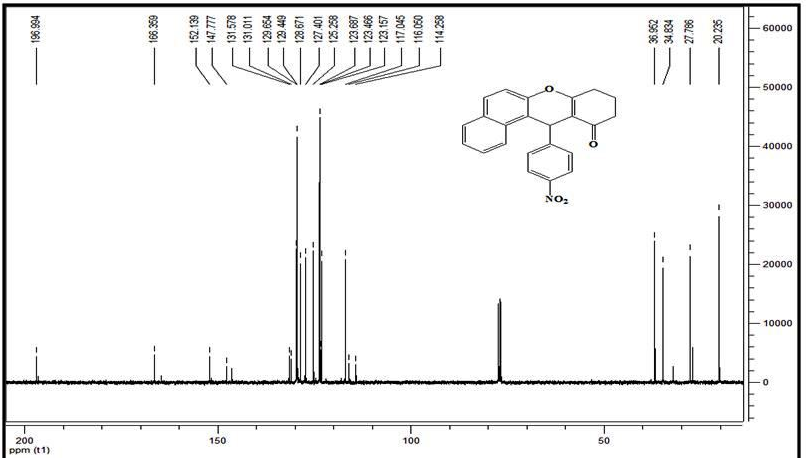


1H NMR of 12-(3-nitrophenyl)-9,10-dihydro-8H-benzo[a]xanthen-11(12H)-one **(5d)**

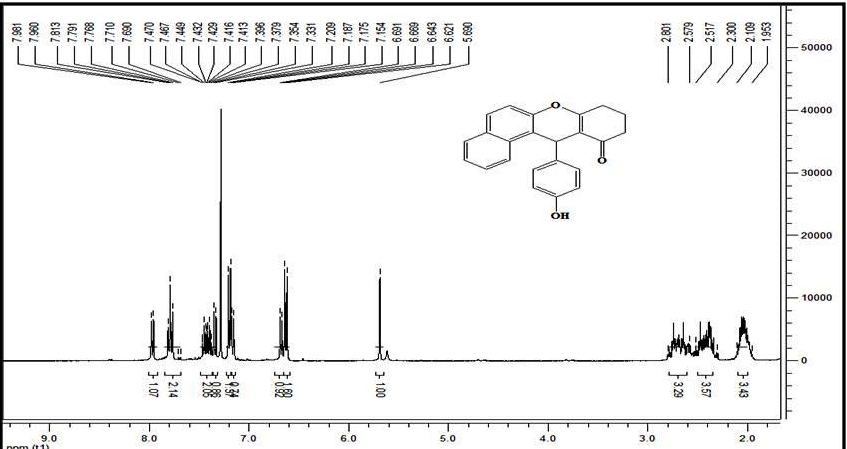


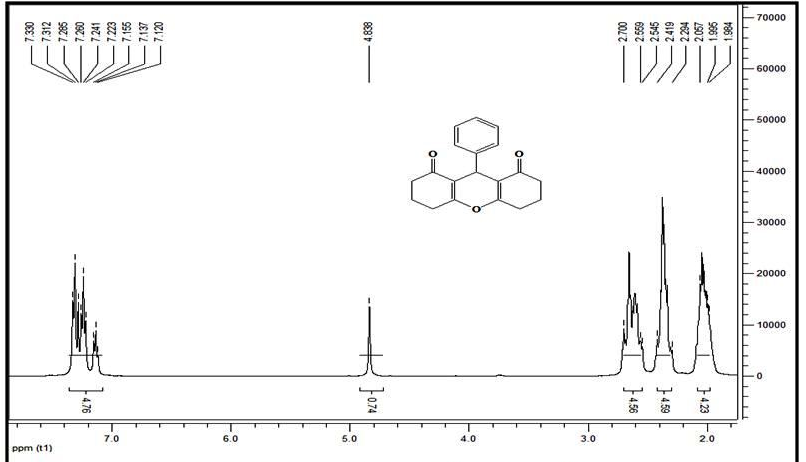
1H NMR and 13C NMR of 12-(4-nitrophenyl)-9,10-dihydro-8H-benzo[a]xanthen-11(12H)-one **(5e):**

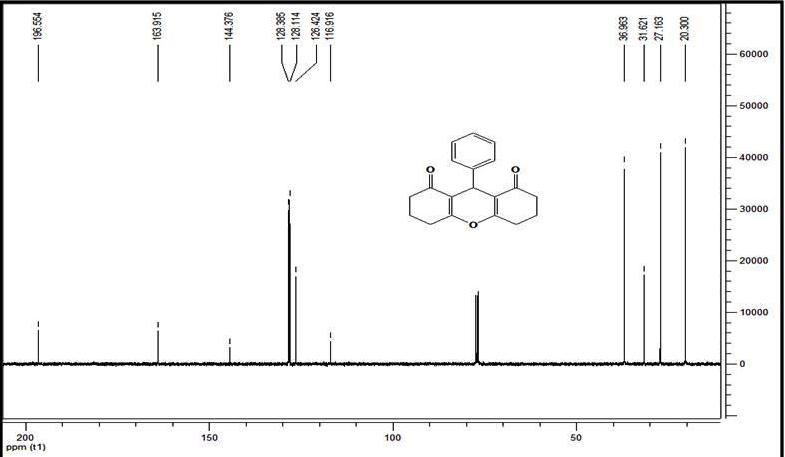


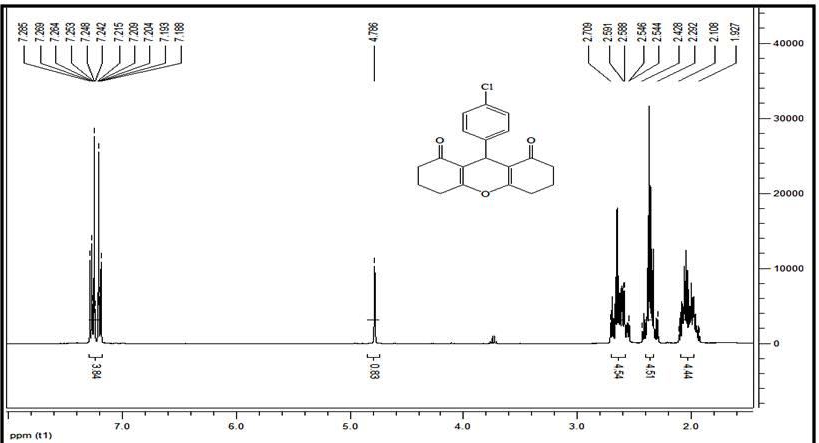


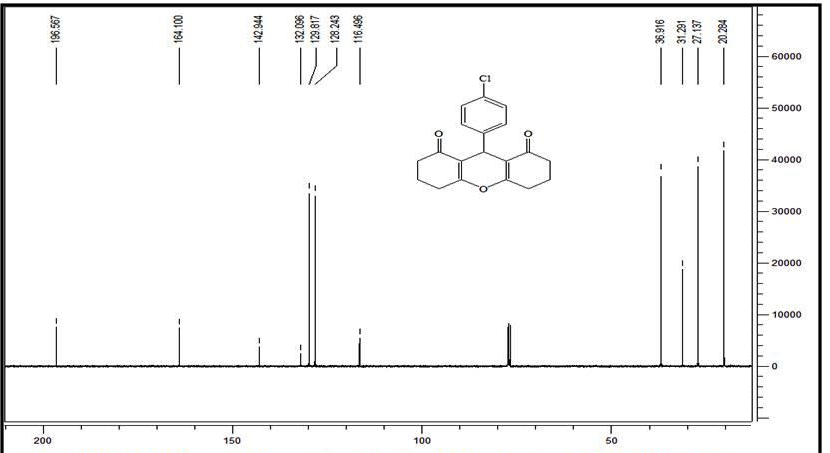
1H NMR and 13C NMR of 9,10 -dihydro-12-(4-hydroxyphenyl)-8H-benzo[a]xanthene-11(12H)-one (**5f**):



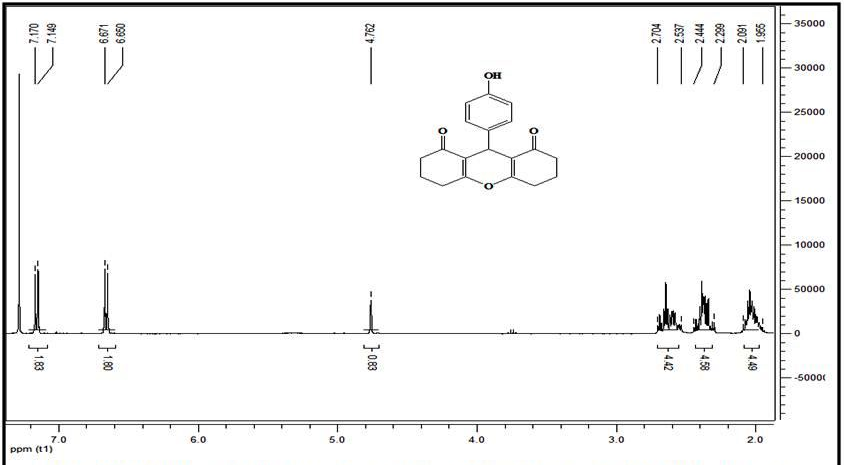
1H NMR and 13C NMR of 3,4,7-tetrahydro-9-phenyl-2H-xanthene-1,8(5H,9H)-dione **(6a) :**

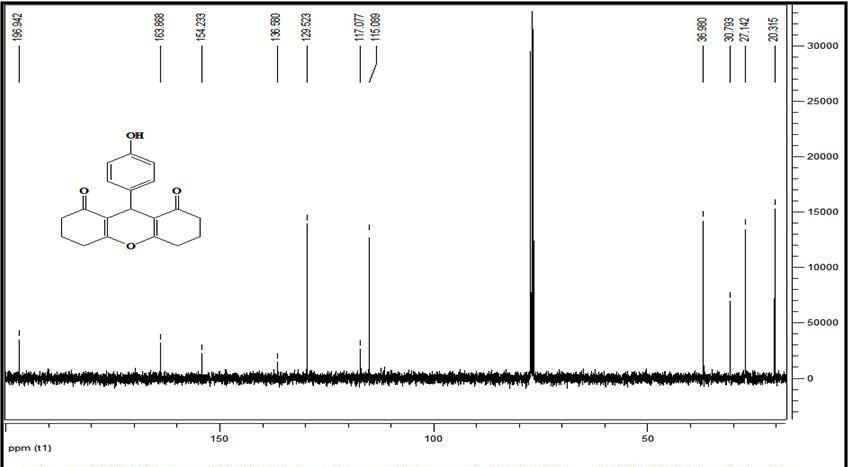


1H NMR and 13C NMR of 9-(4-chiorophenyl)-3,4,6,7-tetrahydro-2H-xanthene-1,8(5H,9H)-dione **(6b)** :

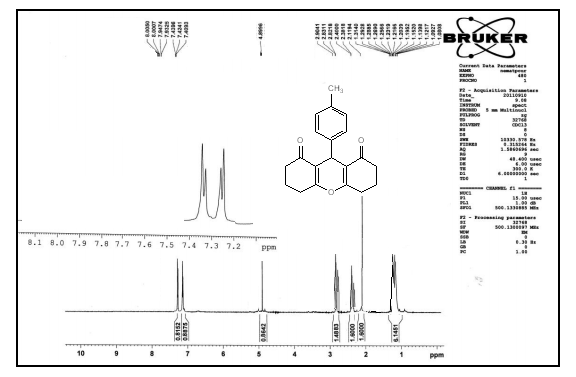


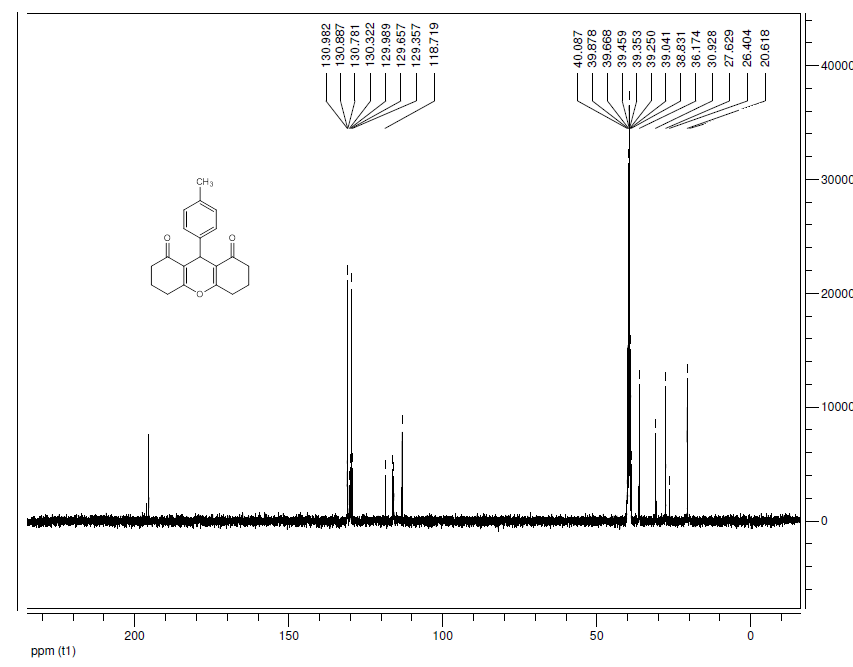
1H NMR and 13C NMR of 3,4,7-tetrahydro-9-(4-hydroxyphenyl)-2H-xanthene-1,8(5H,9H)-dione **(6c):**



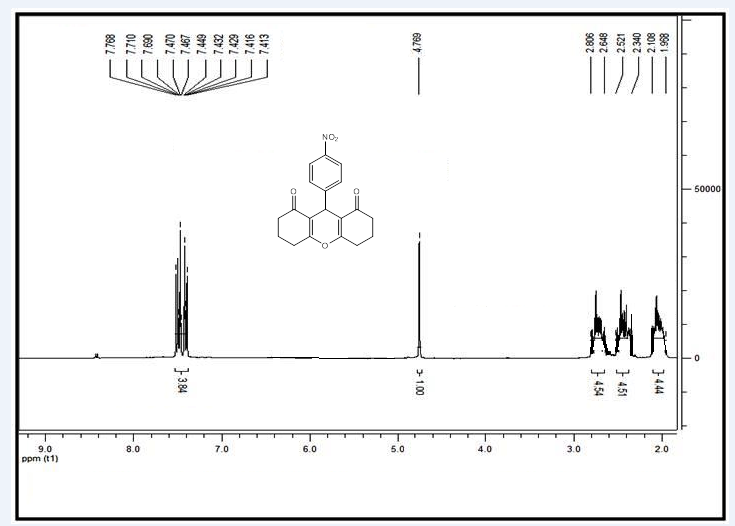


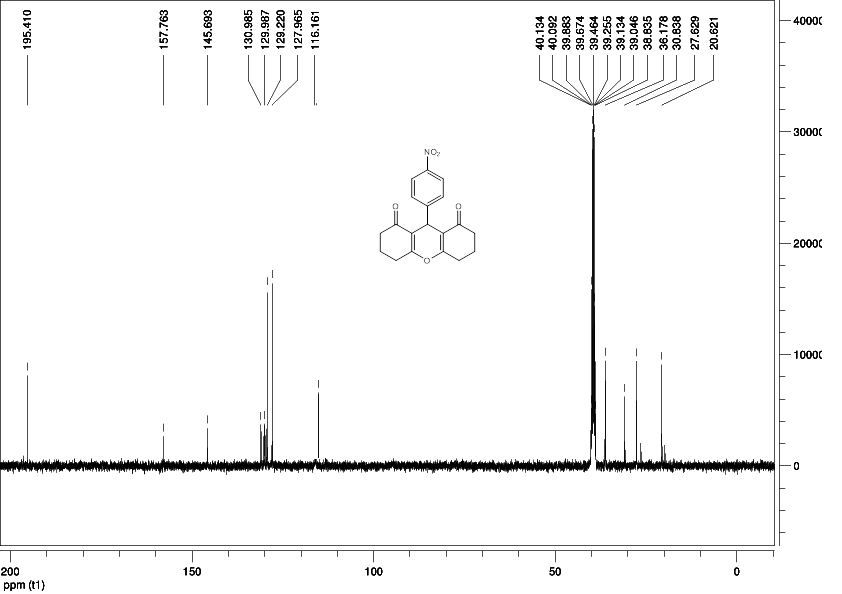
1H NMR and 13C NMR of 9-(p-tolyl)-3,4,5,6,7,9-hexahydro-1H-xanthene-1,8(2H)-dione (6d):



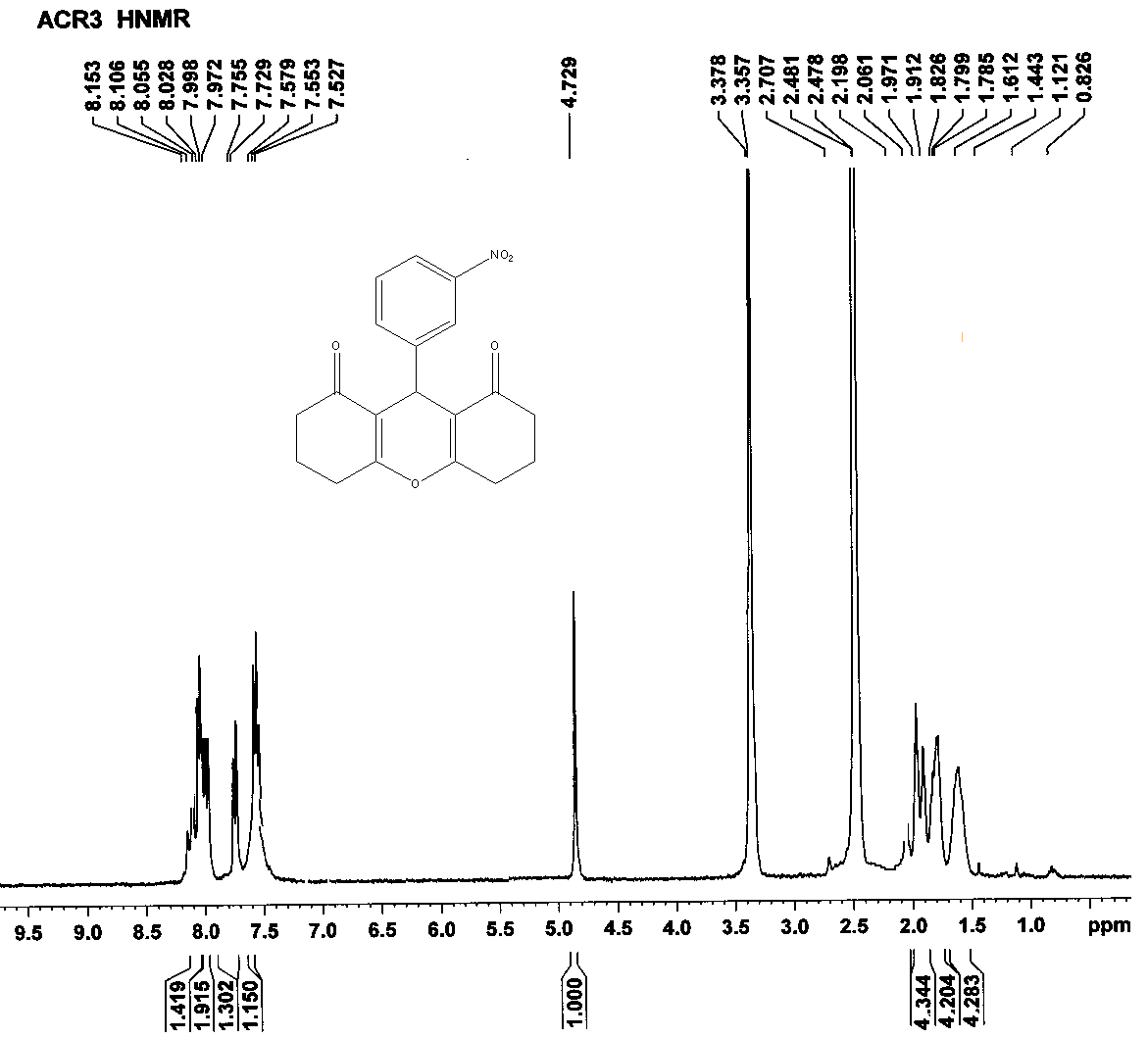


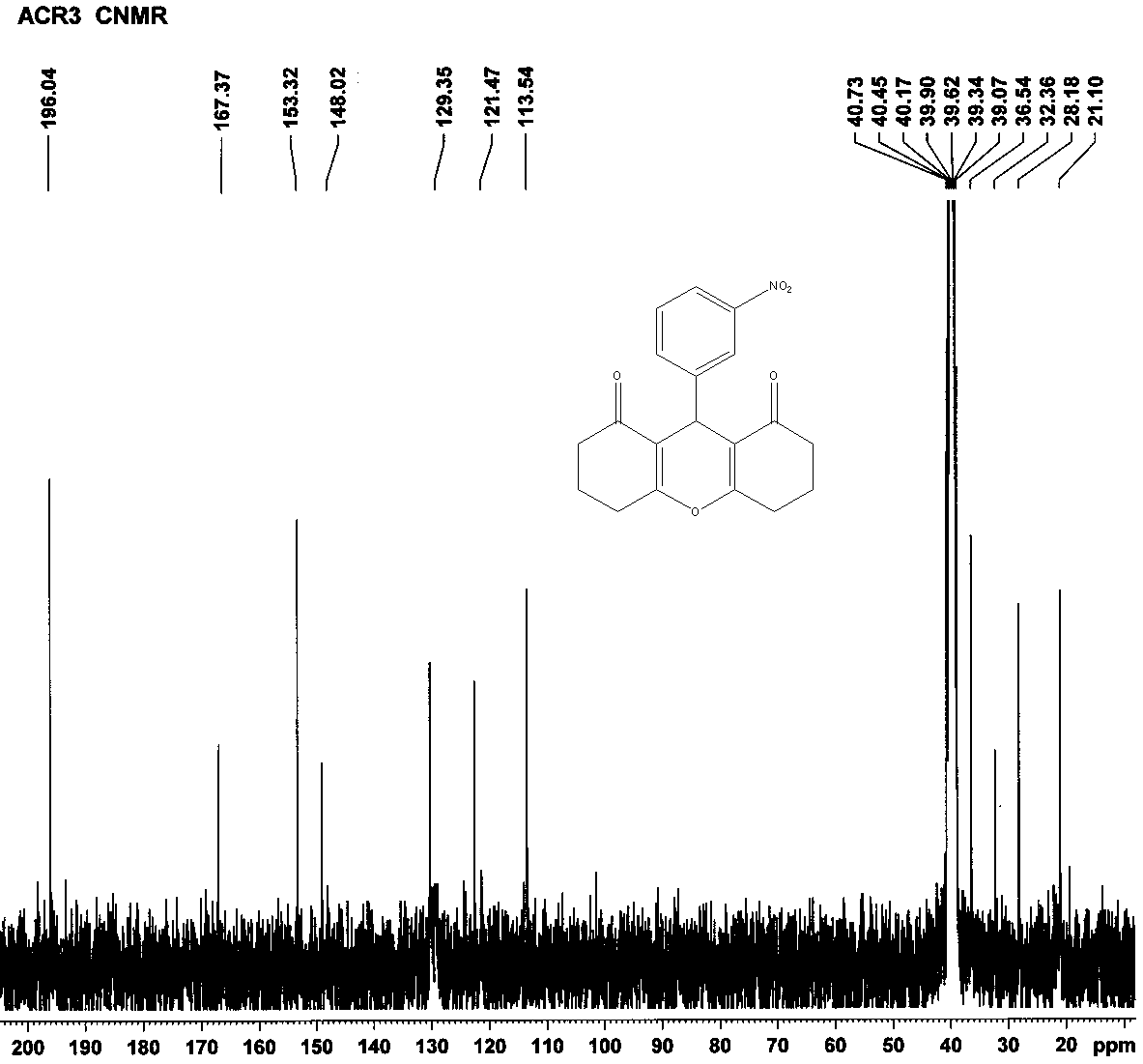
1H NMR and 13C NMR of 3,4,6,7-tetrahydro-9-(4-nitrophenyl)-2H-xanthene-1,8(5H,9H)-dione **(6e)**



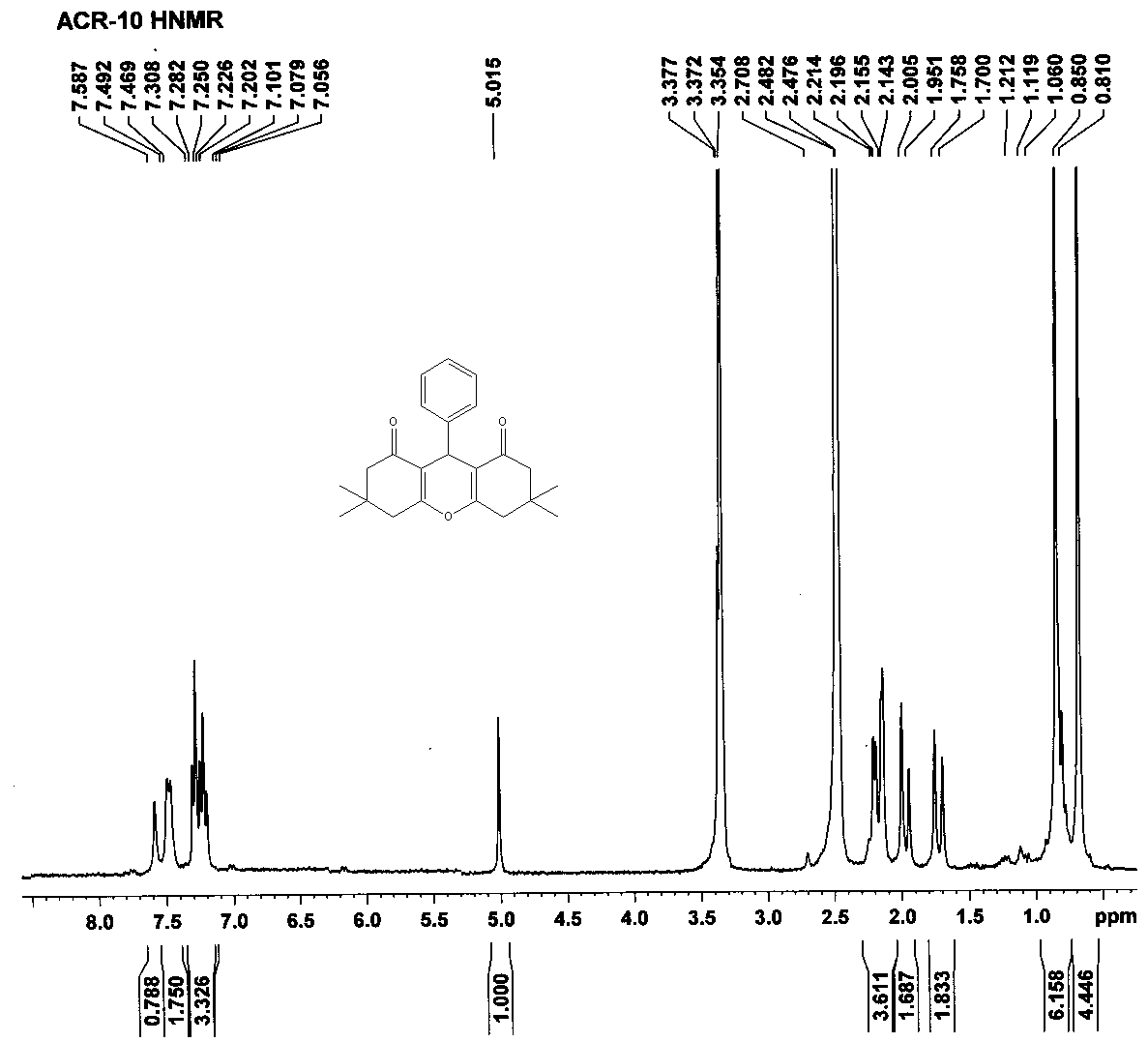


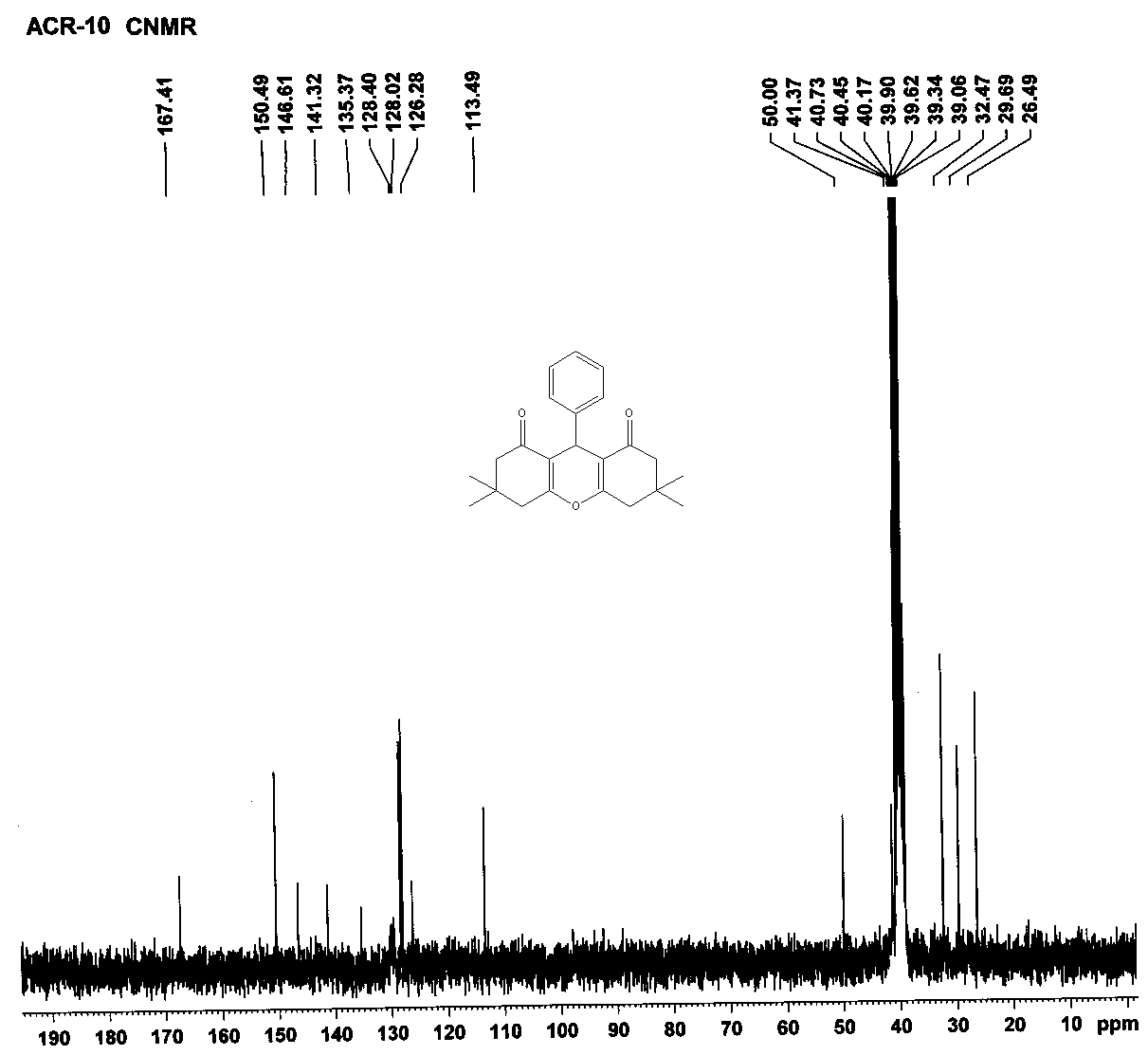
1H NMR and 13C NMR of 9-(3-nitrophenyl)-3,4,5,6,7,9-hexahydro-1H-xanthene-1,8(2H)-dione (6f ):



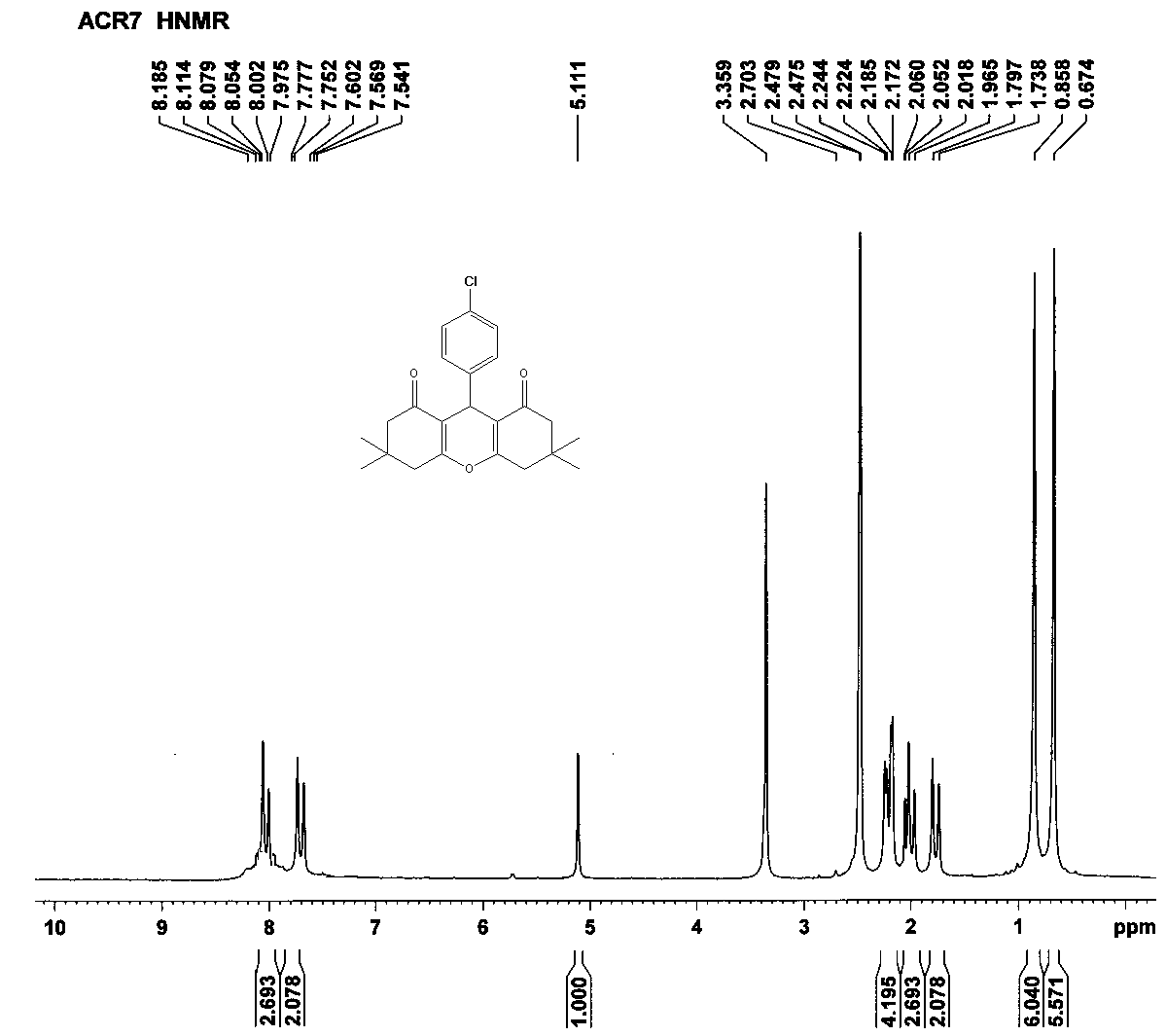


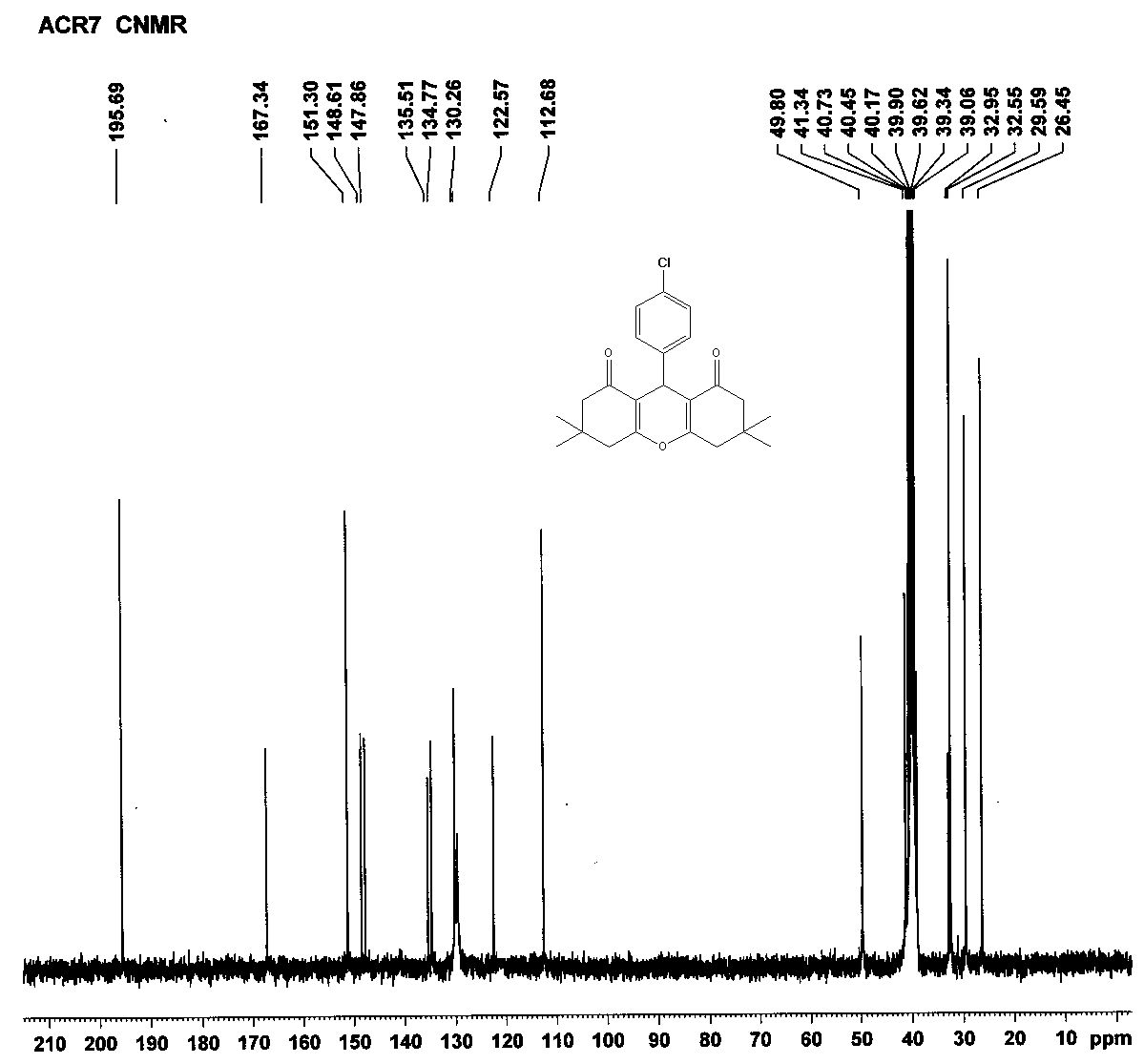
1H NMR and 13C NMR of 3,3,6,6-tetramethyl-9-phenyl-3,4,5,6,7,9-hexahydro-1H-xanthene-1,8(2H)-dione (6g):



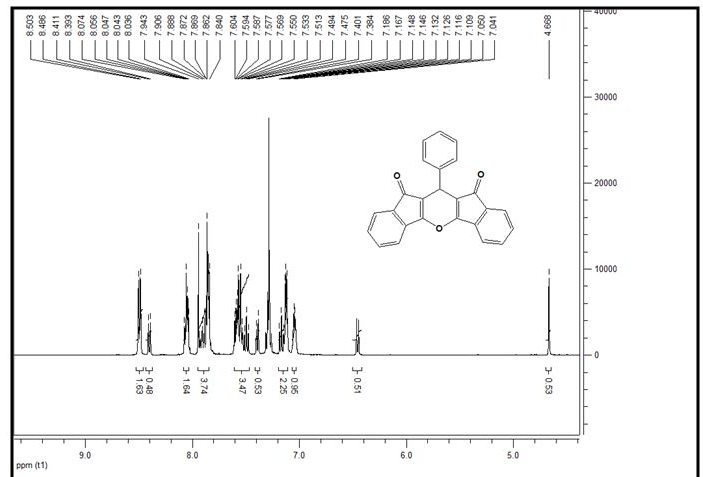


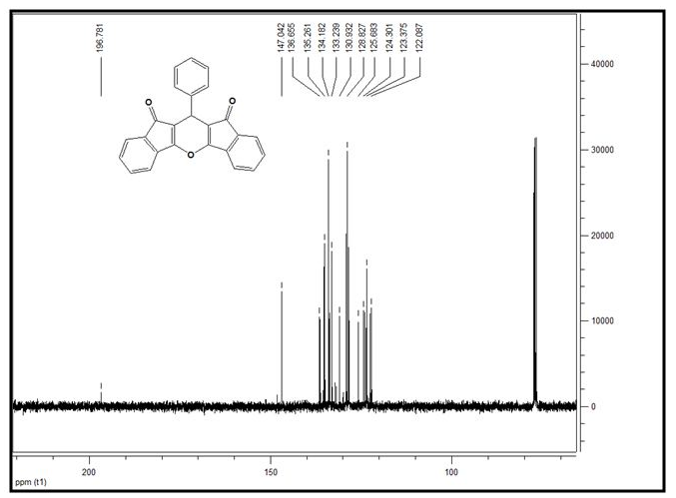
1H NMR and 13C NMR of 9-(4-chlorophenyl)-3,3,6,6-tetramethyl-3,4,5,6,7,9-hexahydro-1H-xanthene-1,8(2H)-dione (6h):





1H NMR and 13C NMR of 11-phenyl-10H-diindeno[1,2-b:2',1'-e]pyran-10,12(11H)-dione





1H NMR and 13C NMR of 11-(4-chlorophenyl)-10H-diindeno[1,2-b:2',1'-e]pyran-10,12(11H)-dione (7b):

