

Supplementary Information

Facile Synthesis and Investigation of 1,8-Dioxooctahydroxanthene Derivatives as Corrosion Inhibitors for Mild Steel in Hydrochloric Acid Solution

Behrooz Maleki,^{*a} Ali Davoodi,^b Mojtaba Vakili Azghandi,^c Mehdi Baghayeri,^a Elahe Akbarzadeh,^d Hojat Veisi,^e Samaneh Sedigh Ashrafi,^a Massomeh Raei^a

^aDepartment of Chemistry, Hakim Sabzevari University, Sabzevar, 96179-76487, Iran

E-mail: b.maleki@hsu.ac.ir, Tel: +98-571-4002643 Fax: +98-571-4410300

^bMaterials and Metallurgical Engineering Department, Faculty of Engineering, Ferdowsi University of Mashhad, Mashhad 91775-1111, Iran

^cMaterials Science and Engineering Department, Faculty of Engineering, Bu-Ali Sina University, Hamadan, Iran

^dYoung Researchers and Elite Club, Islamshahr Branch, Islamic Azad University, Islamshahr, Iran

^eDepartment of Chemistry, Payame Noor University(PNU), 19395-4697 Tehran, Iran

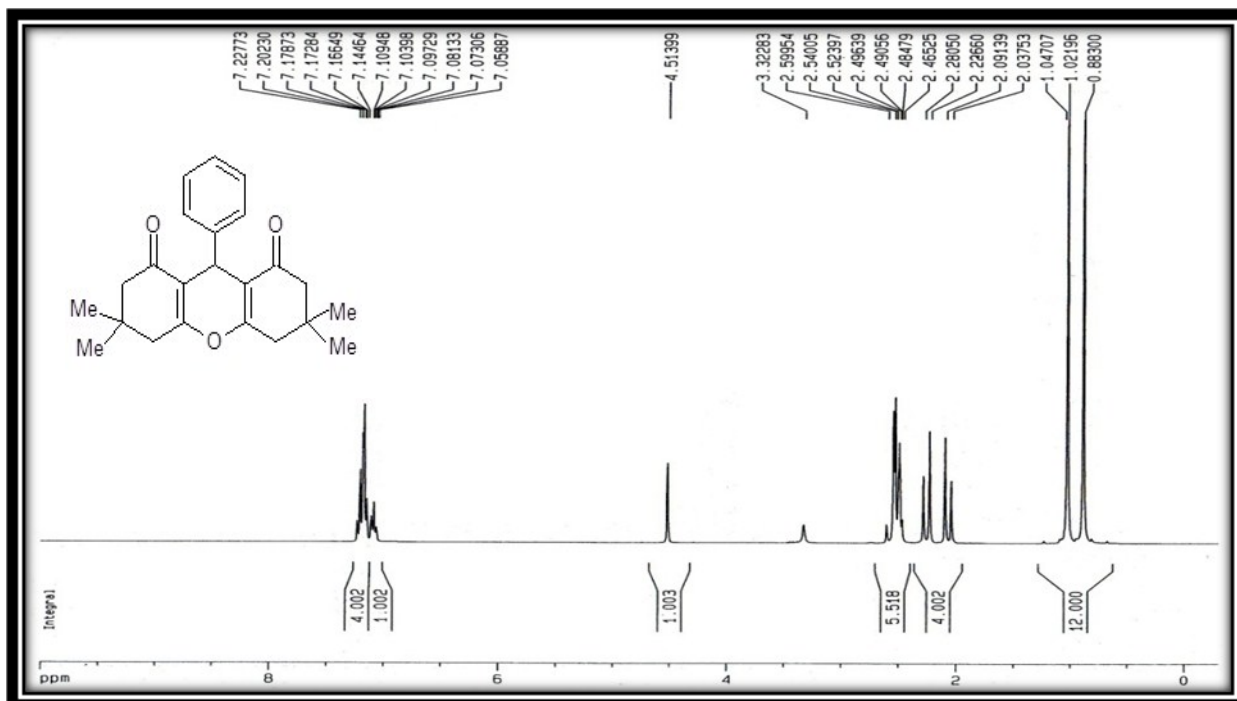


Fig. S1. ¹H NMR (DMSO-d₆, 400 MHz) for **3a**

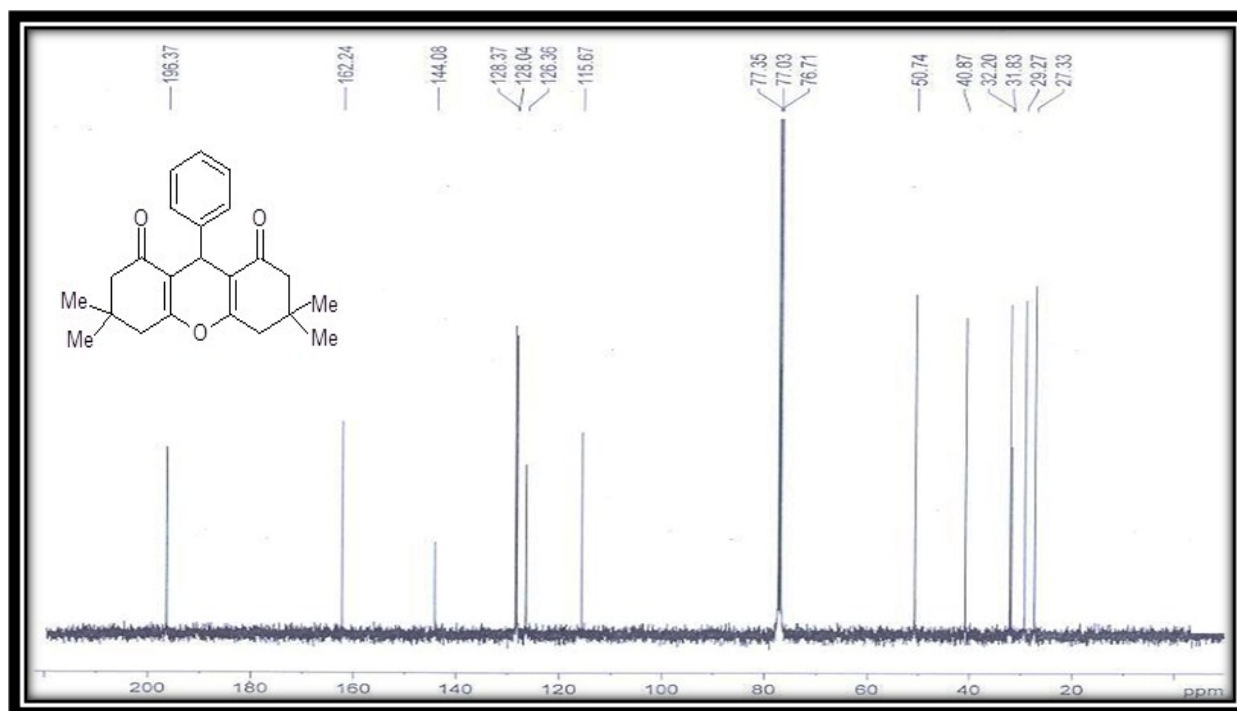


Fig. S2. ¹³C NMR (CDCl₃, 100 MHz) for **3a**

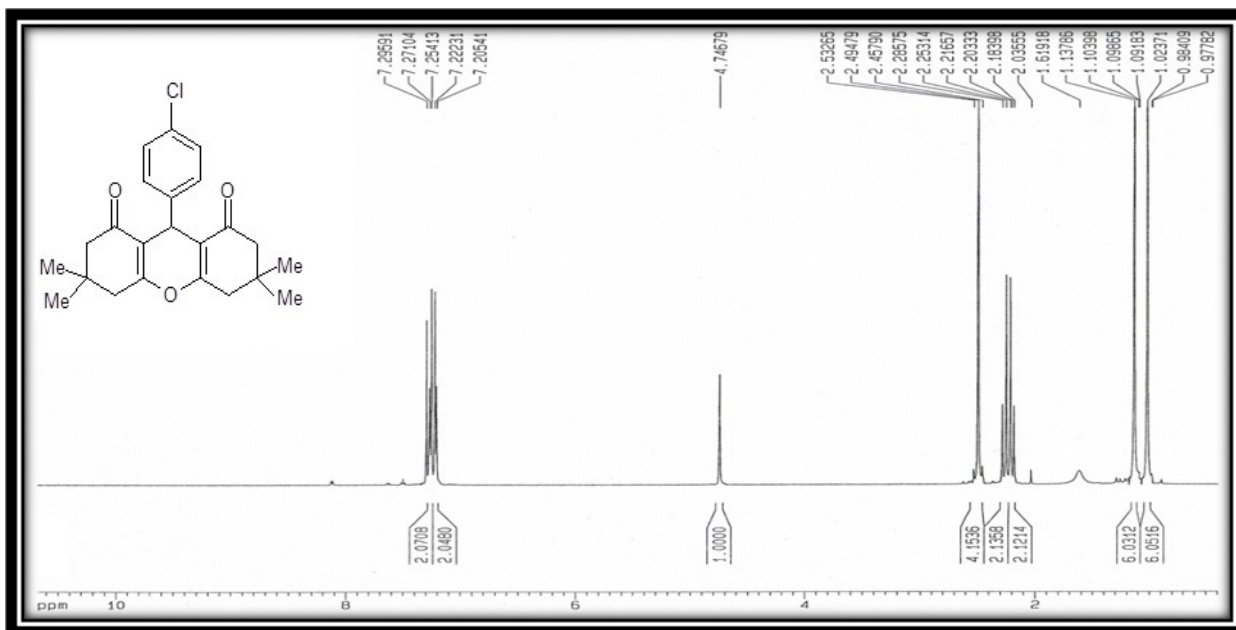


Fig. S3. ¹H NMR (CDCl₃, 400 MHz) for 3b

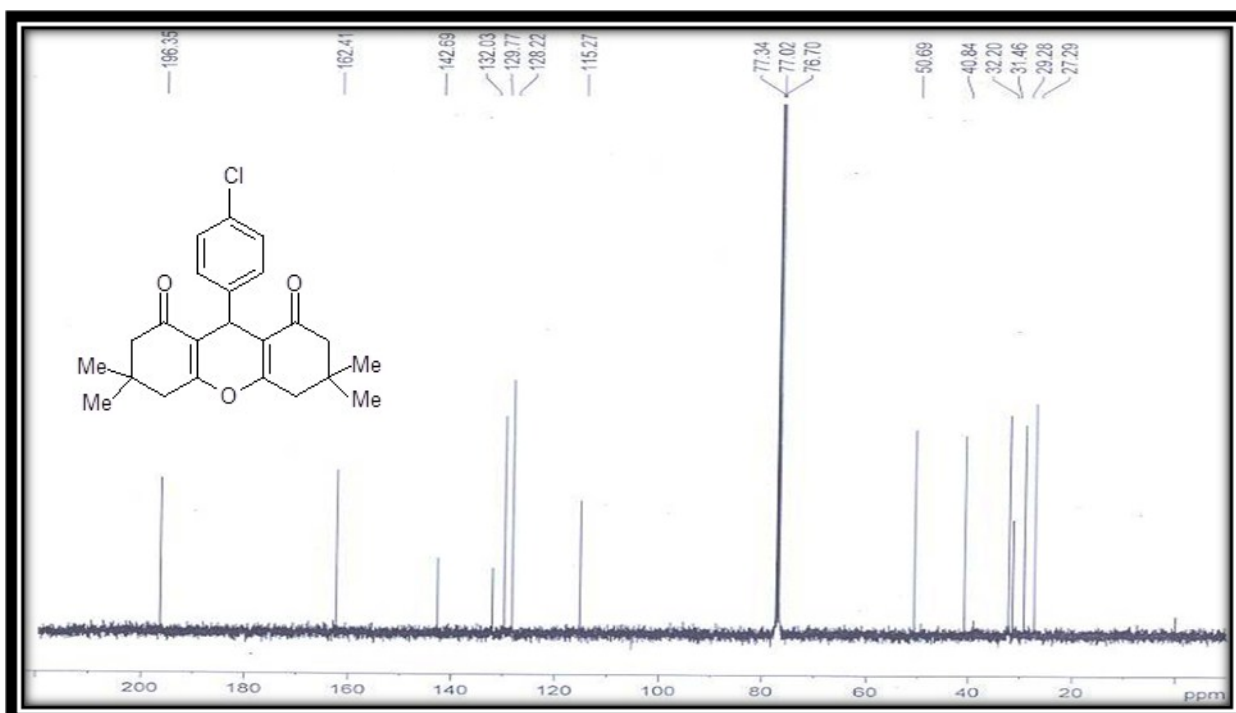


Fig. S4. ¹³C NMR (CDCl₃, 100 MHz) for 3b

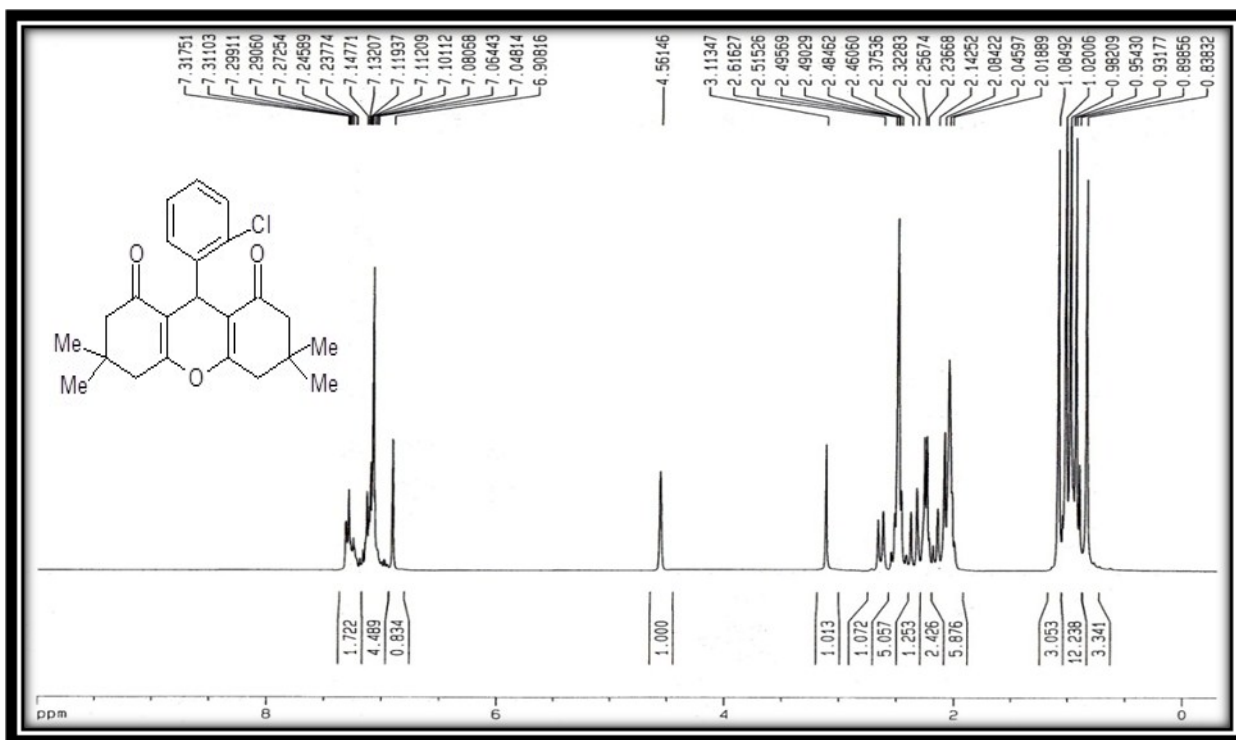


Fig. S5. ^1H NMR (DMSO- d_6 , 400 MHz) for **3c**

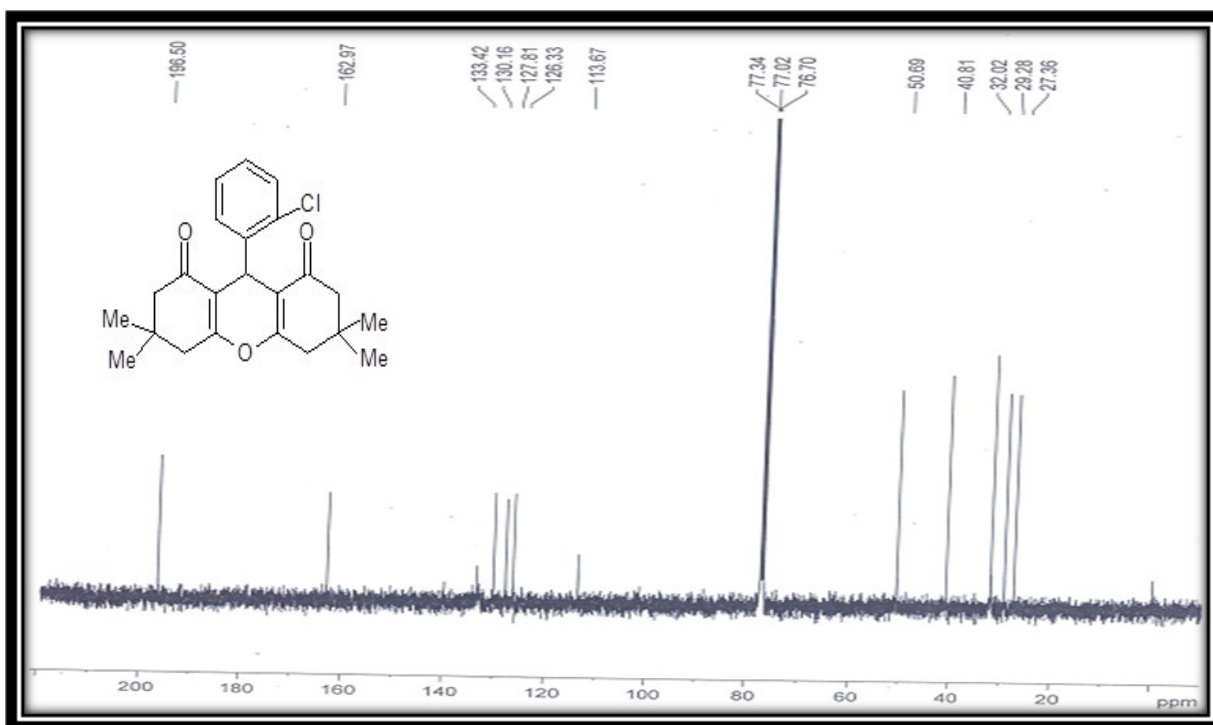


Fig. S6. ^{13}C NMR (CDCl_3 , 100 MHz) for **3c**

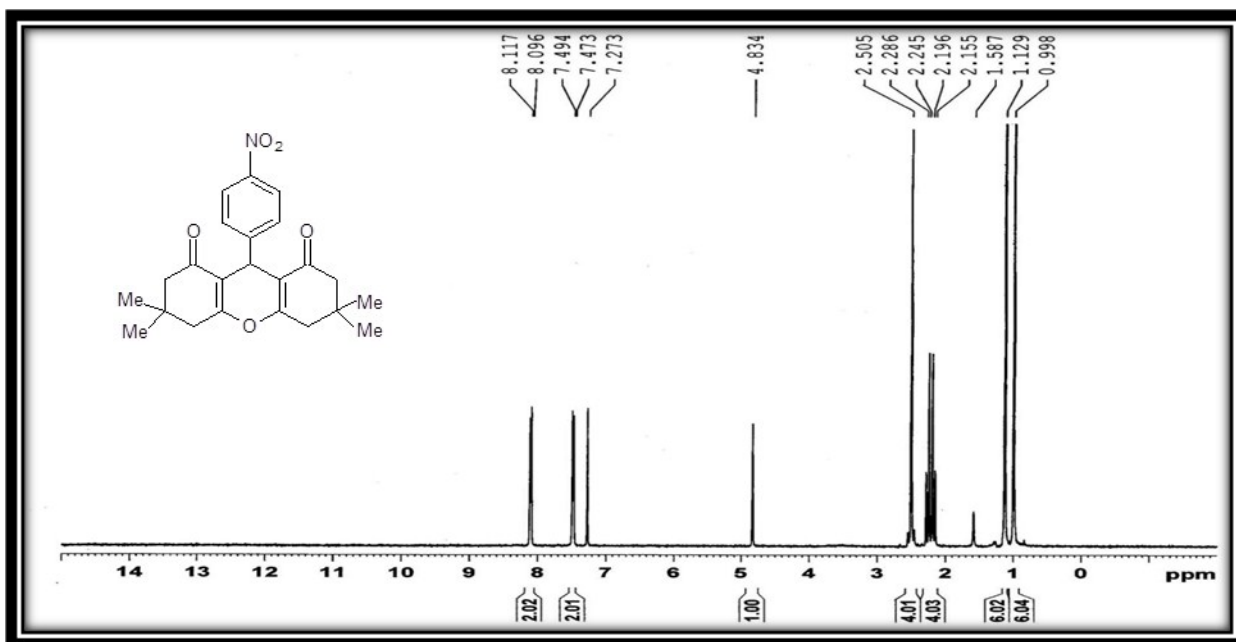


Fig. S7. ^1H NMR (CDCl_3 , 400 MHz) for **3e**

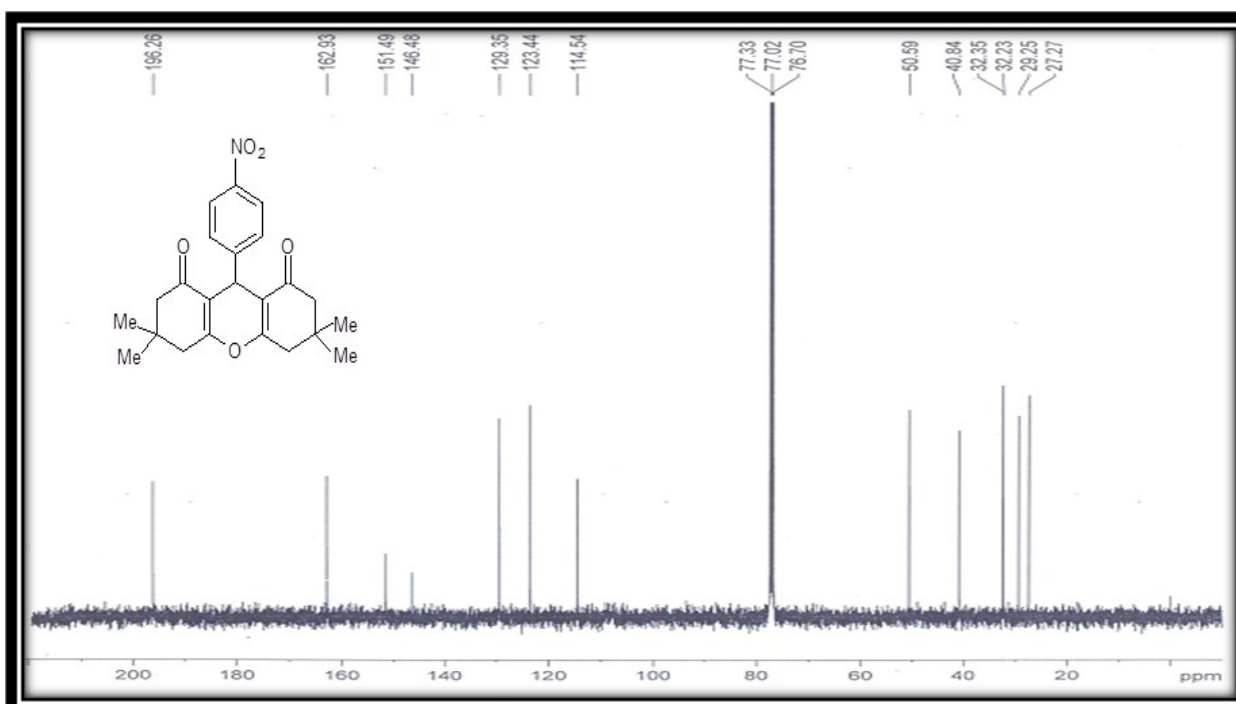


Fig. S8. ^{13}C NMR (CDCl_3 , 100 MHz) for **3e**

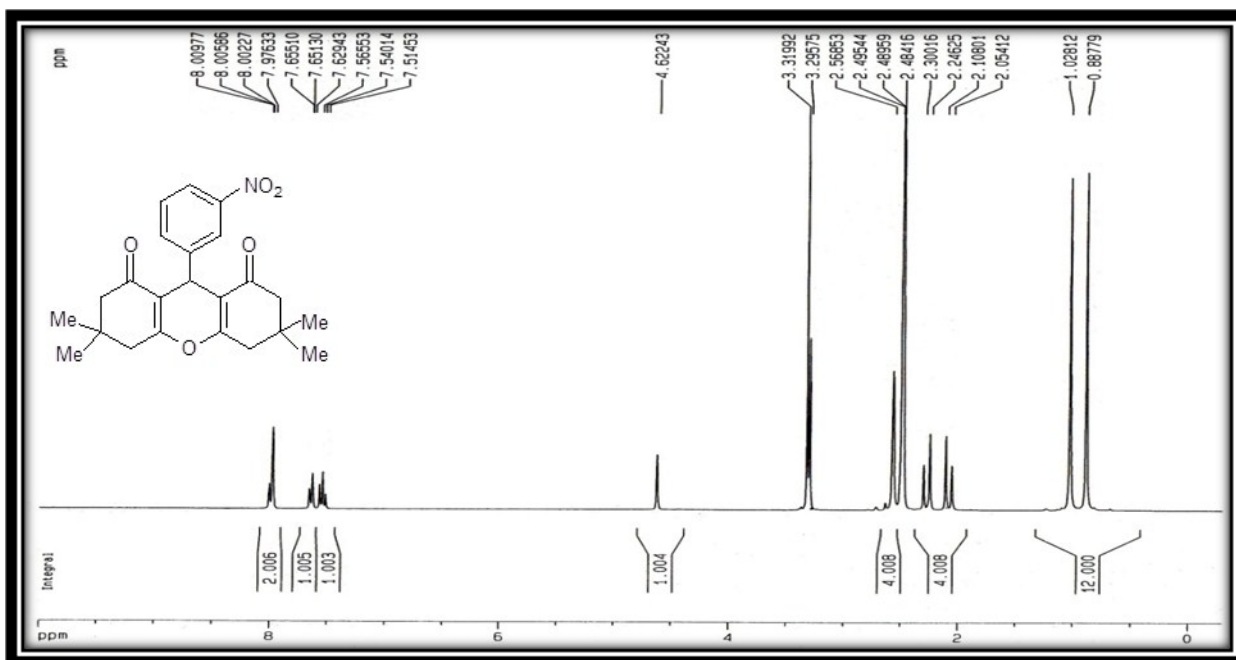


Fig. S9. ¹H NMR (DMSO-d₆, 400 MHz) for **3f**

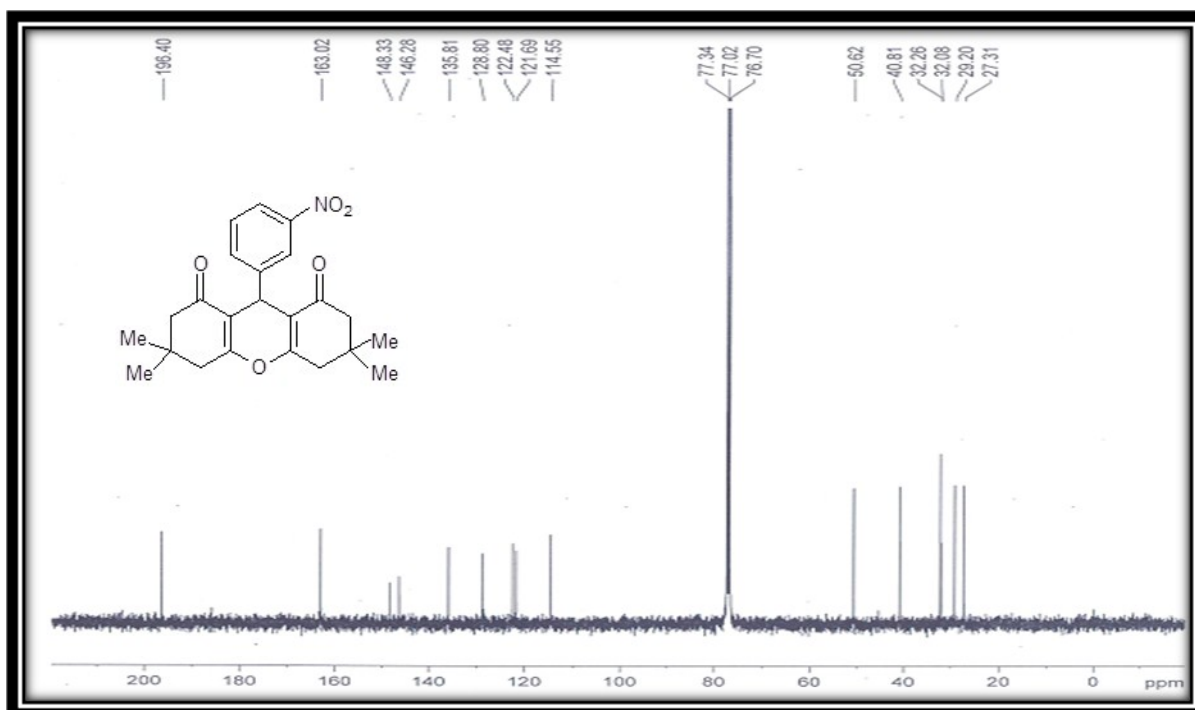


Fig. S10. ¹³C NMR (CDCl₃, 100 MHz) for **3f**

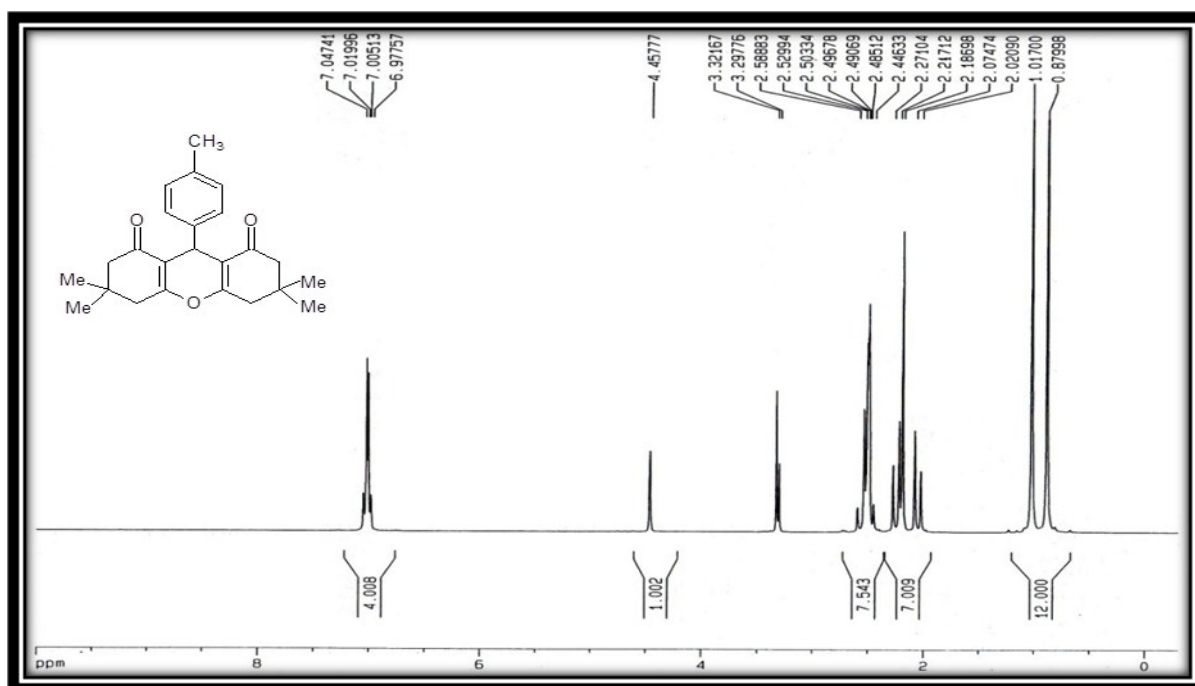


Fig. S11. ^1H NMR (DMSO- d_6 , 400 MHz) for **3g**

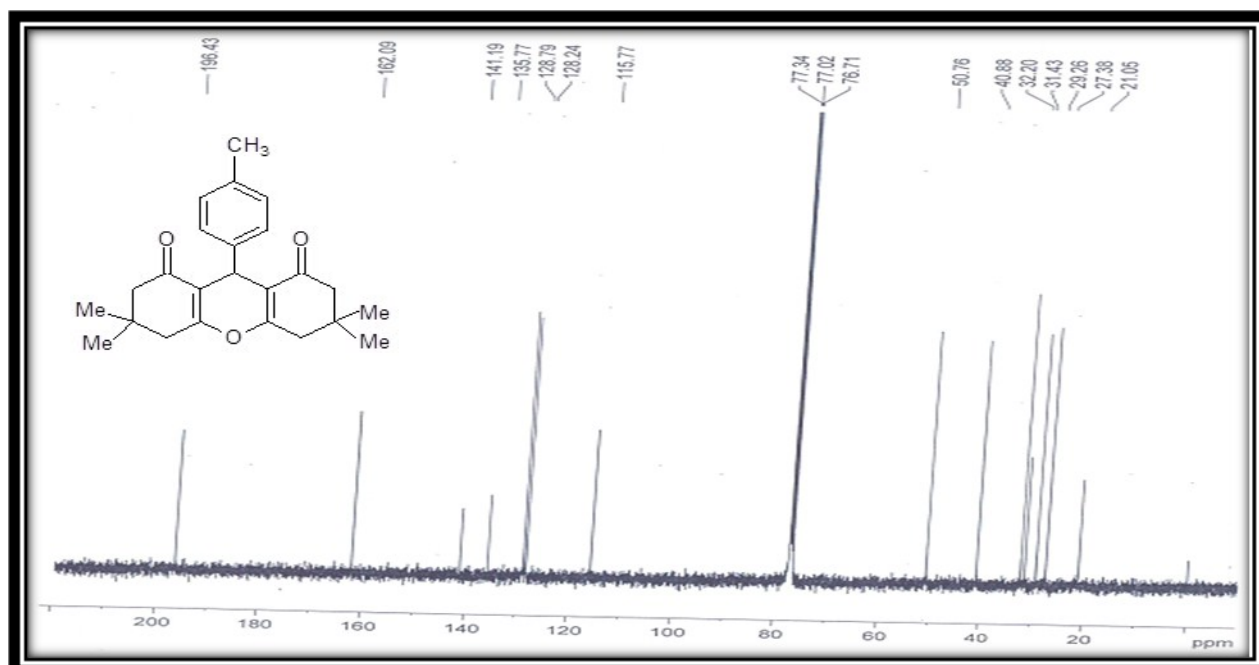


Fig. S12. ^{13}C NMR (CDCl_3 , 100 MHz) for **3g**

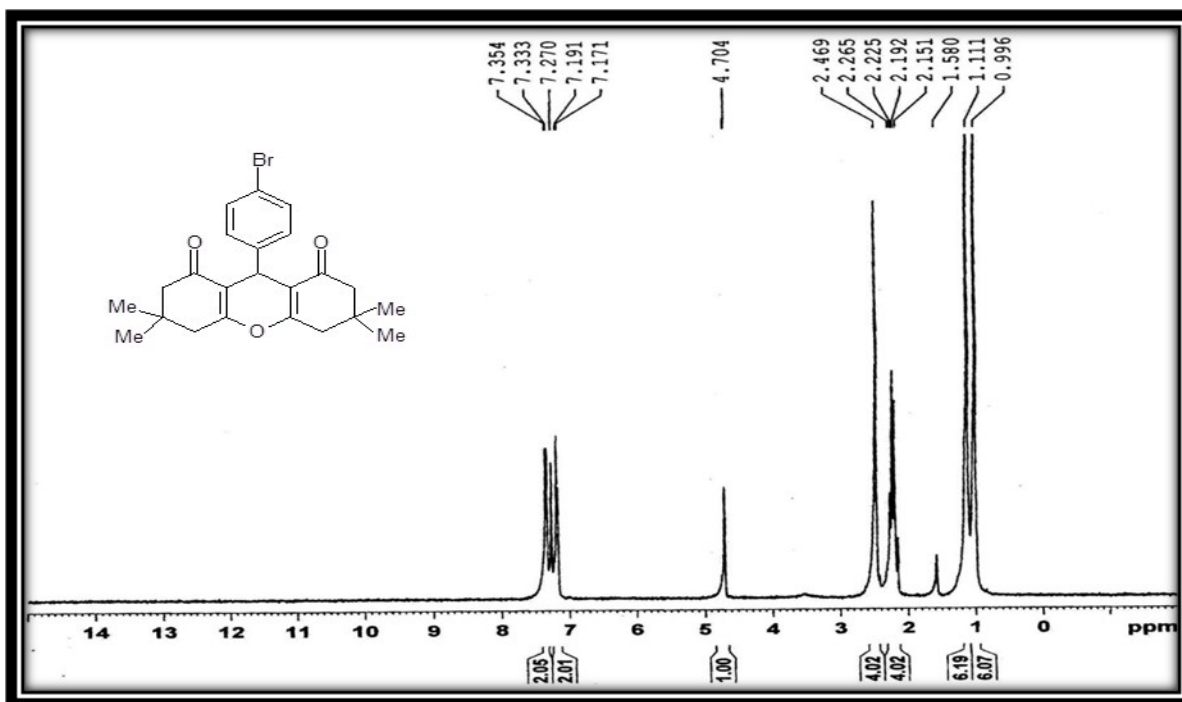


Fig. S13. ^1H NMR (CDCl_3 , 400 MHz) for **3h**

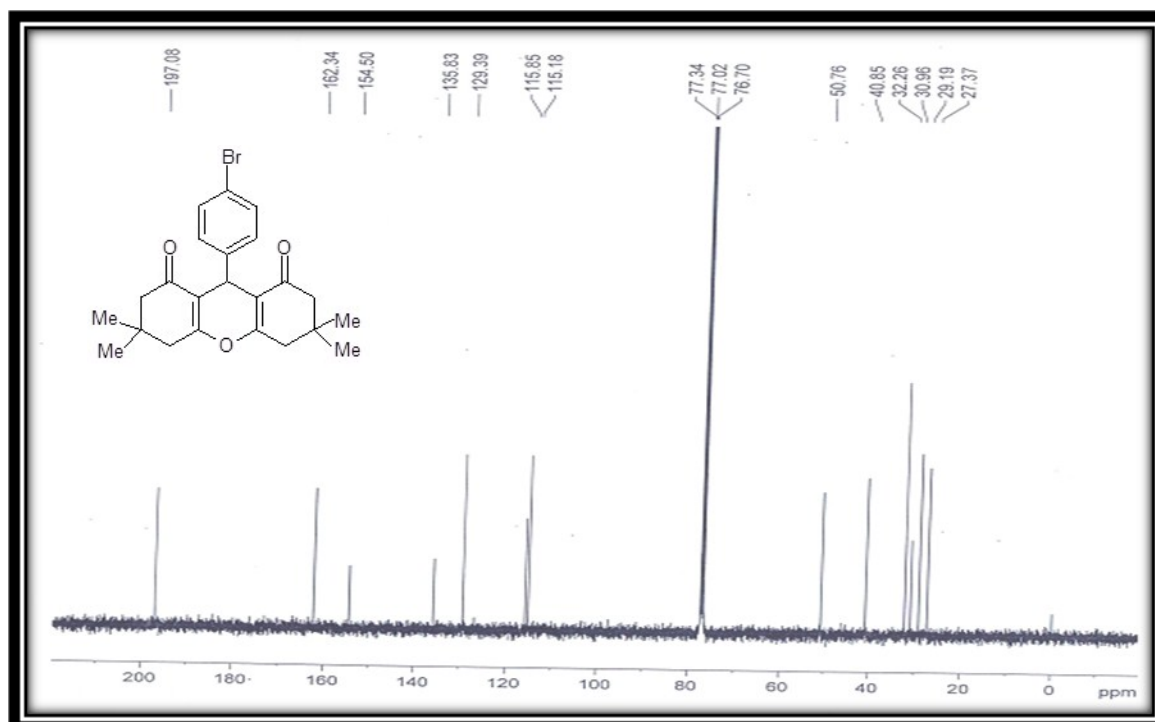


Fig. S14. ^{13}C NMR (CDCl_3 , 100 MHz) for **3h**