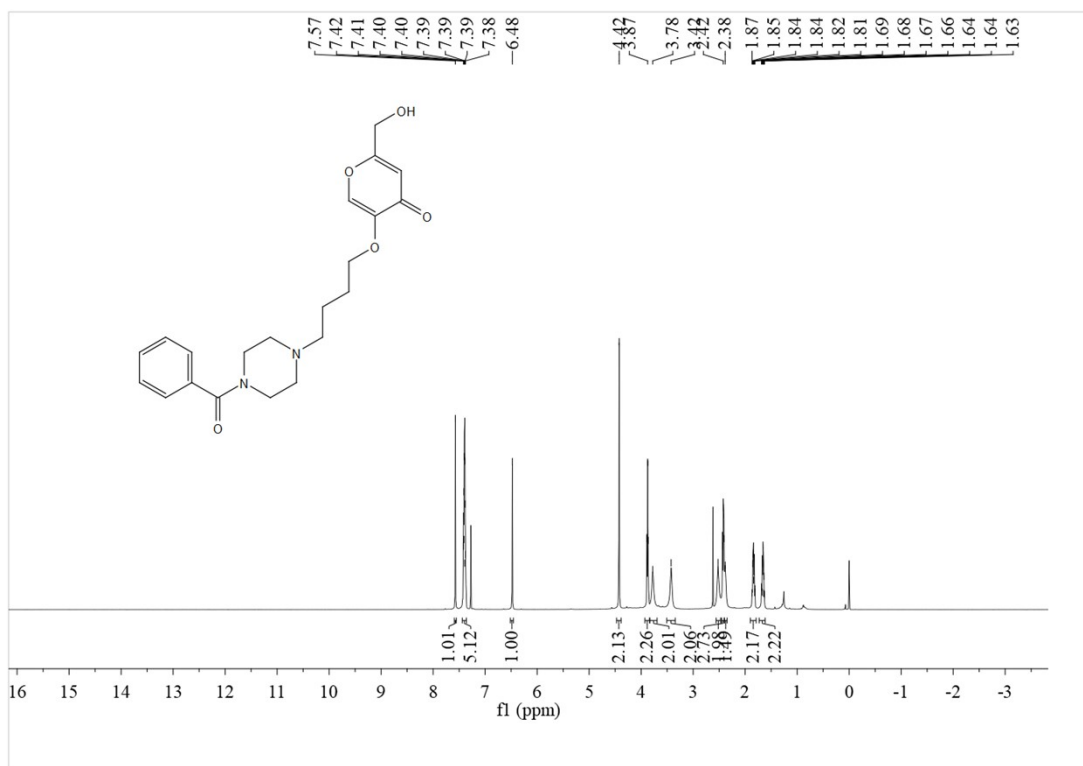
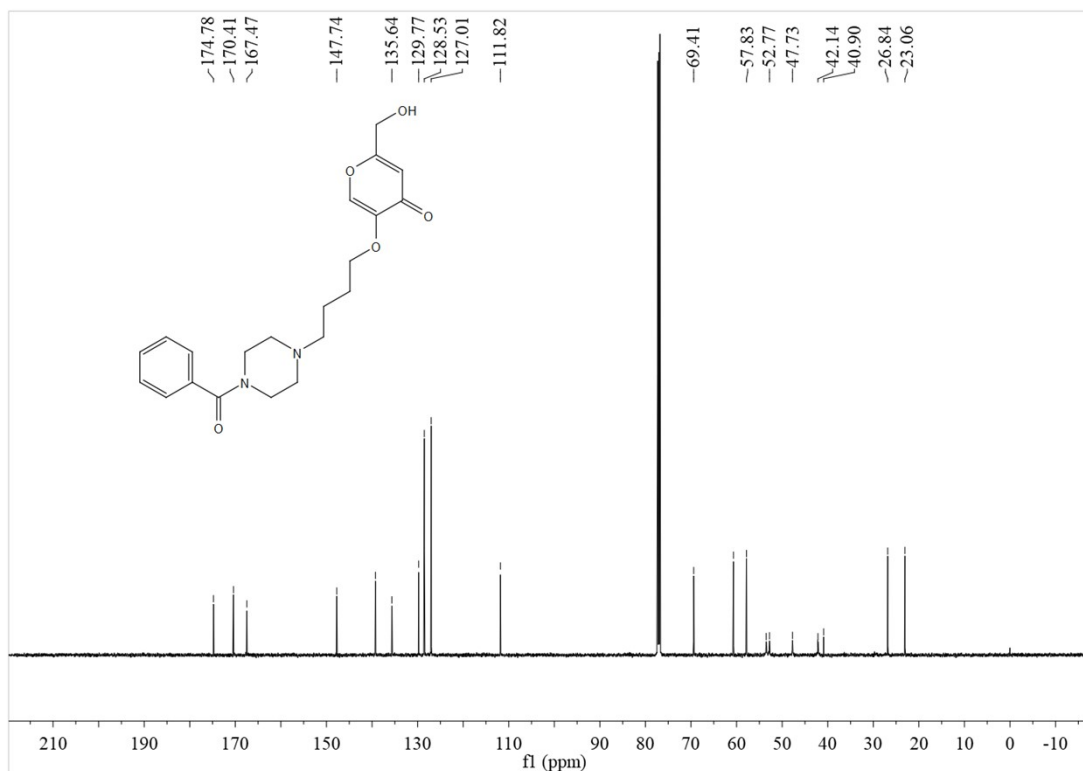


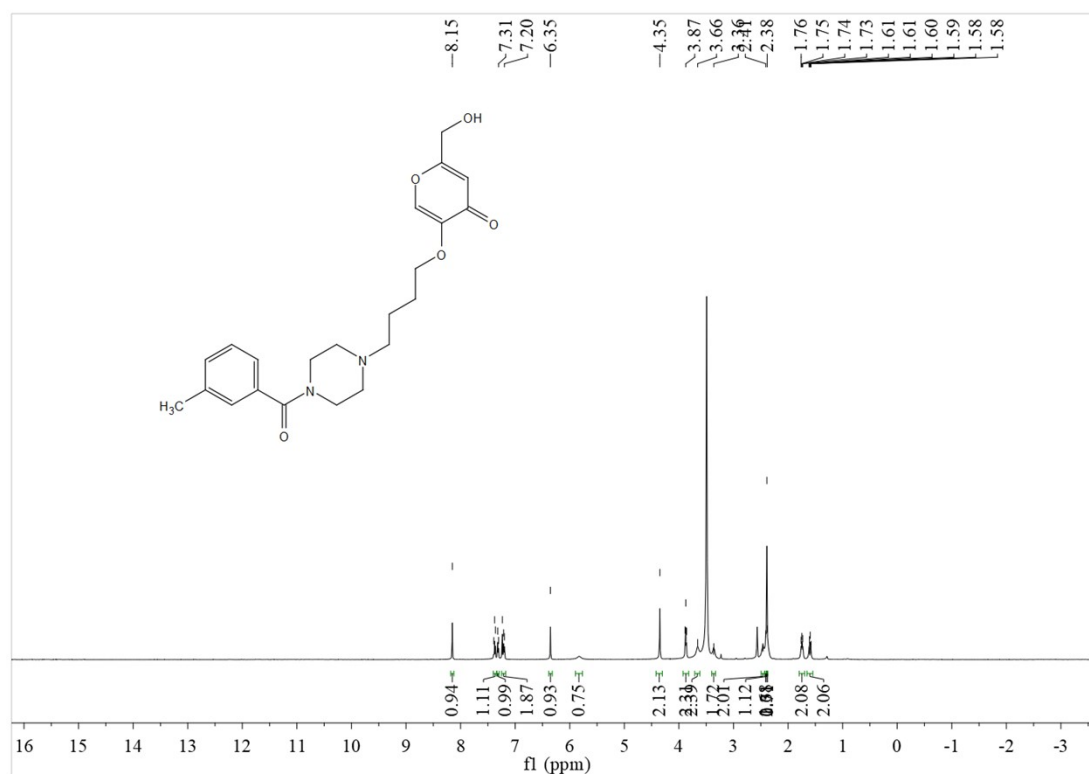
Supplementary material



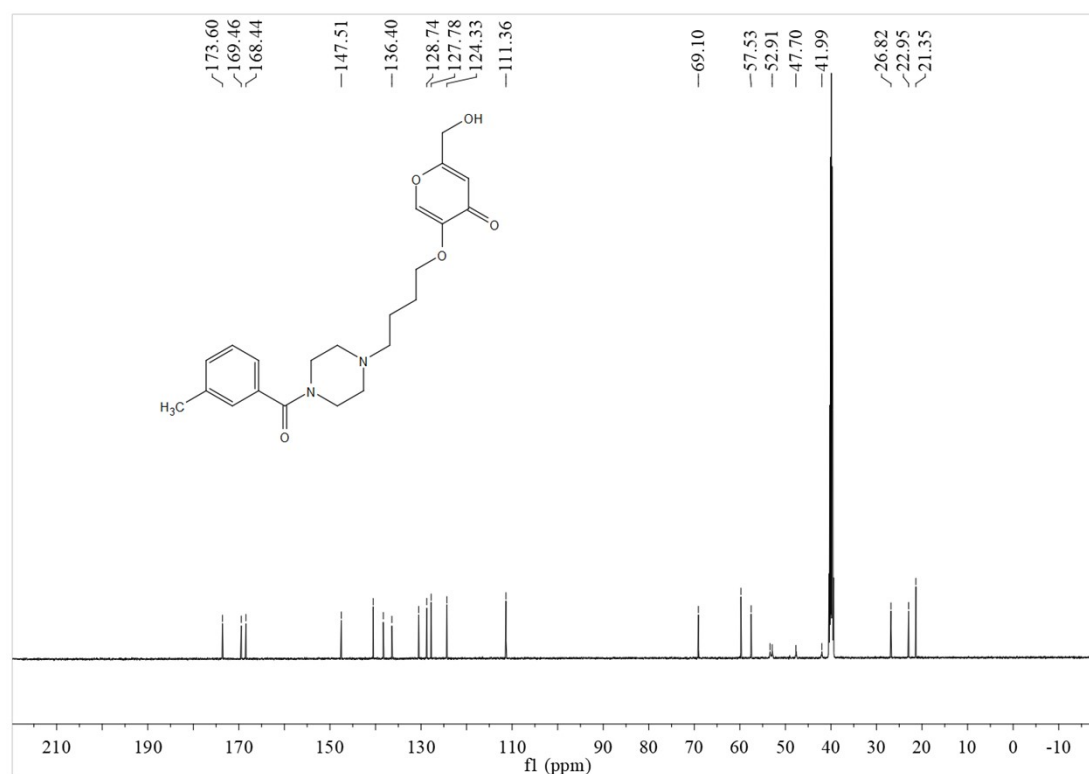
¹H NMR of 5-(4-(4-benzoylpiperazin-1-yl)butoxy)-2-(hydroxymethyl)-4H-pyran-4-one (3a)



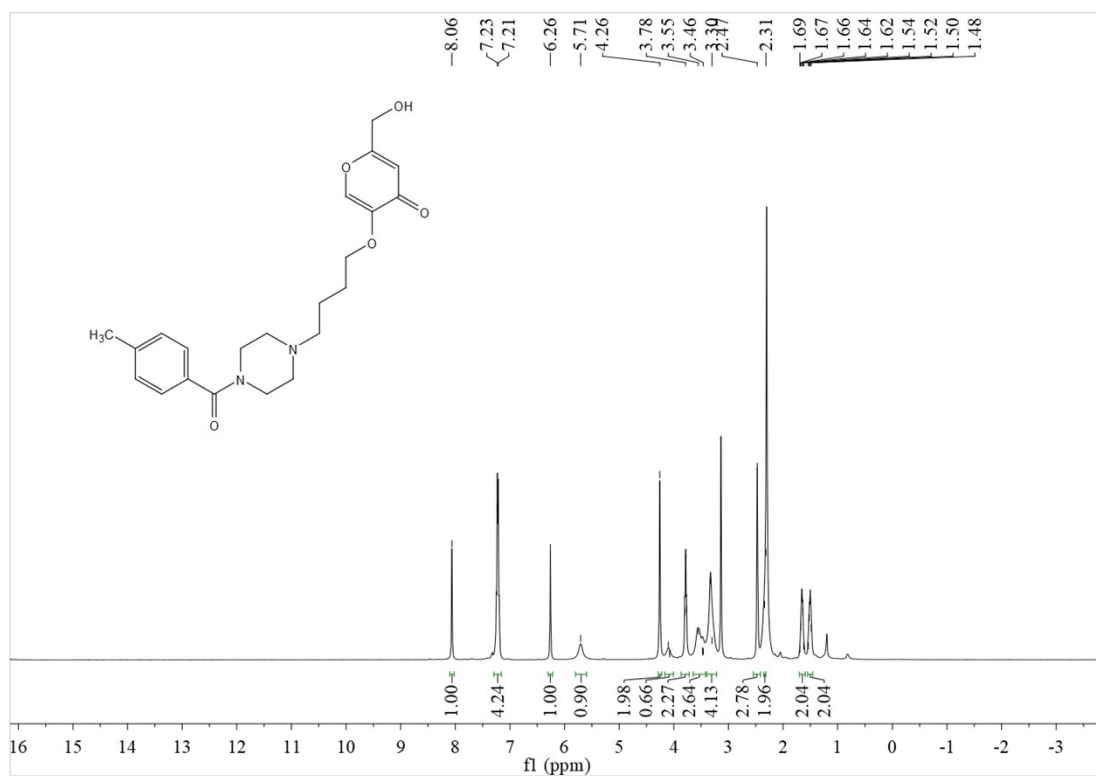
¹³C NMR of 5-(4-(4-benzoylpiperazin-1-yl)butoxy)-2-(hydroxymethyl)-4H-pyran-4-one (3a)



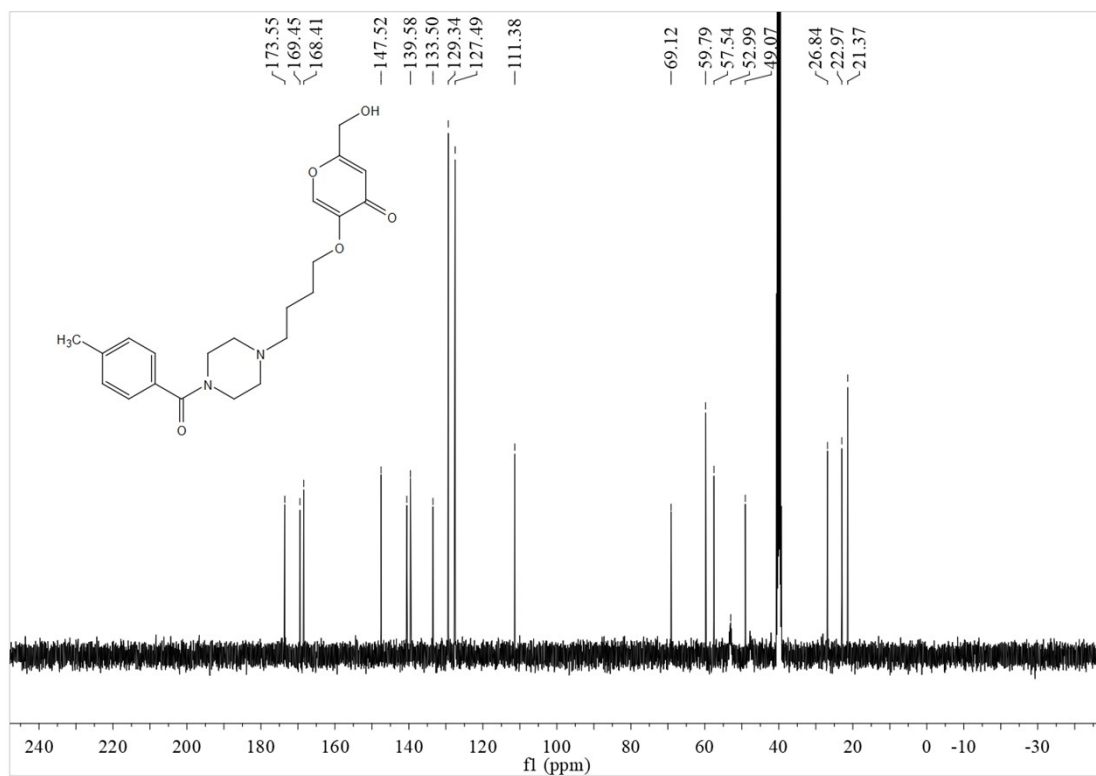
¹H NMR of 2-(hydroxymethyl)-5-(4-(4-(3-methylbenzoyl)piperazin-1-yl)butoxy)-4H-pyran-4-one (3b)



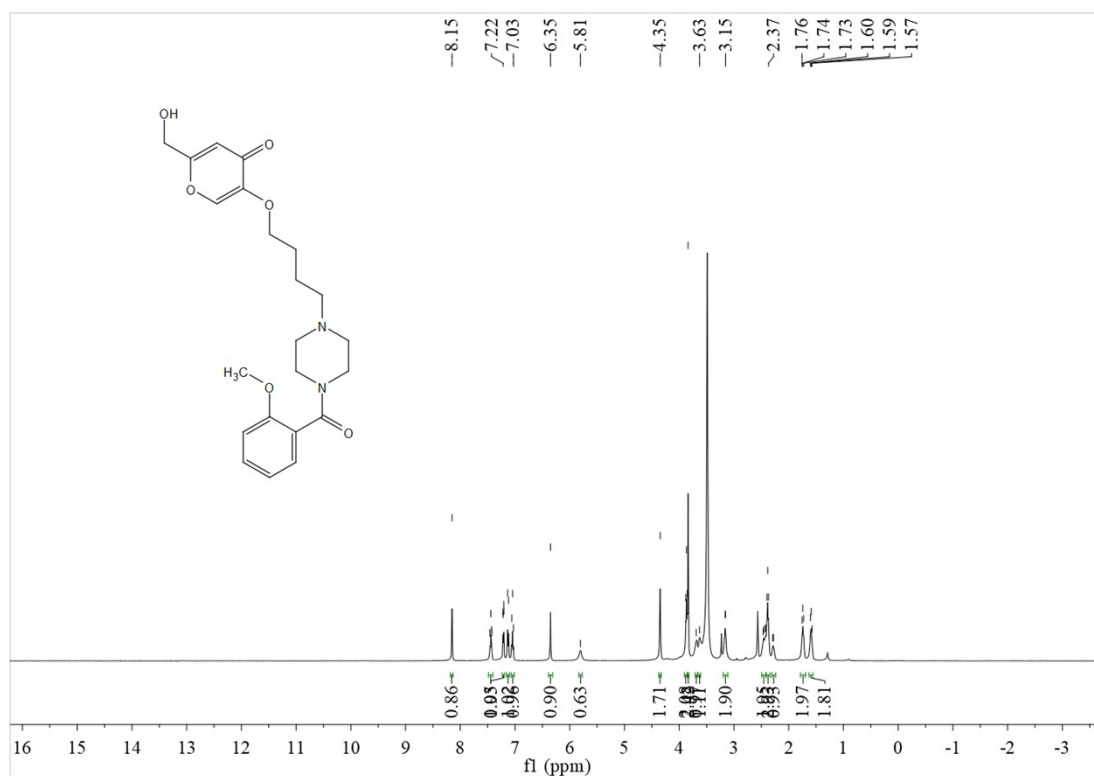
¹³C NMR of 2-(hydroxymethyl)-5-(4-(4-(3-methylbenzoyl)piperazin-1-yl)butoxy)-4H-pyran-4-one (3b)



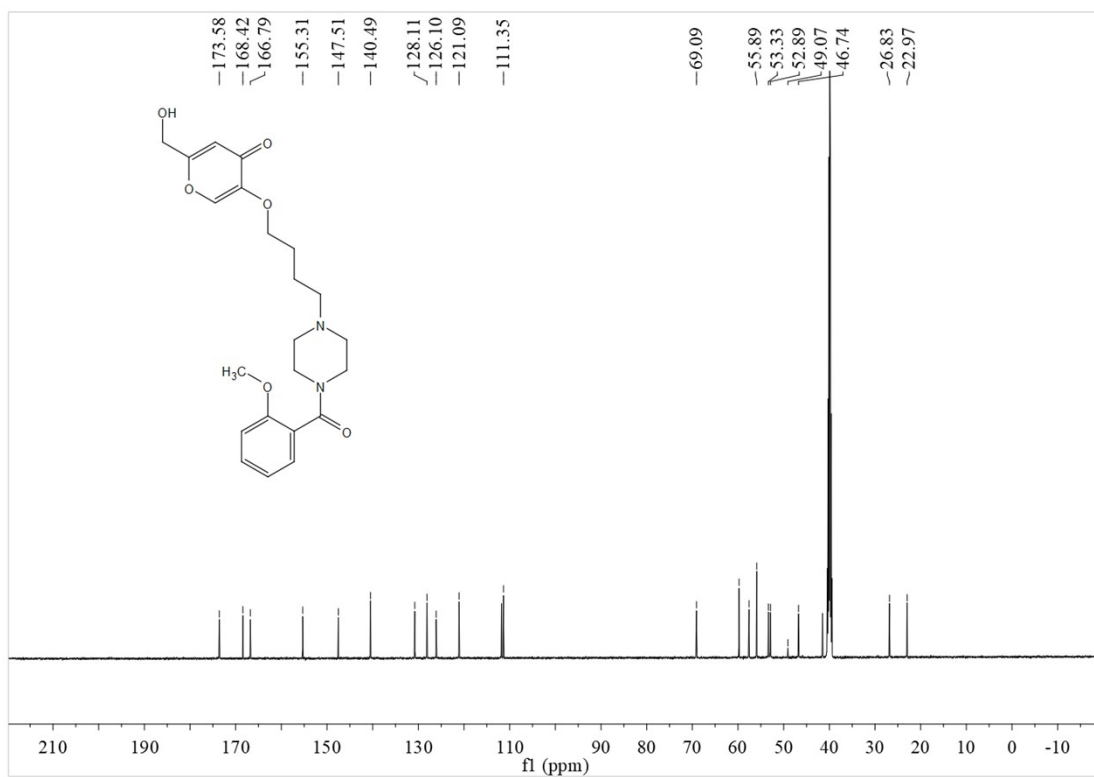
¹H NMR of 2-(hydroxymethyl)-5-(4-(4-(4-methylbenzoyl)piperazin-1-yl)butoxy)-4H-pyran-4-one (3c)



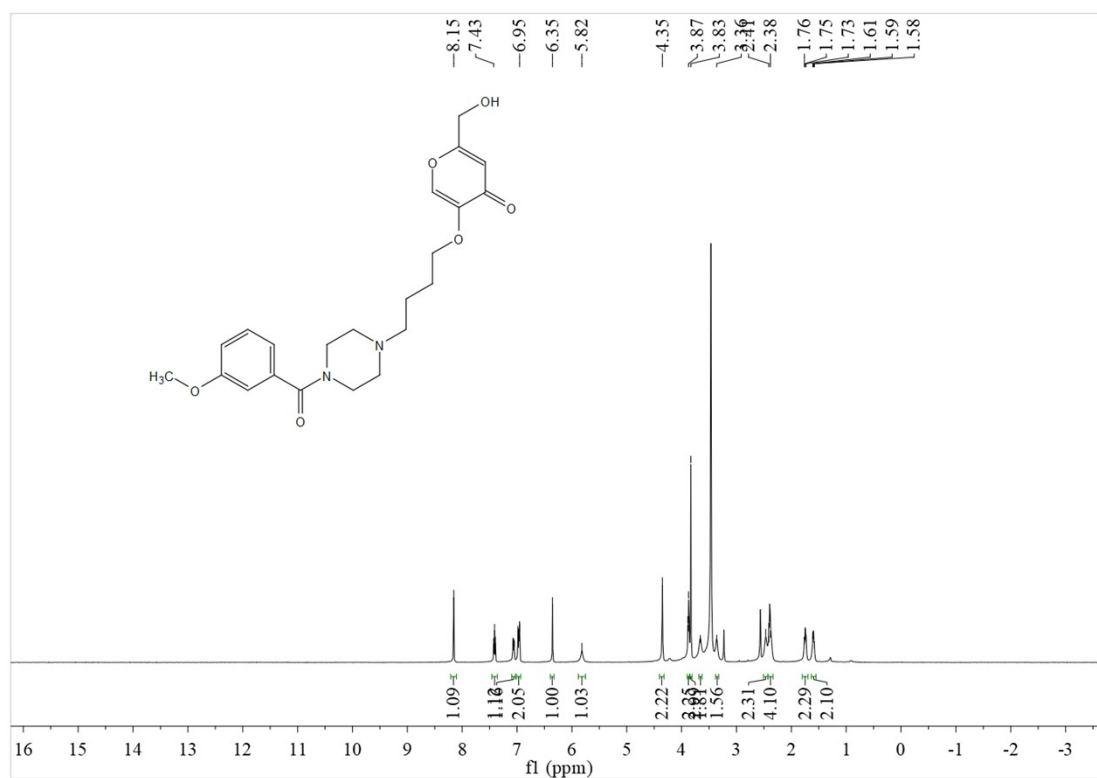
¹³C NMR of 2-(hydroxymethyl)-5-(4-(4-(4-methylbenzoyl)piperazin-1-yl)butoxy)-4H-pyran-4-one (3c)



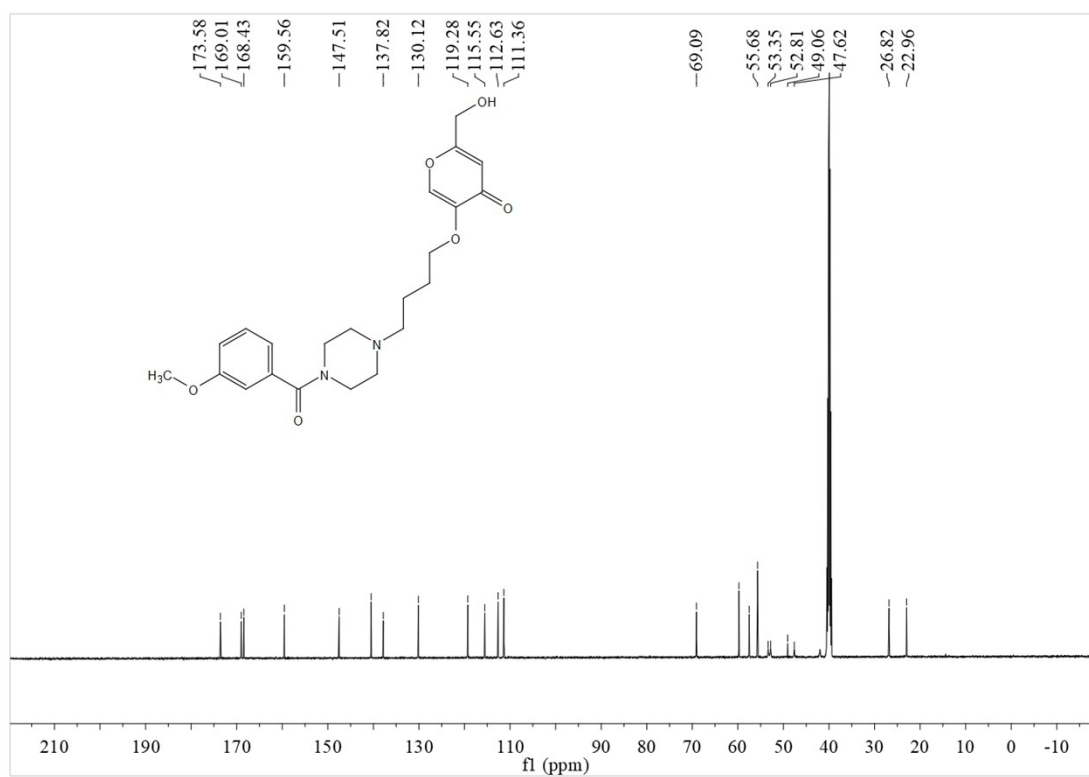
¹H NMR of 2-(hydroxymethyl)-5-(4-(4-(2-methoxybenzoyl)piperazin-1-yl)butoxy)-4H-pyran-4-one (3d)



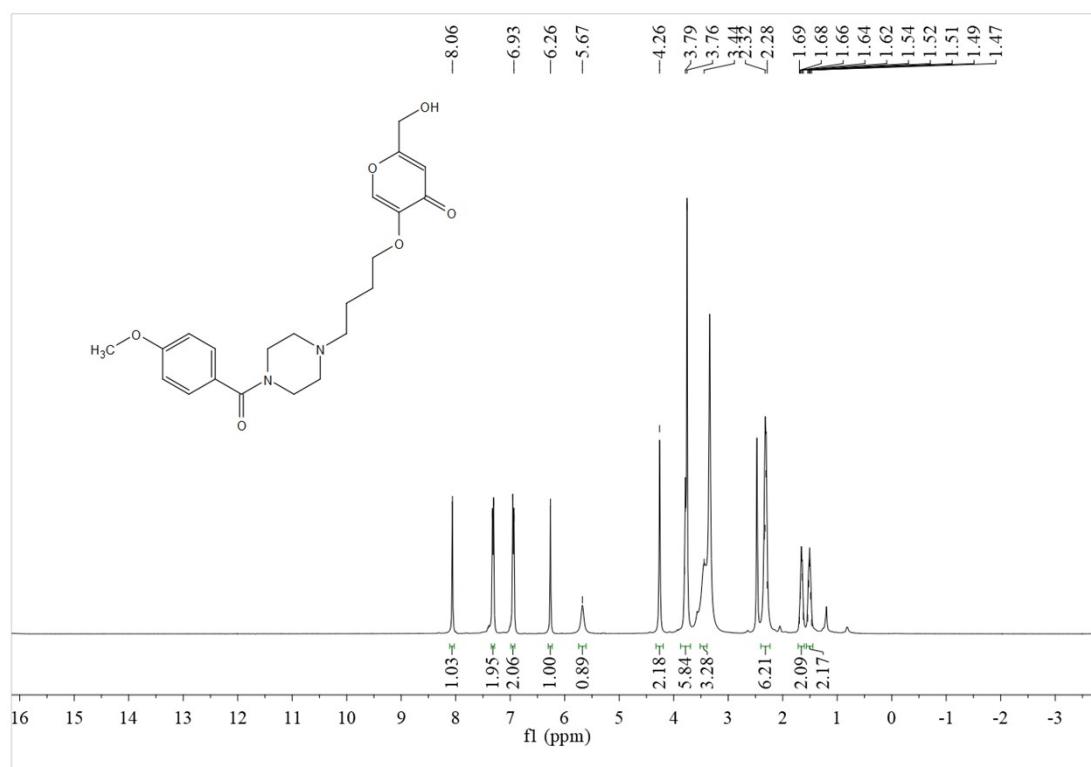
¹³CNMR of 2-(hydroxymethyl)-5-(4-(4-(2-methoxybenzoyl)piperazin-1-yl)butoxy)-4H-pyran-4-one (3d)



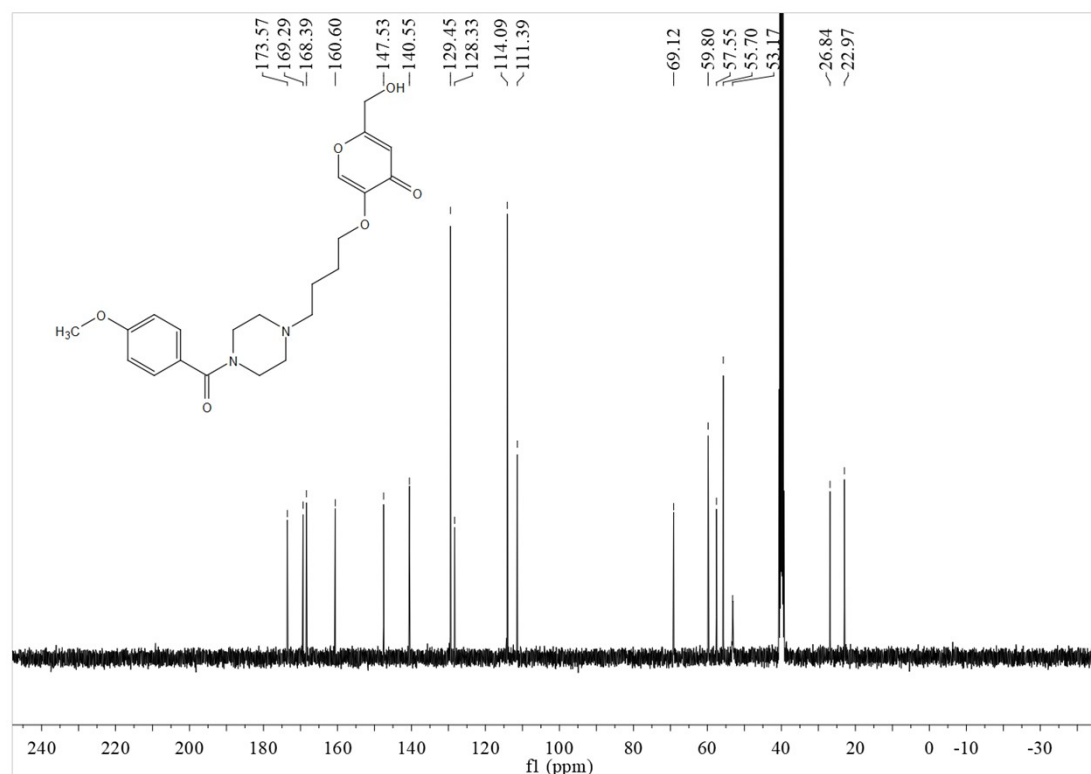
¹H NMR of 2-(hydroxymethyl)-5-(4-(4-(3-methoxybenzoyl)piperazin-1-yl)butoxy)-4H-pyran-4-one (3e)



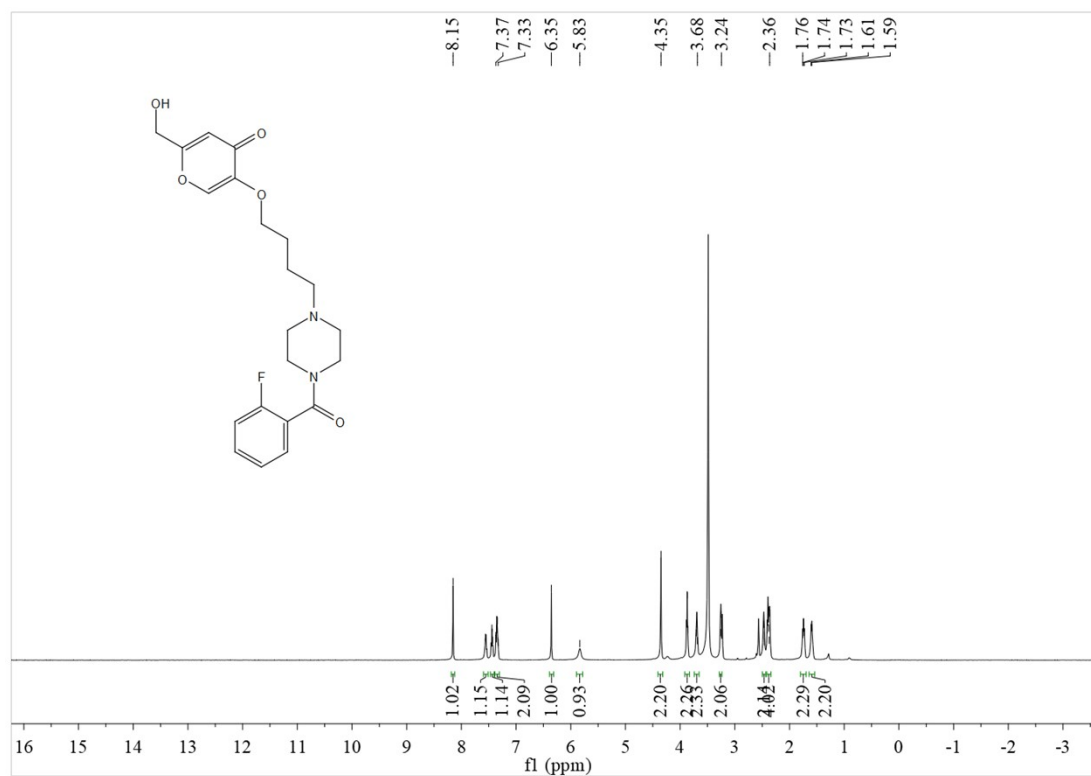
¹³C NMR of 2-(hydroxymethyl)-5-(4-(4-(3-methoxybenzoyl)piperazin-1-yl)butoxy)-4H-pyran-4-one (3e)



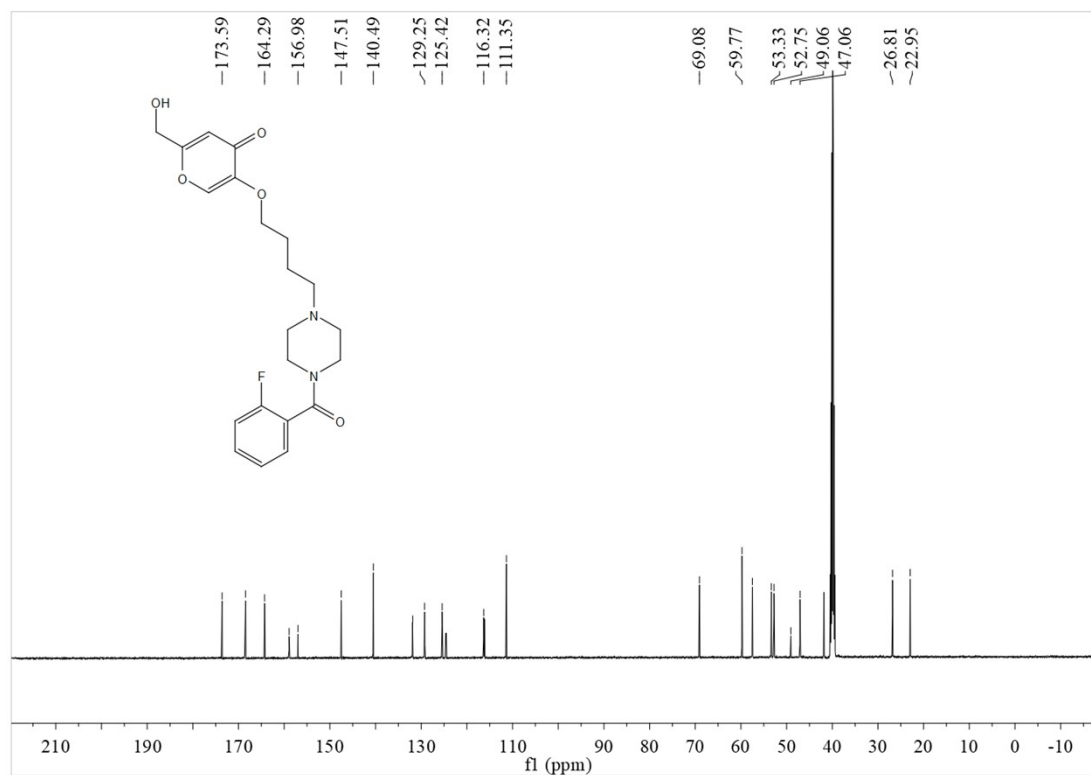
¹H NMR of 2-(hydroxymethyl)-5-(4-(4-(4-methoxybenzoyl)piperazin-1-yl)butoxy)-4H-pyran-4-one (3f)



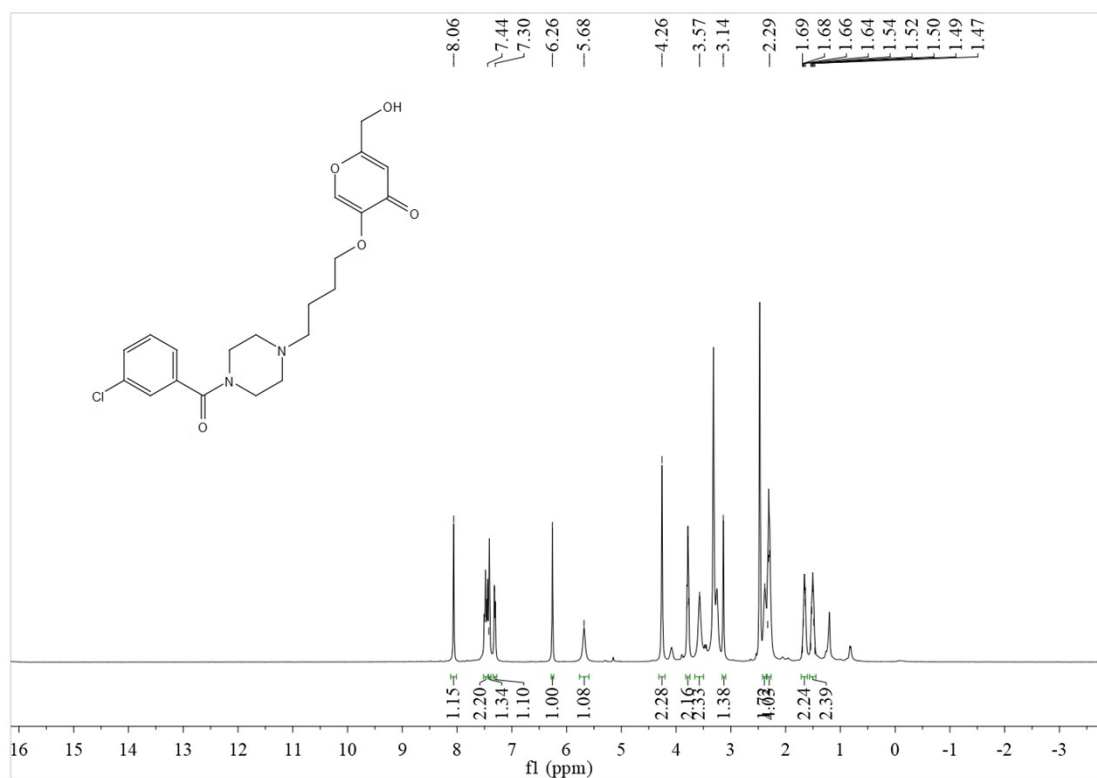
¹³C NMR of 2-(hydroxymethyl)-5-(4-(4-(4-methoxybenzoyl)piperazin-1-yl)butoxy)-4H-pyran-4-one (3f)



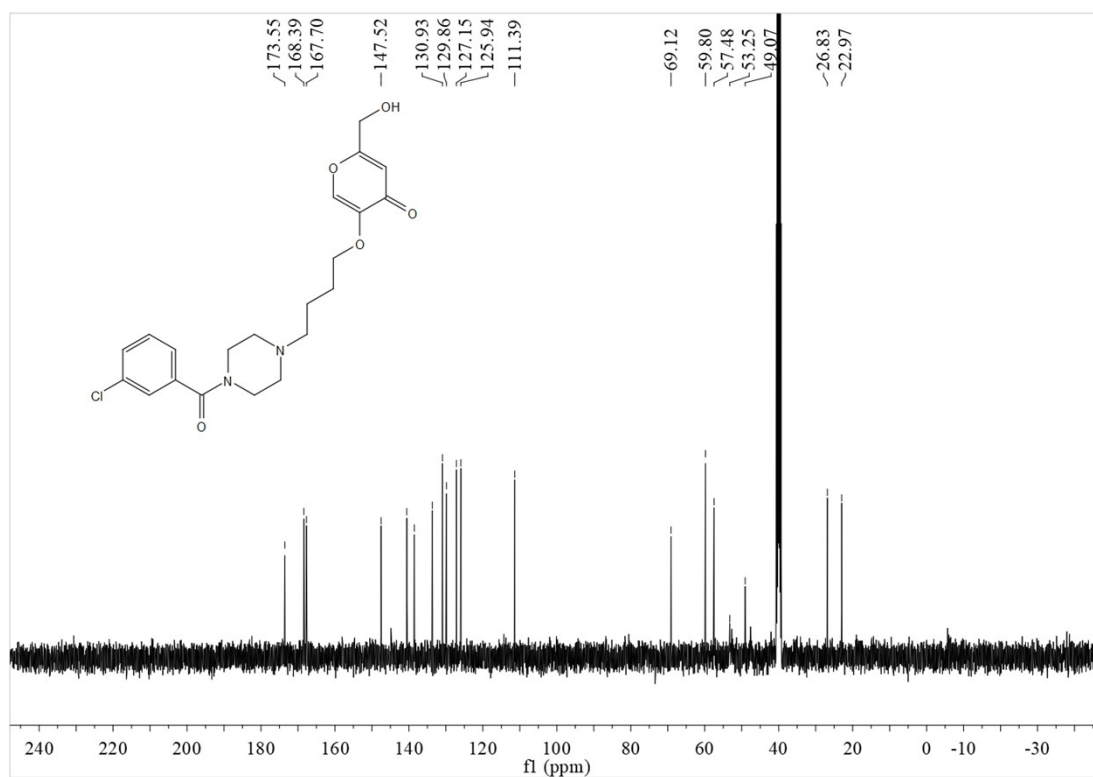
¹H NMR of 5-(4-(4-(2-fluorobenzoyl)piperazin-1-yl)butoxy)-2-(hydroxymethyl)-4H-pyran-4-one (3g)



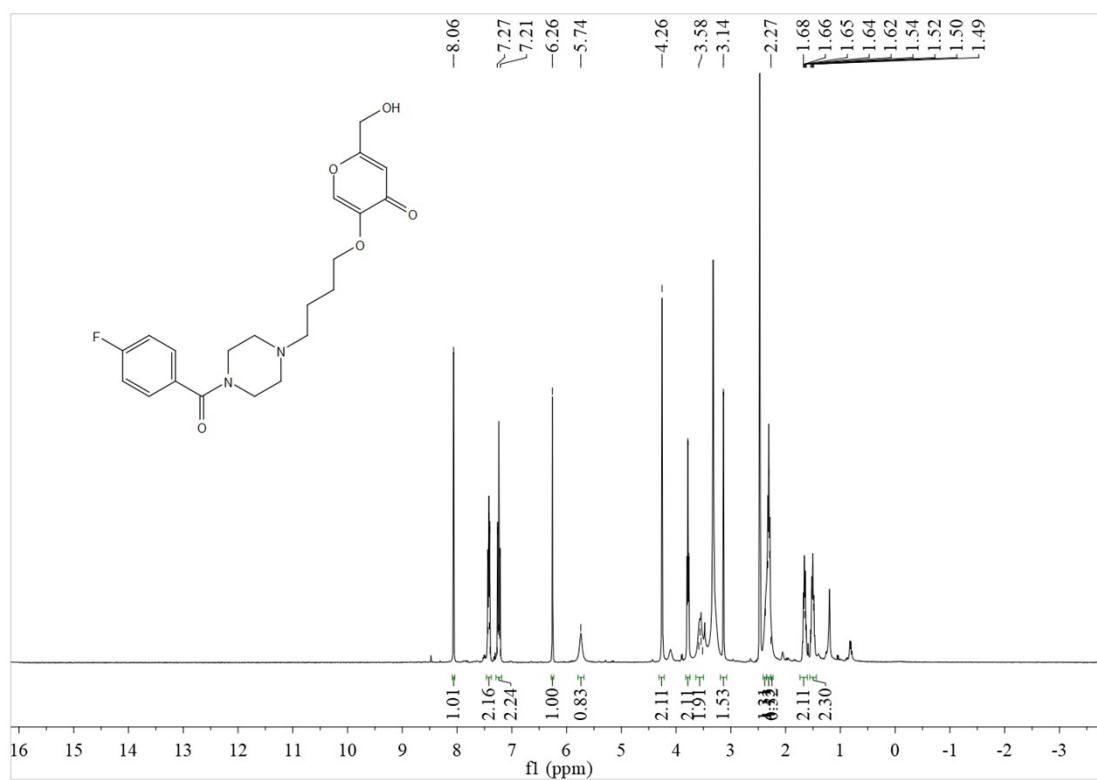
¹³C NMR of 5-(4-(4-(2-fluorobenzoyl)piperazin-1-yl)butoxy)-2-(hydroxymethyl)-4H-pyran-4-one (3g)



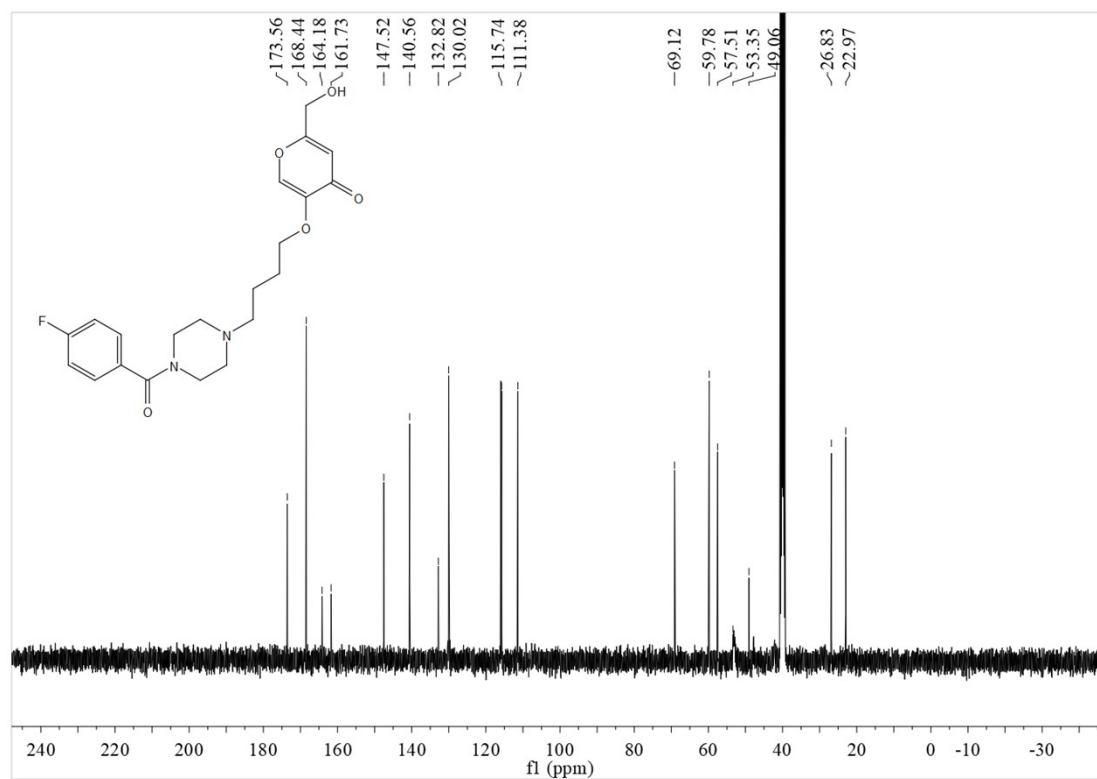
¹H NMR of 5-(4-(4-(3-fluorobenzoyl)piperazin-1-yl)butoxy)-2-(hydroxymethyl)-4H-pyran-4-one (3h)



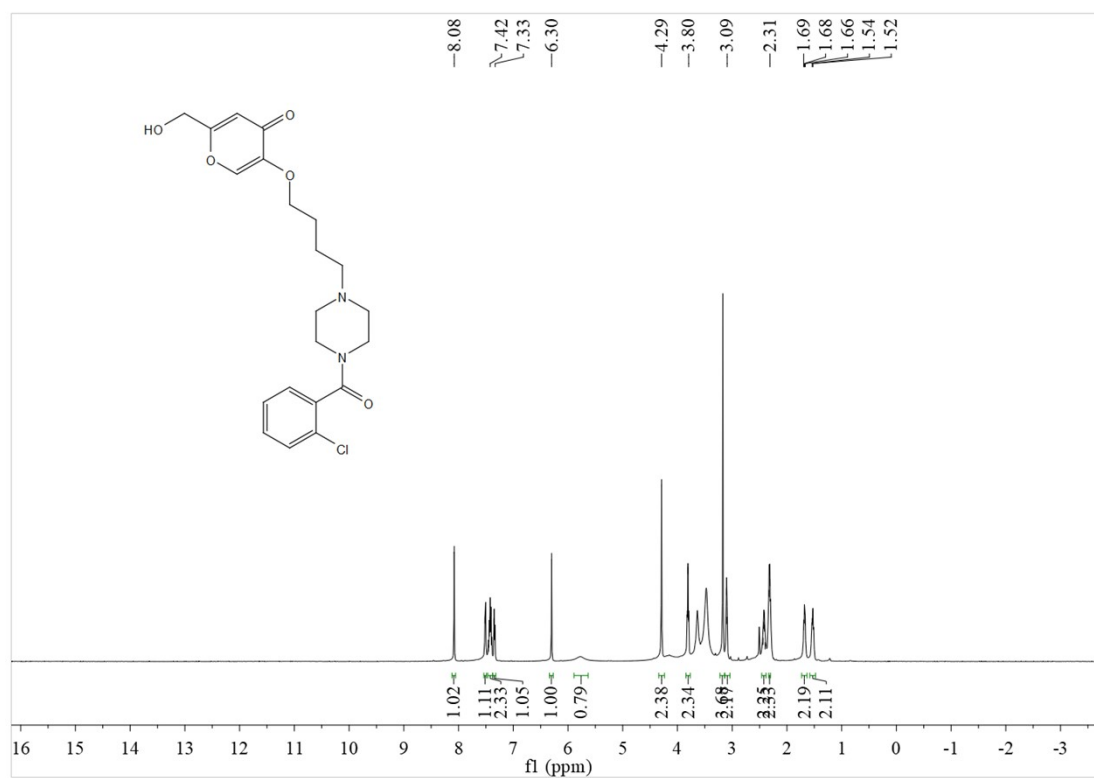
¹³C NMR of 5-(4-(4-(3-fluorobenzoyl)piperazin-1-yl)butoxy)-2-(hydroxymethyl)-4H-pyran-4-one (3h)



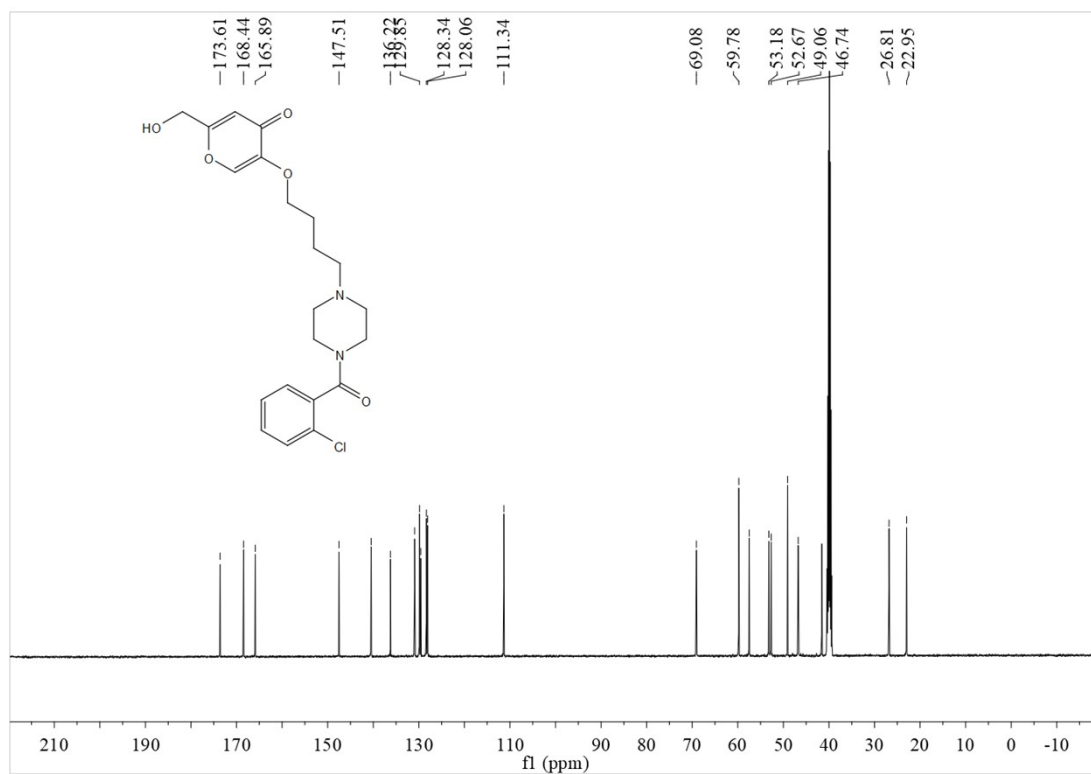
¹H NMR of 5-(4-(4-(4-fluorobenzoyl)piperazin-1-yl)butoxy)-2-(hydroxymethyl)-4H-pyran-4-one (3i)



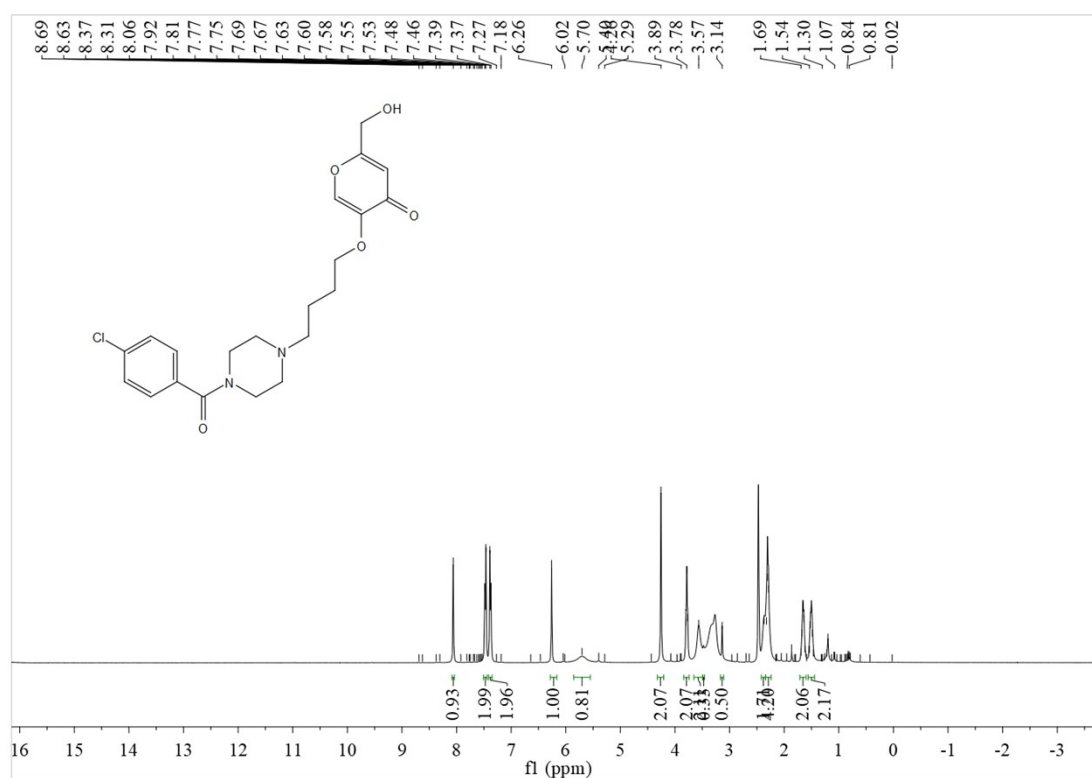
¹³C NMR of 5-(4-(4-(4-fluorobenzoyl)piperazin-1-yl)butoxy)-2-(hydroxymethyl)-4H-pyran-4-one (3i)



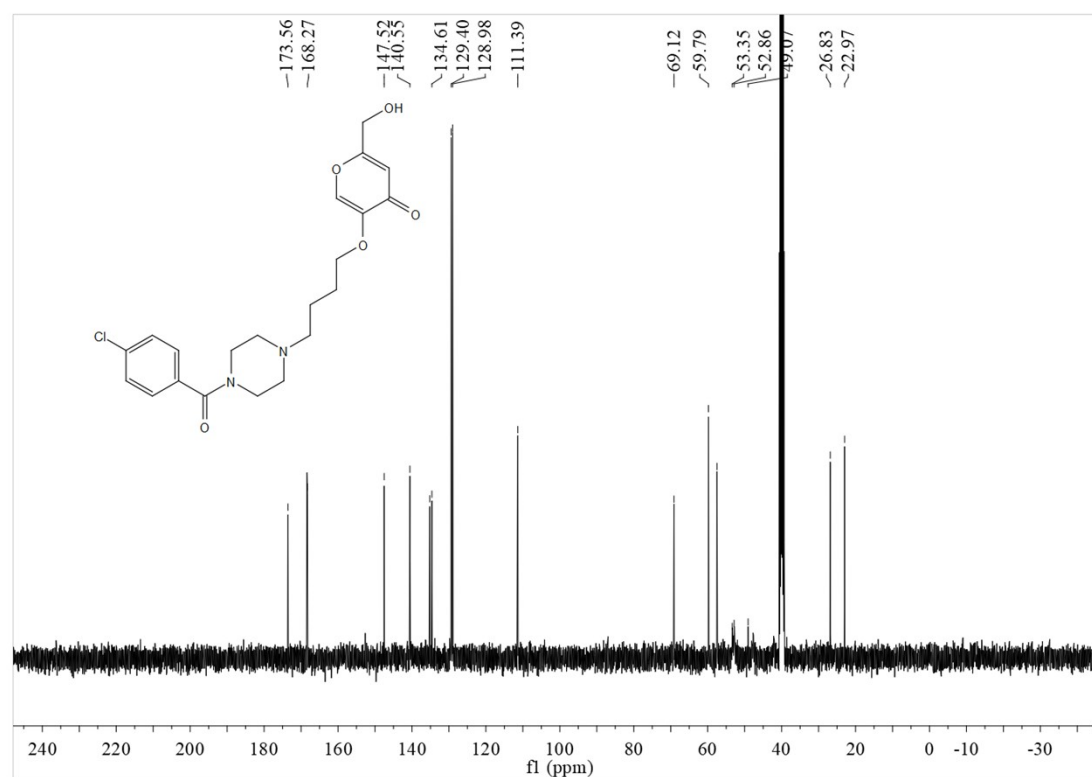
¹H NMR 5-(4-(4-(2-chlorobenzoyl)piperazin-1-yl)butoxy)-2-(hydroxymethyl)-4H-pyran-4-one (3j)



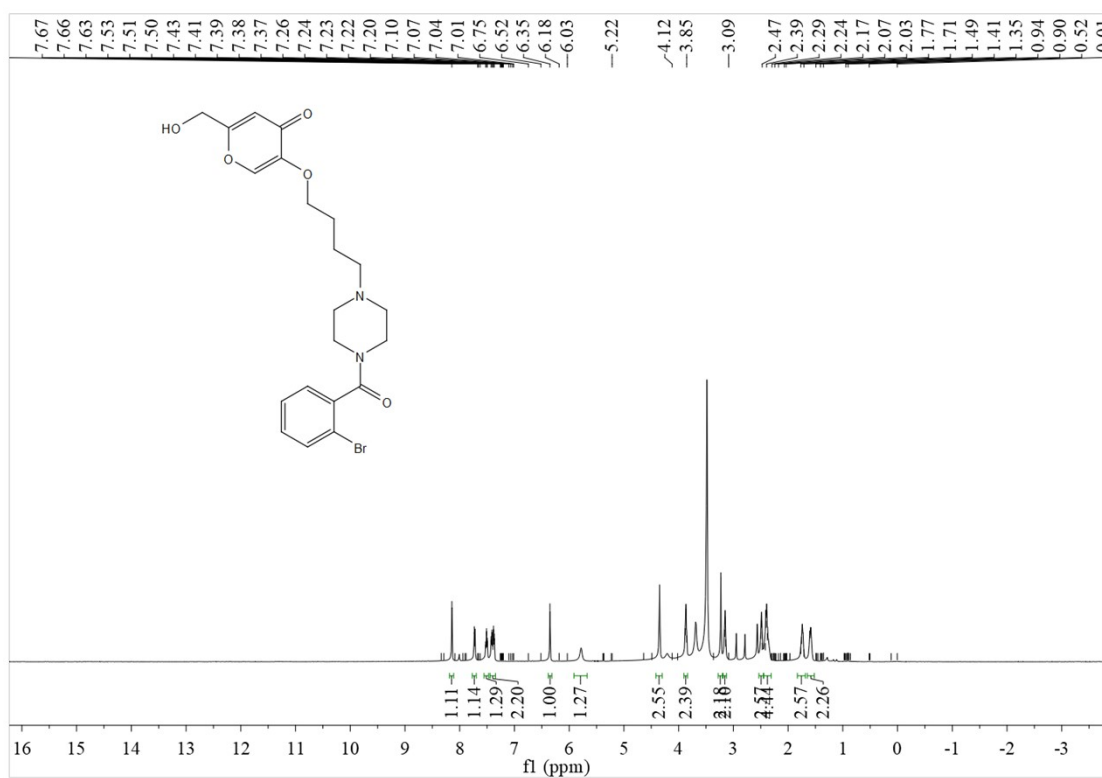
¹³C NMR of 5-(4-(4-(2-chlorobenzoyl)piperazin-1-yl)butoxy)-2-(hydroxymethyl)-4H-pyran-4-one (3j)



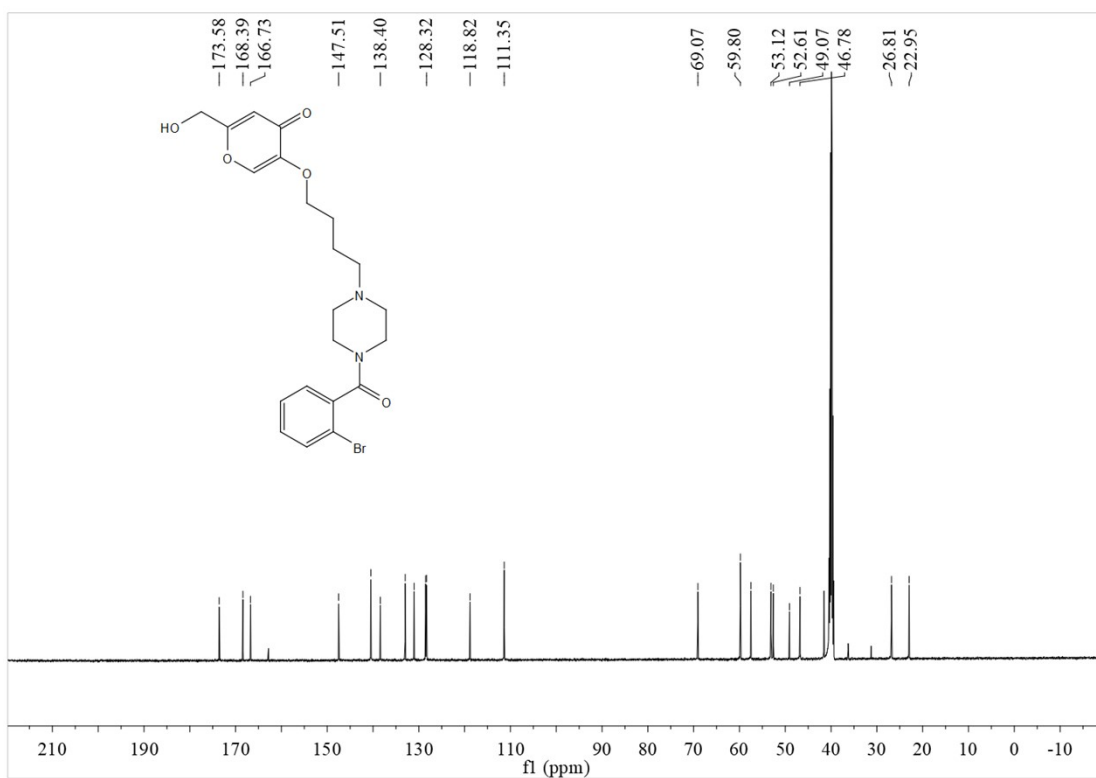
¹H NMR of 5-(4-(4-(4-chlorobenzoyl)piperazin-1-yl)butoxy)-2-(hydroxymethyl)-4H-pyran-4-one (31)



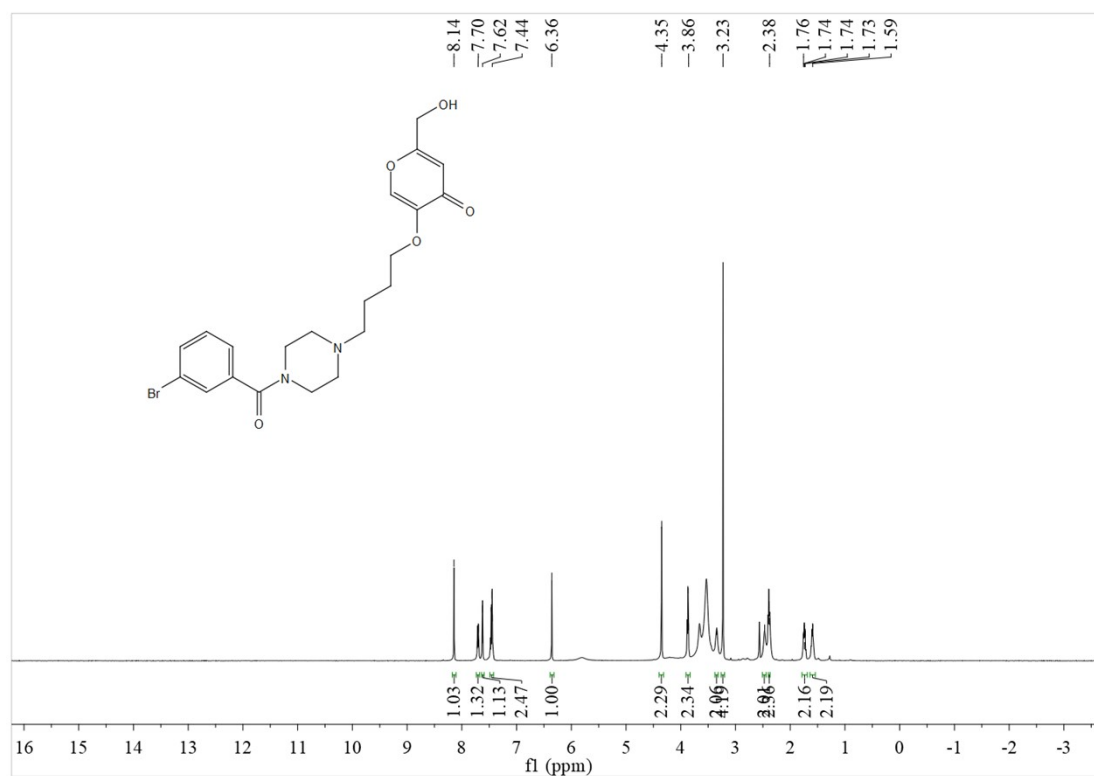
¹³C NMR of 5-(4-(4-(4-chlorobenzoyl)piperazin-1-yl)butoxy)-2-(hydroxymethyl)-4H-pyran-4-one (31)



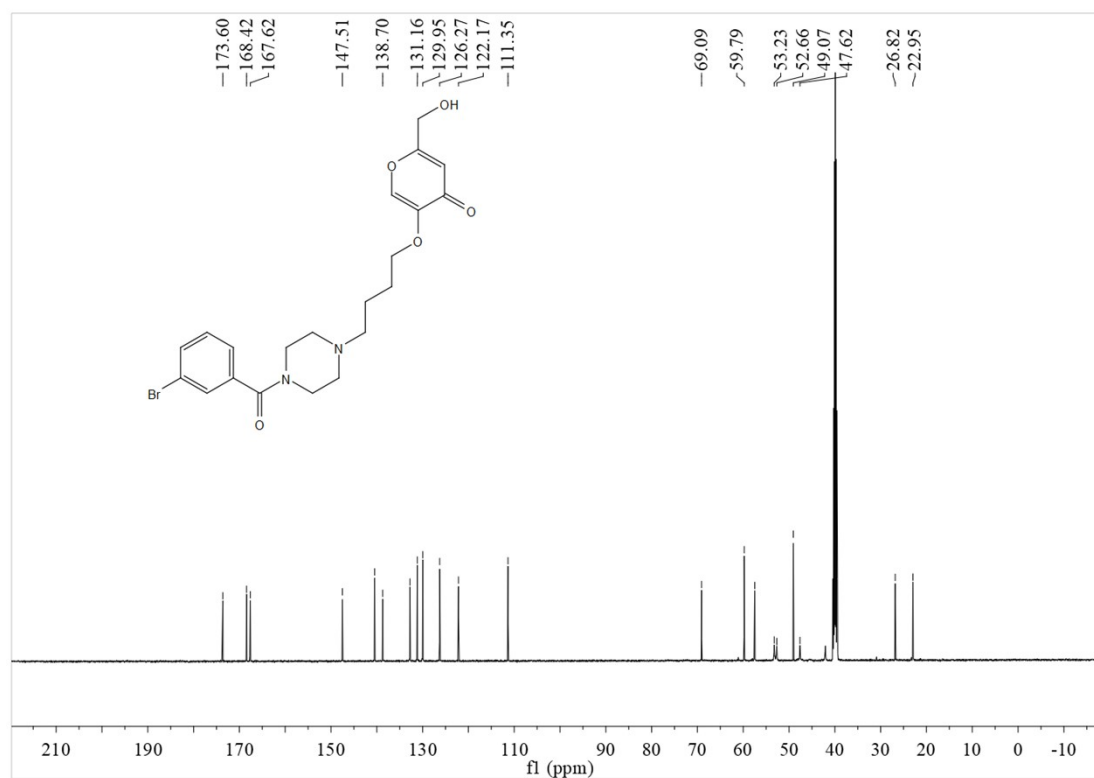
¹H NMR of 5-(4-(4-(2-bromobenzoyl)piperazin-1-yl)butoxy)-2-(hydroxymethyl)-4H-pyran-4-one (3m)



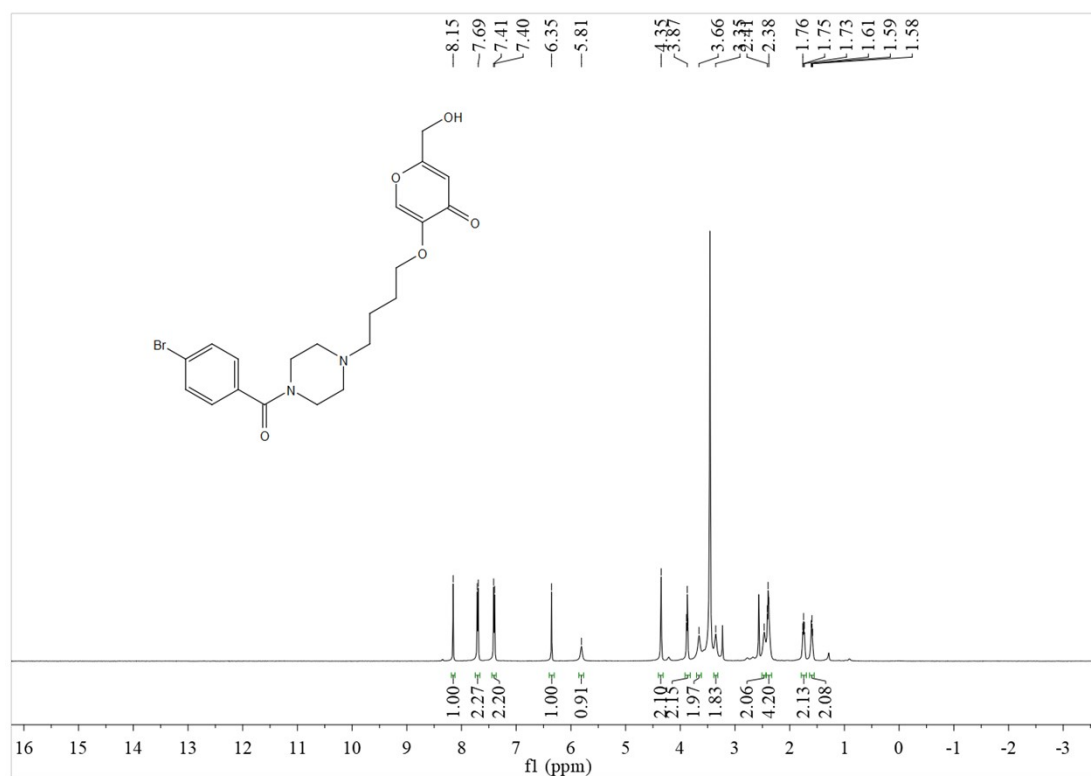
¹³C NMR of 5-(4-(4-(2-bromobenzoyl)piperazin-1-yl)butoxy)-2-(hydroxymethyl)-4H-pyran-4-one (3m)



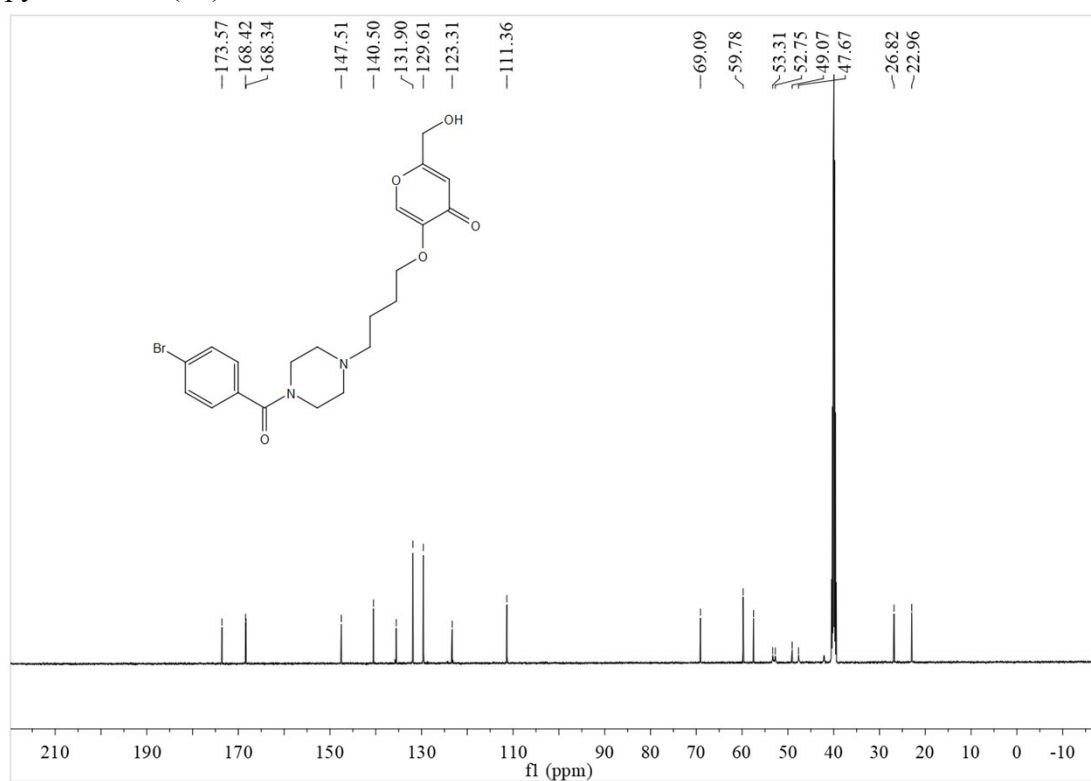
¹H NMR of 5-(4-(4-(3-bromobenzoyl)piperazin-1-yl)butoxy)-2-(hydroxymethyl)-4H-pyran-4-one (3n)



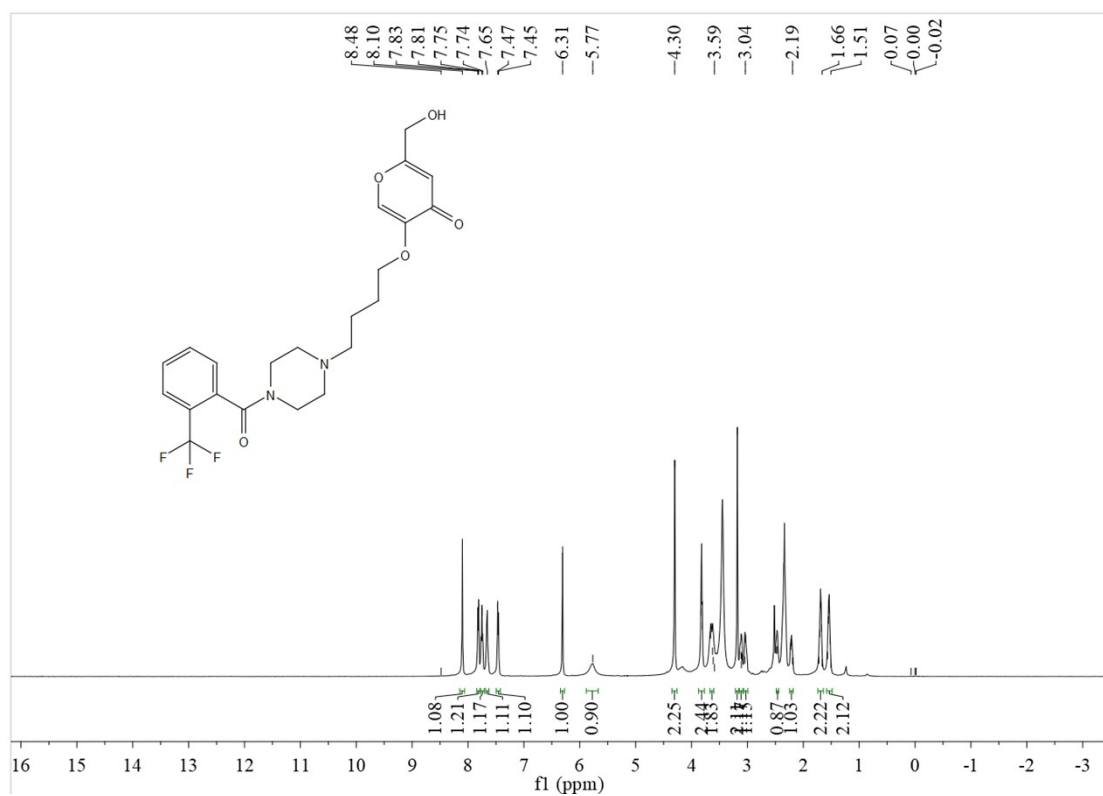
¹³C NMR of 5-(4-(4-(3-bromobenzoyl)piperazin-1-yl)butoxy)-2-(hydroxymethyl)-4H-pyran-4-one (3n)



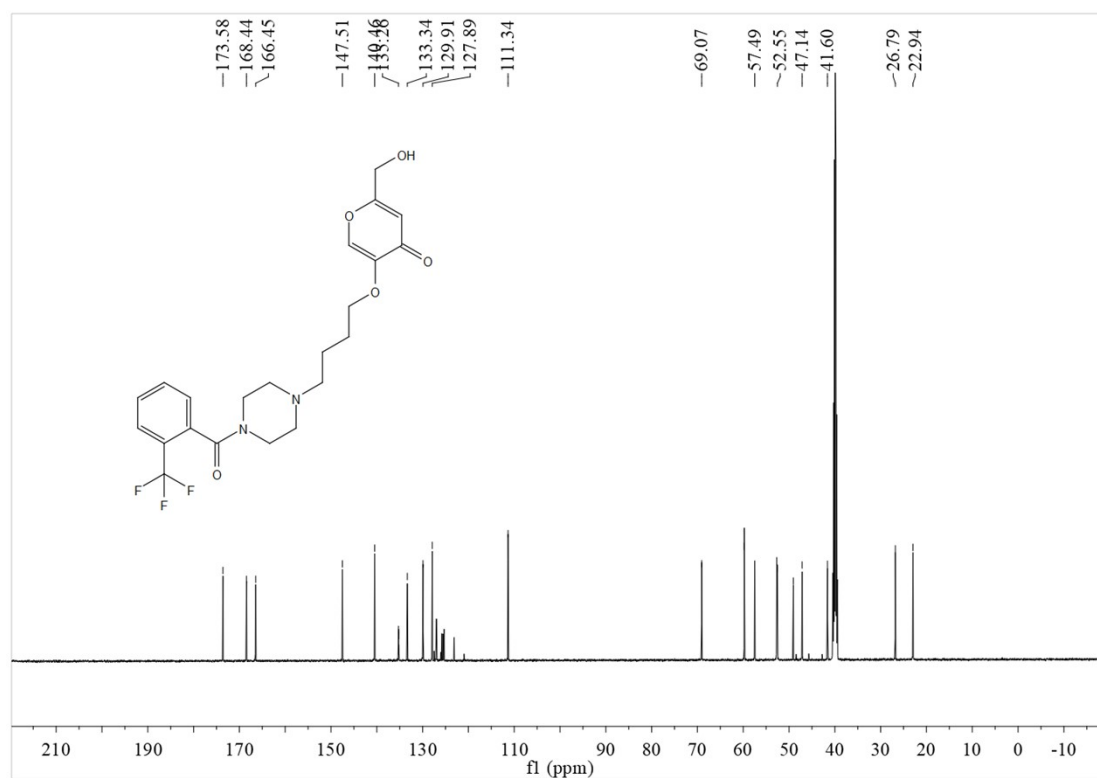
¹H NMR of 5-(4-(4-(4-bromobenzoyl)piperazin-1-yl)butoxy)-2-(hydroxymethyl)-4H-pyran-4-one (3o)



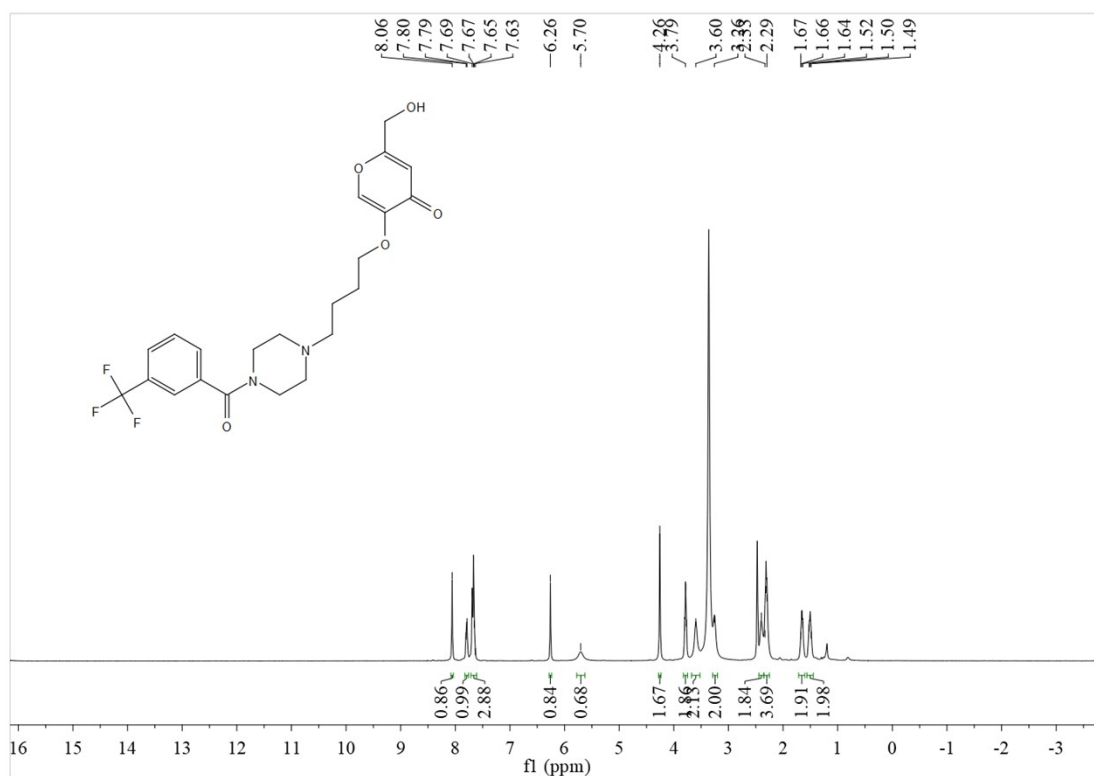
¹³C NMR of 5-(4-(4-(4-bromobenzoyl)piperazin-1-yl)butoxy)-2-(hydroxymethyl)-4H-pyran-4-one (3o)



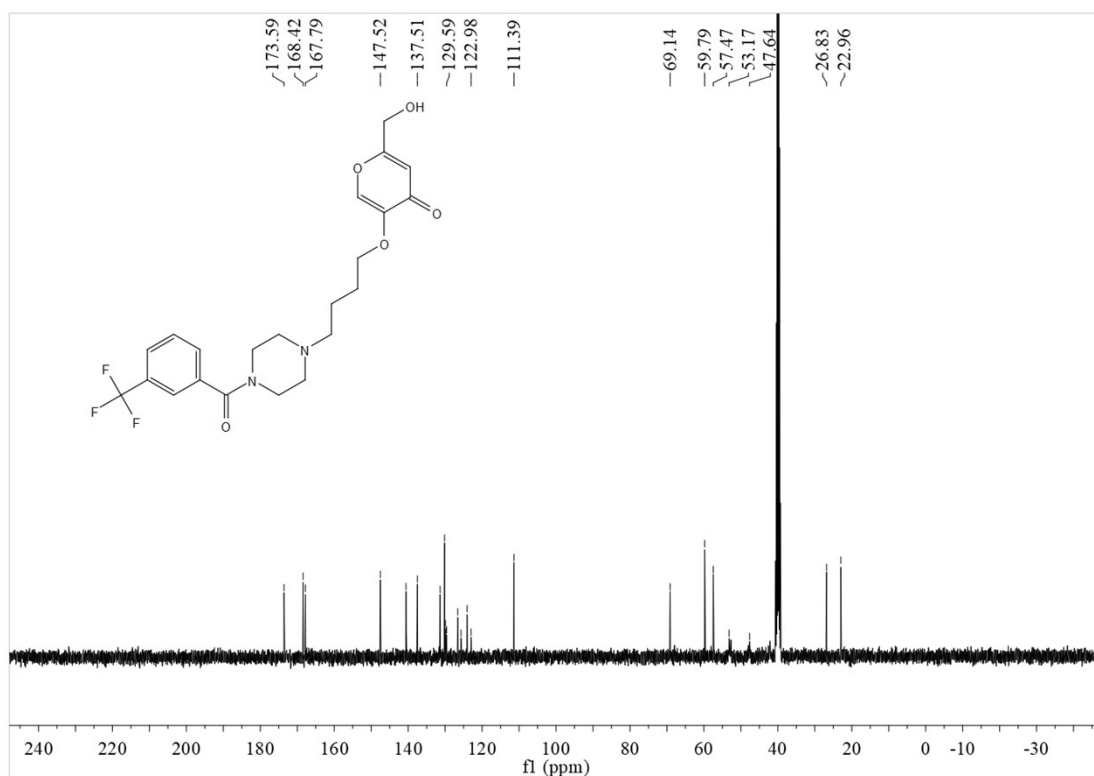
¹H NMR of 2-(hydroxymethyl)-5-(4-(4-(2-(trifluoromethyl)benzoyl)piperazin-1-yl)butoxy)-4H-pyran-4-one (3p)



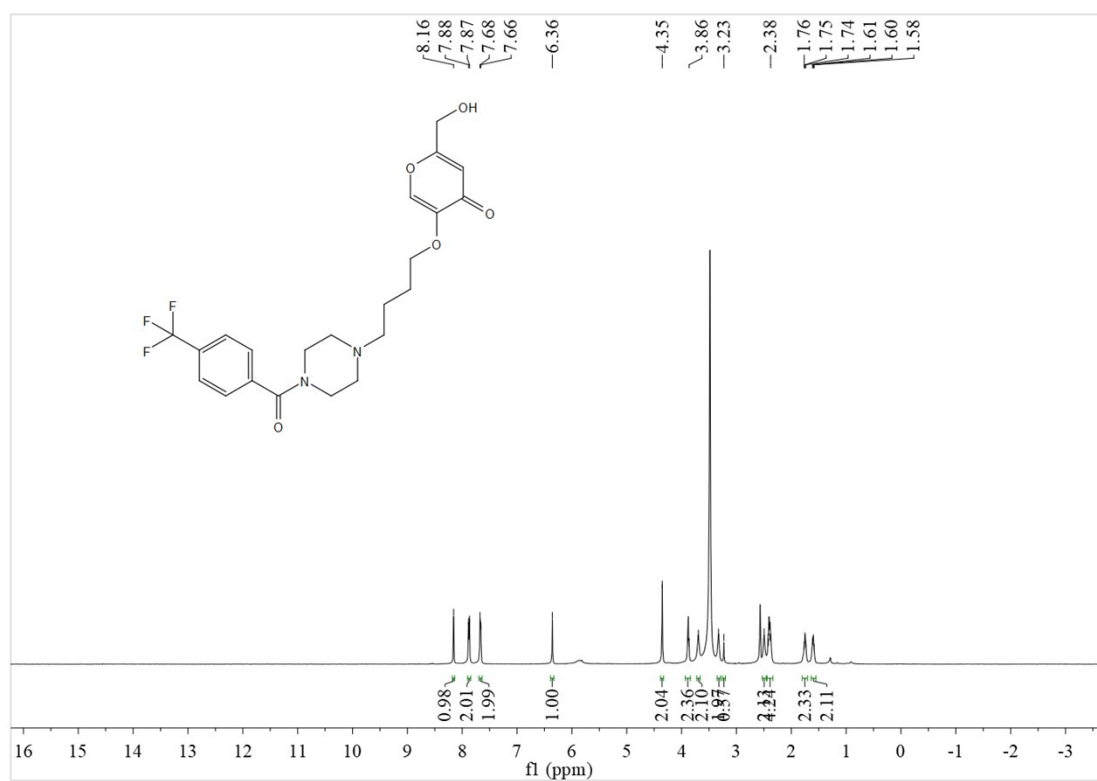
¹³C NMR of 2-(hydroxymethyl)-5-(4-(4-(2-(trifluoromethyl)benzoyl)piperazin-1-yl)butoxy)-4H-pyran-4-one (3p)



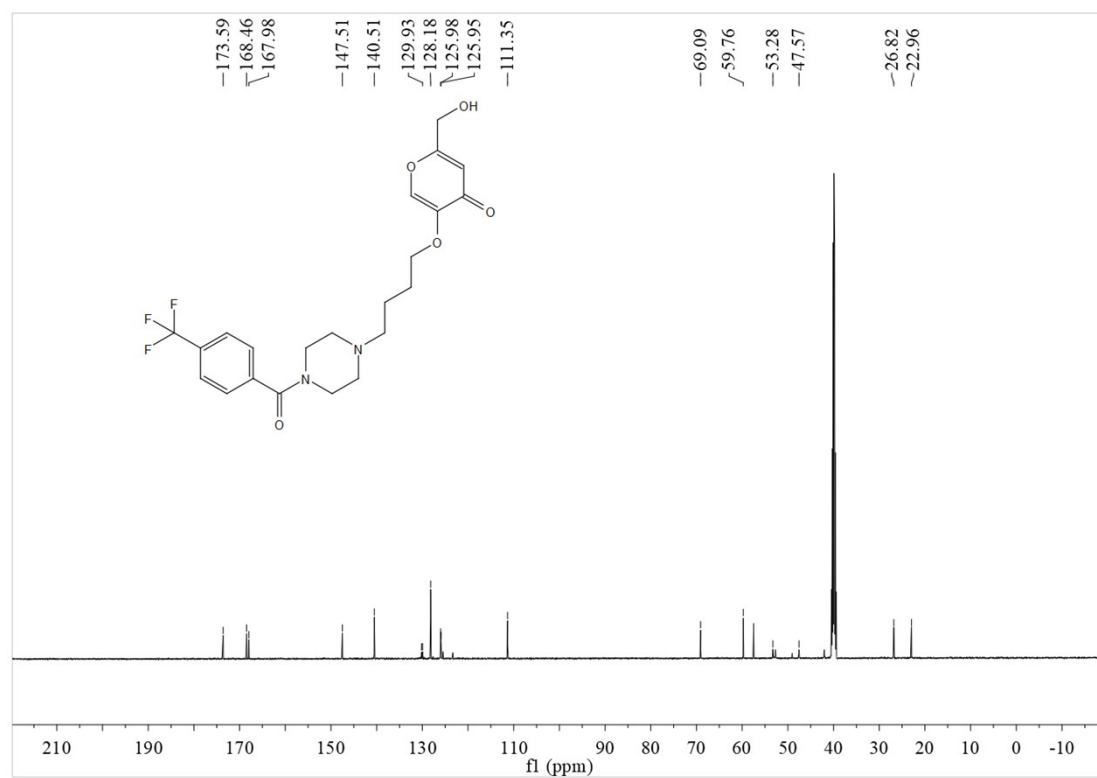
¹H NMR of 2-(hydroxymethyl)-5-(4-(4-(3-(trifluoromethyl)benzoyl)piperazin-1-yl)butoxy)-4H-pyran-4-one (3q)



¹³C NMR of 2-(hydroxymethyl)-5-(4-(4-(3-(trifluoromethyl)benzoyl)piperazin-1-yl)butoxy)-4H-pyran-4-one (3q)



¹H NMR of 2-(hydroxymethyl)-5-(4-(4-(4-(trifluoromethyl)benzoyl)piperazin-1-yl)butoxy)-4H-pyran-4-one (3r)



¹³C NMR of 2-(hydroxymethyl)-5-(4-(4-(4-(trifluoromethyl)benzoyl)piperazin-1-yl)butoxy)-4H-pyran-4-one (3r)