Electronic Supplementary Material (ESI) for RSC Advances.

Supplementary Information for

"Novel Approach for Spectrophotometric Determination of Succinylcholine in Pharmaceutical Formulation via Host-Guest Complextaion with Water-Soluble *p*-Sulfonatocalixarene"

Mohamed K. Abd El-Rahman[a] and Amr M. Mahmoud[a]

[a] Analytical Chemistry Department, Faculty of Pharmacy, Cairo University, Kasr-El Aini Street, Cairo, Egypt 11562.

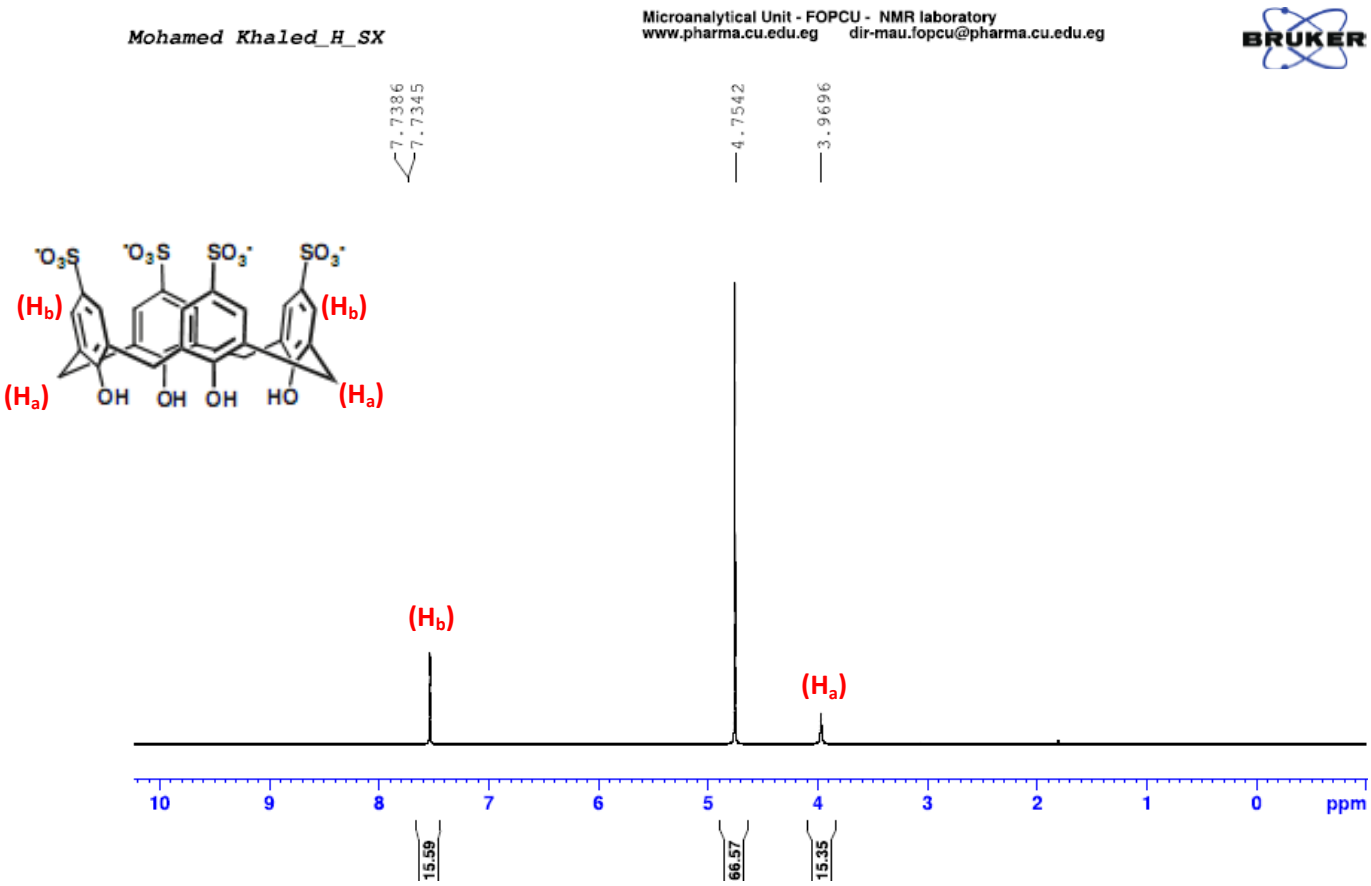

Figure S-1. ^{1}H NMR spectra of SCX 4 with appropriate protons labeled letters.

Section.1. Job's Plot by UV-spectroscopy

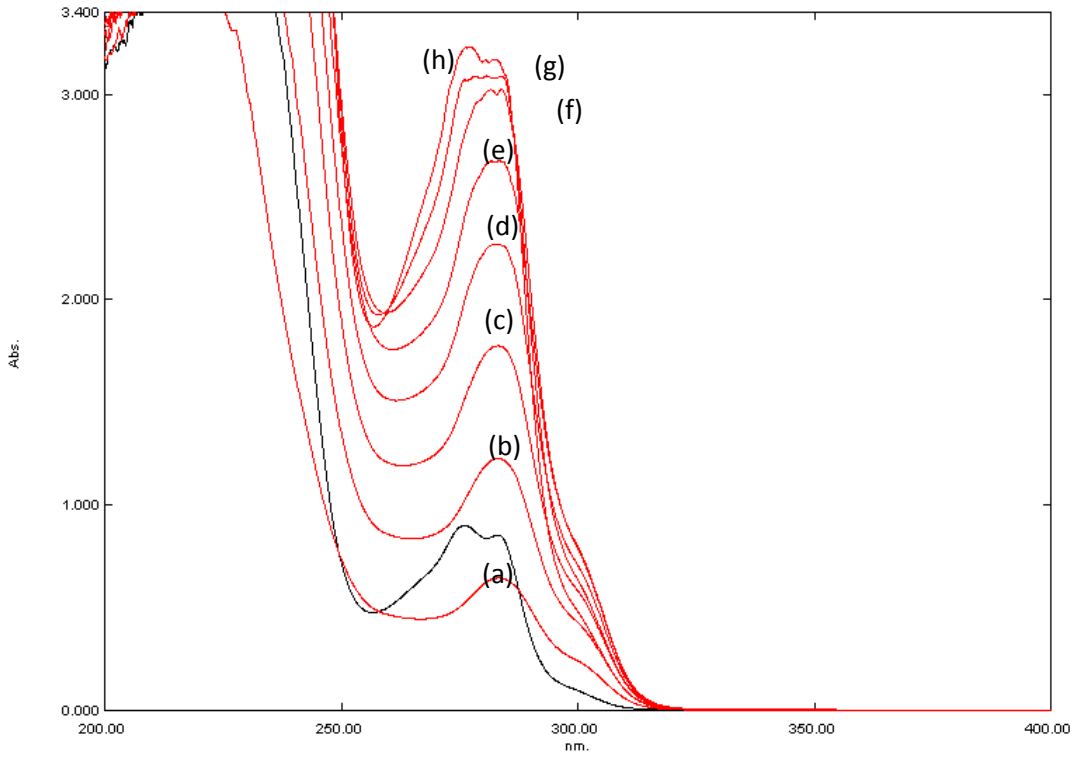

Figure S-2. UV spectra in deionized water of a series of solutions of different molar ratio of SCX4 and SUC between 0 and 1, [SUC]+[SCX4]=1.0x10^{-3}M.The black curve is the UV-spectrum of the divisor 2x10^{-4} M SCX4.

(a).(0.1 mM SCX4: 0.9 mM SUC), (b).(0.2mM SCX4: 0.8mM SUC), (c).(0.3mM SCX4: 0.7mM SUC), (d). (0.4mM SCX4: 0.6mM SUC), (e). (0.5mM SCX4: 0.5mM SUC), (f). (0.6mM SCX4: 0.4mM SUC), (g). (0.7mM SCX4: 0.3mM SUC), (h). (0.8mM SCX4: 0.2mM SUC).

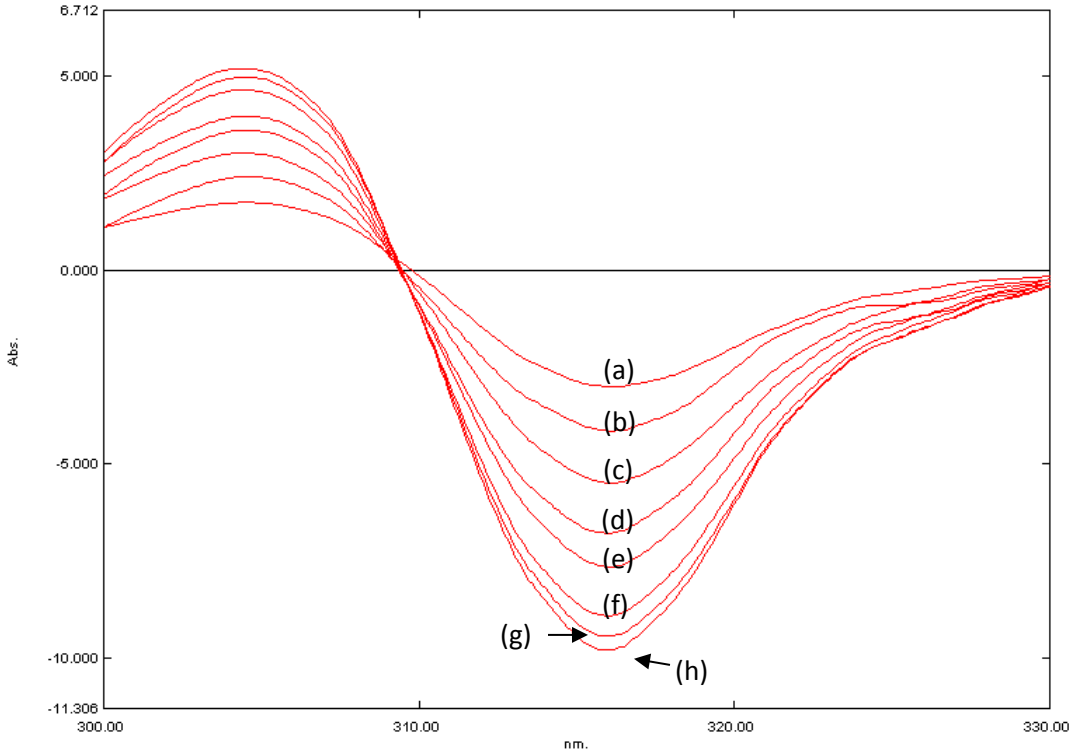

Figure S-3. First derivative of ratio spectra of the complex using $2x10^{-4}$ M SCX4 as a divisor, (a).(0.1 mM SCX4: 0.9 mM SUC), (b).(0.8mM SCX4: 0.2mM SUC), (c).(0.2mM SCX4: 0.8mM SUC), (d). (0.7mM SCX4: 0.3mM SUC), (e). (0.3mM SCX4: 0.7mM SUC), (f). (0.4mM SCX4: 0.6mM SUC), (g). (0.6mM SCX4: 0.4mM SUC), (h). (0.5mM SCX4: 0.5mM SUC).

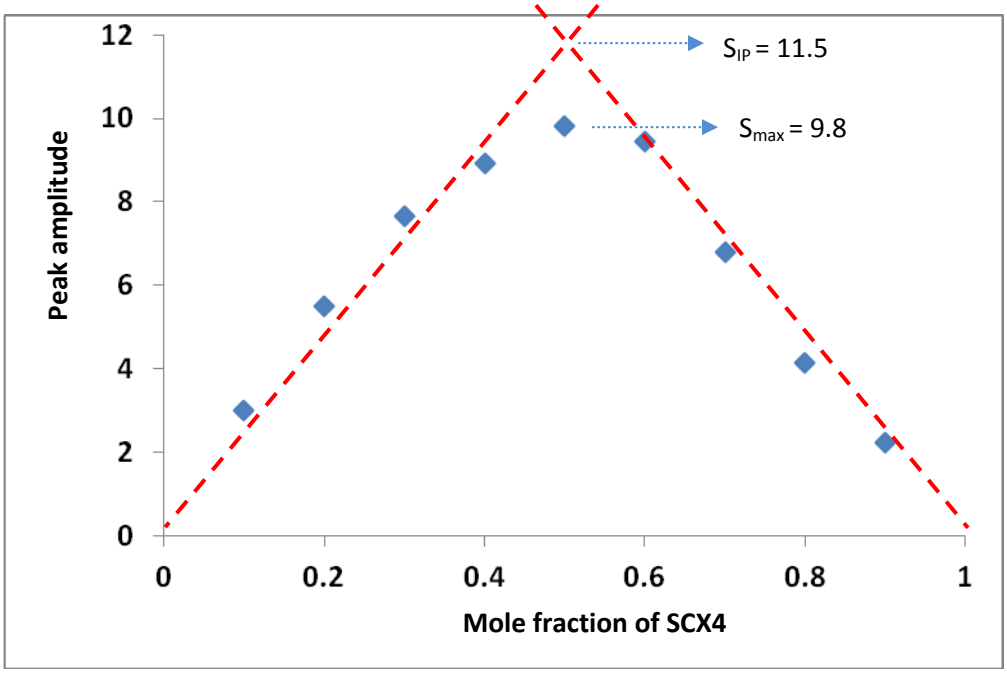

Figure S-4. Job's plot for the determination of the stoichiometry of SCX4 and SUC in the complex, [SUC]+[SCX4]=1.0x10^{-3}M.

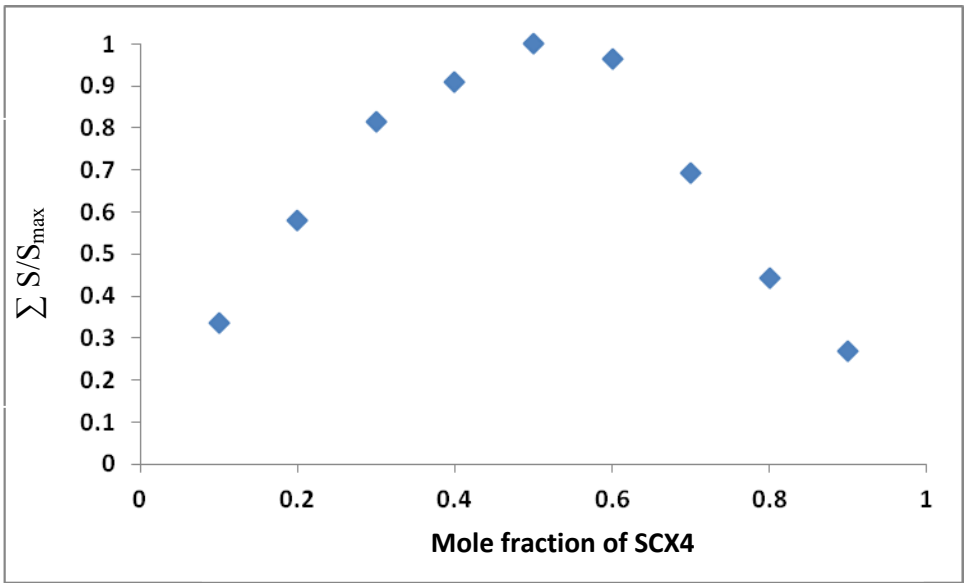

Figure S-5. Normalized Job's plot for the determination of the stoichiometry of SCX4 and SUC in the complex, [SUC]+[SCX4]=1.0x10^{-3}M.

Table S-1. The experimentally determined values of S/S_{MAX} and the value of $\Sigma S/S_{MAX}$ [1].

Mole fraction of host (SCX4)	Peak amplitude (S)	S/S_{max}
0.1	3.30	0.34
0.2	5.69	0.58
0.3	7.99	0.81
0.4	8.92	0.91
0.5	9.80*	1
0.6	9.44	0.963
0.7	6.79	0.69
0.8	4.35	0.44
0.9	2.63	0.27
$\sum S/S_{max}$		**6.01**

* S_{max}

Section 2. Theoretical relation between the concentrations of SUC and the inclusion complex formed

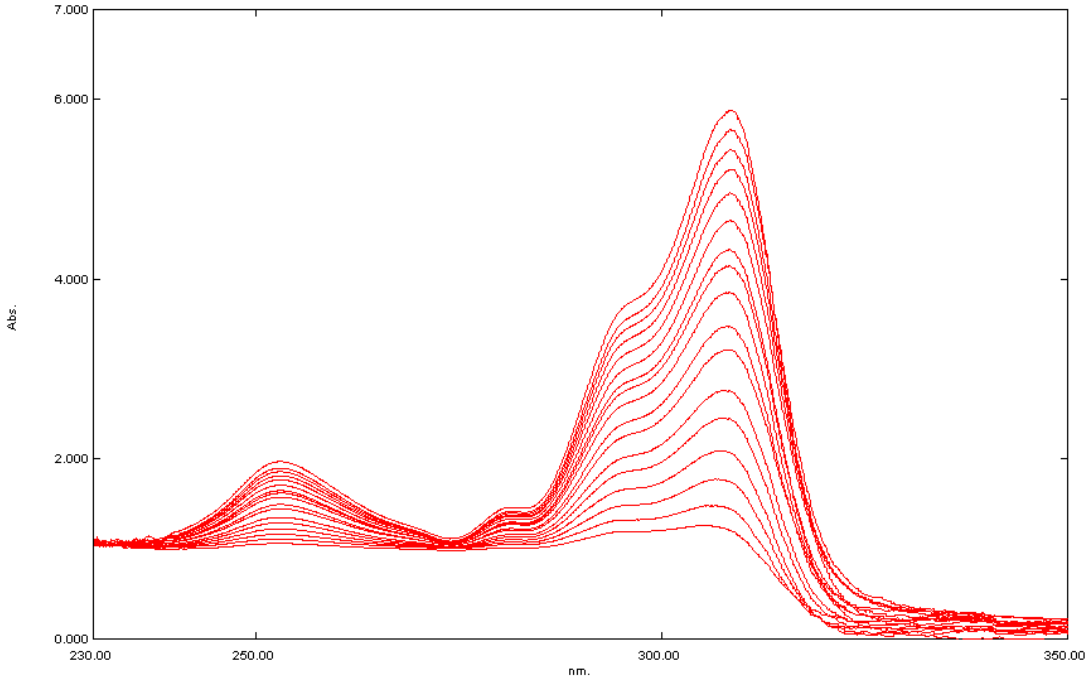

Figure S-6. Ratio spectra of SUC ($1x10^{-5}$–$18x10^{-5}$ M) using the spectrum of $2x10^{-4}$ M of SCX4 as a divisor

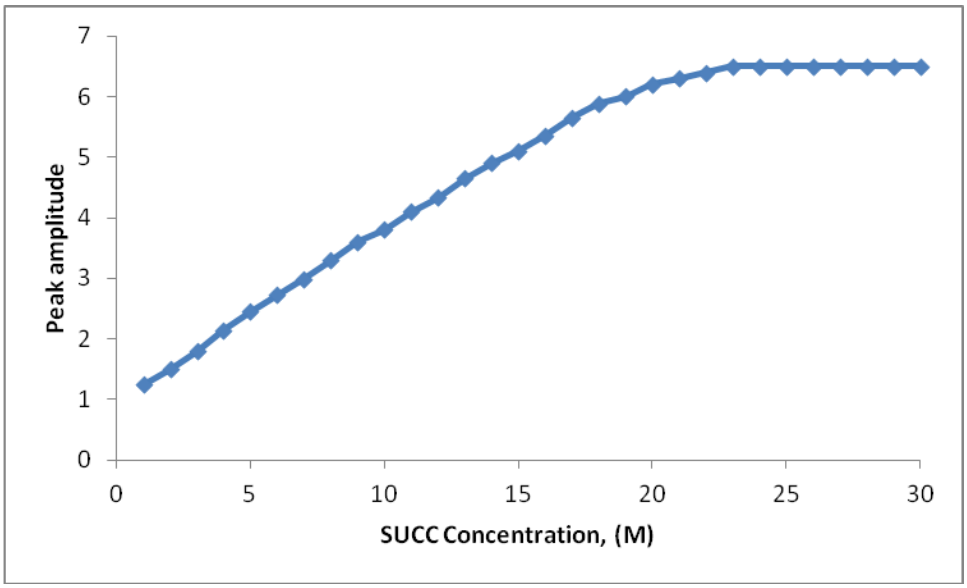

Figure S-7. Plot of peak amplitude of (SCX4-SUC) host-guest complex at 315 nm vs. the concentration of SUC in ranges lower and higher than the host.

References:

[1] E.J. Olson, P. Buhlmann, J Org Chem, 76 (2011) 8406.