BSA nanoparticles as controlled release carrier for isophethalaldoxime palladacycle complex; Synthesis, characterization, *in vitro* evaluation, cytotoxicity and release kinetics analysis

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Electronic Supplementary Information

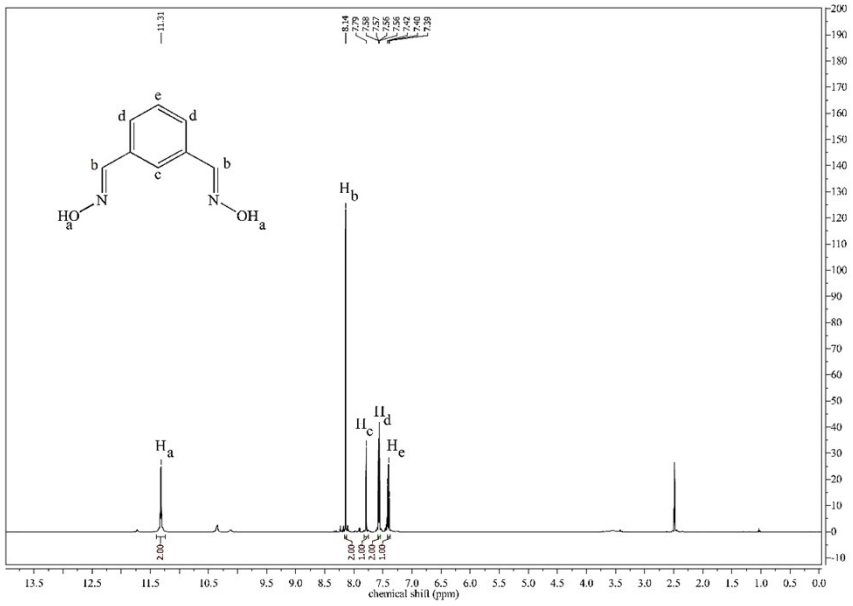

Figure S1. ^{1}H-NMR spectrum of ligand (**1**) in DMSO-d_6.

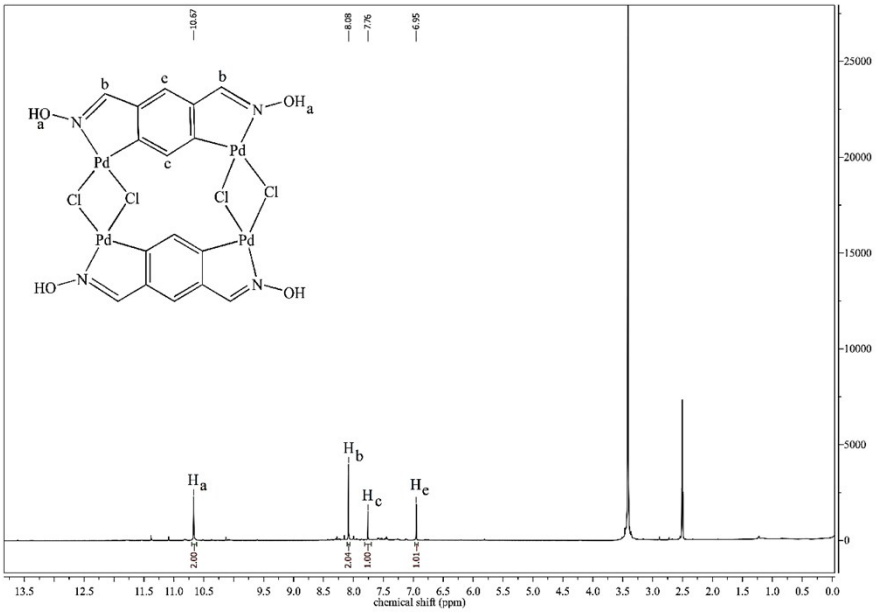

Figure S2. ^{1}H-NMR spectrum of complex (**2**) in DMSO-d_6.

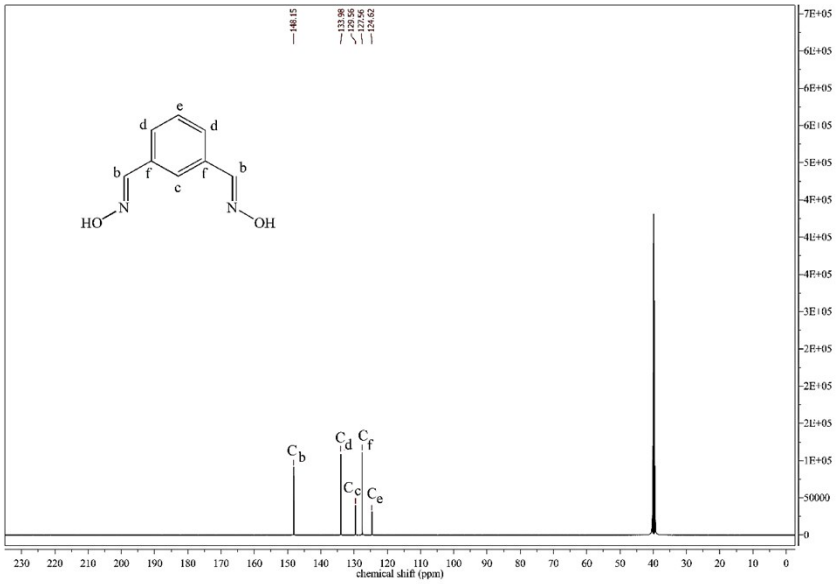

Figure S3. ^{13}C-NMR spectrum of ligand (**1**) in DMSO-d_6.

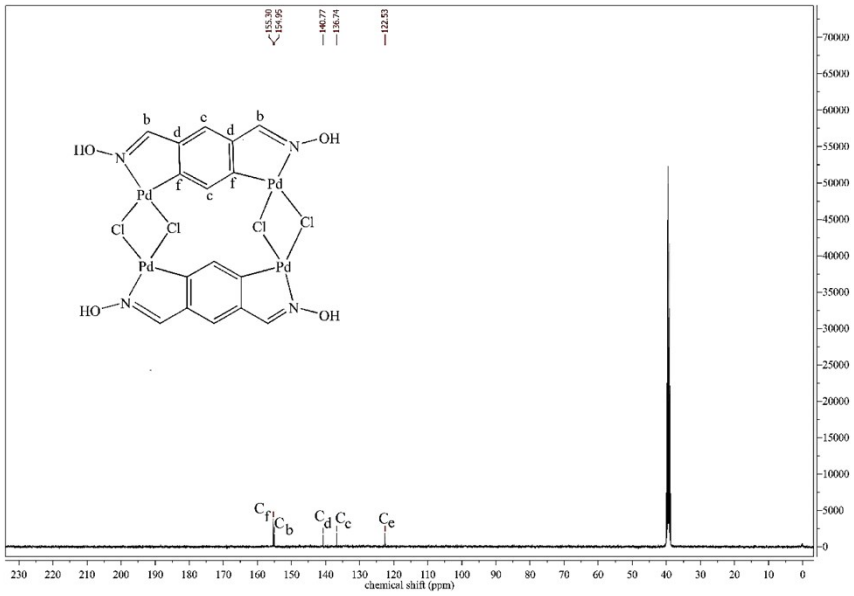

Figure S4. ^{13}C-NMR spectrum of complex (**2**) in DMSO-d_6.

Calculation Results

Peak No.	Zeta Potential	Electrophoretic Mobility
1	-21.5 mV	-0.000135 cm2/Vs
2	--- mV	--- cm2/Vs
3	--- mV	--- cm2/Vs

Zeta Potential (Mean) : -21.5 mV

Electrophoretic Mobility Mean : -0.000135 cm²/Vs

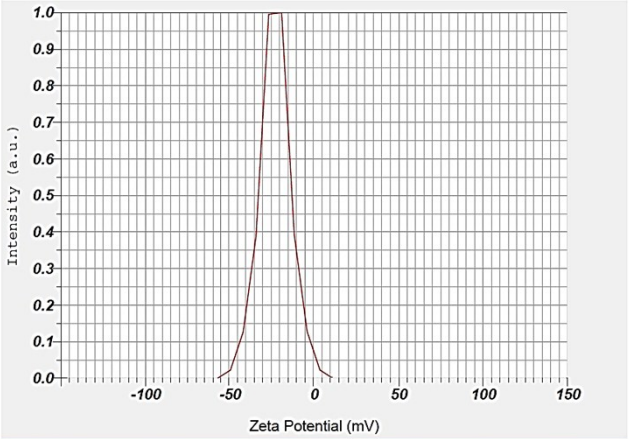

Figure S5. zeta potential diagram of palladium complex loaded BSA nanoparticles.

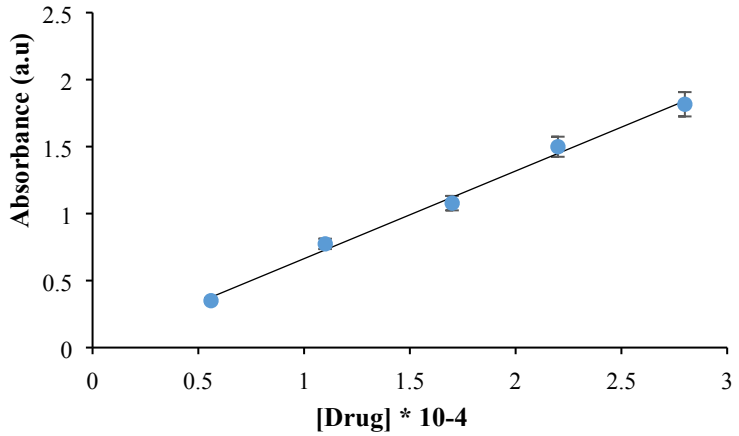

Figure S6. Standard calibration curve of Palladium complex (**2**).

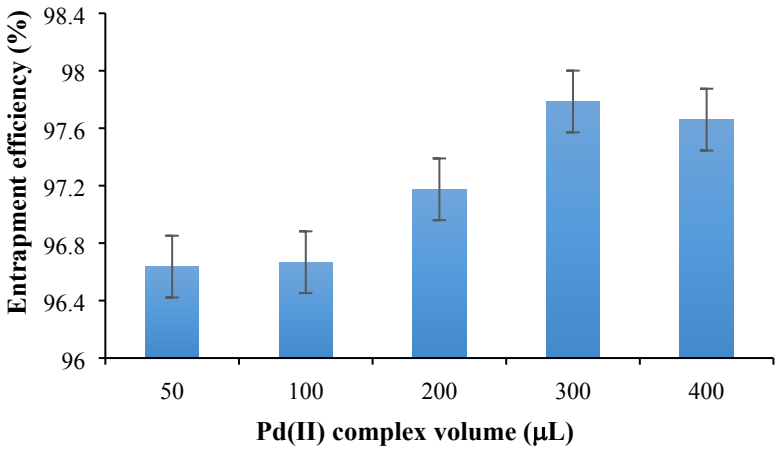

Figure S7. Chart of % entrapment efficiency of the Pd(II) complex in various volumes on the BSA-NPs.

Table S1: Experimental and predicted cumulative release values for different release mechanism models.

Time (h)	CDR (%)					
	Experimental	Predicted				
		Zero-order	First-order	Higuchi	Korsmeyer-Peppas	Hixson-Crowell
0	0.00	0.00	0.00	0.00	0.00	0.00
2	19.32	5.29	7.14	14.61	23.34	6.48
4	28.97	10.59	13.76	20.67	27.24	12.68
6	31.39	15.88	19.92	25.31	29.82	18.59
8	33.80	21.17	25.63	29.23	31.80	24.23

10	34.77	26.47	30.94	32.68	33.43	29.61
15	36.10	39.70	42.61	40.02	36.59	41.92
20	36.70	52.93	52.31	46.21	39.02	52.71
25	38.63	33.64	37.65	40.82	41.08	36.49
30	46.36	40.36	43.28	44.72	44.86	42.51
35	50.70	47.10	48.39	48.30	48.32	48.14
40	52.00	53.82	53.04	51.64	51.53	53.39
45	52.60	60.55	57.28	54.77	54.55	58.28

Table S2: Goodness of fit values for phase I release process.

Parameter	**Mechanis model**				
	Zero-order	**First-order**	**Higuchi**	**Korsmeyer-Peppas**	**Hixson-Crowell**
N_observed	8	8	8	8	8
DF	7	7	7	6	7
R_obs-pre	0.7489	0.8091	0.9183	0.9848	0.7894
Rsqr	-0.1728	0.1950	0.7625	0.9698	0.0816
Rsqr_adj	-0.1728	0.1950	0.7625	0.9647	0.0816
MSE	182.8734	125.5163	37.0272	5.4998	143.1950
MSE_root	13.5231	11.2034	6.0850	2.3452	11.9664
Weighting	1	1	1	1	1
SS	1280.1136	878.6140	259.1907	32.9991	1002.3650
WSS	1280.1136	878.6140	259.1907	32.9991	1002.3650
AIC	59.2376	56.2268	46.4605	31.9718	57.2809
MSC	-1.6118	-1.2354	-0.0146	1.7965	-1.3672
Model parameter	k_0=2.647	k_1=0.037	k_H=10.333	k_{KP}=19.994 n=0.223	k_{HC}=0.011

Table S3: Goodness of fit values for phase II release process.

Parameter	**Mechanism model**				
	Zero-order	**First-order**	**Higuchi**	**Korsmeyer-Peppas**	**Hixson-Crowell**
N_observed	5	5	5	5	5
DF	4	4	4	3	4

R_obs-pre	0.9142	0.9351	0.9307	0.9313	0.9299
Rsqr	-0.0403	0.7126	0.8659	0.8670	0.5546
Rsqr_adj	-0.0403	0.7126	0.8659	0.8227	0.5546
MSE	35.0886	9.6927	4.5222	5.9793	15.0244
MSE_root	5.9236	3.1133	2.1265	2.4453	3.8761
Weighting	1	1	1	1	1
SS	140.3543	38.7710	18.0888	17.9380	60.0977
WSS	140.3543	38.7710	18.0888	17.9380	60.0977
AIC	26.7208	20.2884	16.4765	18.4346	22.4799
MSC	-0.4395	0.8470	1.6094	1.2178	0.4087
Model parameter	k_0=1.346	k_1=0.019	k_H=8.164	k_{KP} =8.695 n=0.482	k_{HC} =0.006