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NEW JOURNAL OF CHEMISTRY

Synthesis, Characterization, Crystal Structure of Copper-glutamate Metal Organic frameworks (MOFs) and its Adsorptive Removal of Ciprofloxacin Drug from Aqueous Solution

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Table S1: Physical and Analytical Data of Copper Glutamate MOF

Ligand/MOF	Appearance of ligand/ MOFs	Appearance of metal salt	Yield (%)	Molecular weight (g/mol)	Melting point (^oC)	Elemental analysis % found (% calculated) C	H	N
Glutamic acid	White powder	-	-	147.13	199	- (40.78)	- (6.12)	- (9.51)
$[Cu(Glu)_2(H_2O)].H_2O$	Deep blue crystals	Deep green	60	244.69	201	29.41 (29.42)	4.37 (4.09)	5.70 (5.72)

Table S2: Hydrogen-Bond Geometry (Å, °) with symmetry for $[Cu(Glu)_2(H_2O)].H_2O$

D—H···A	symm.	D—H	H···A	D···A	D—H···A
C7-H71···O4	-x+1/2,y+1,z-1/2	0.96	2.59	3.3552 (17)	137 (1)
C7-H71…O12	-x+3/2,-y+1,z-1/2	0.96	2.57	3.4134 (17)	146 (1)
N1-H11…O2	x+1/2,-y+3/2,-z+1	0.86	2.21	3.41134 (17)	146 (1)
O13-H132…O11	-x+3/2,-y+1,z+1/2	0.84	1.88	2.7046 (17)	169 (1)
O13-H131…O10	x+1,y,z	0.82	1.96	2.7536 (17)	164 (1)
O12-H122…O13	-	0.82	1.89	2.7042 (17)	171 (1)

O12-H121…O13	x-1/2,-y+1/2,-z+1	0.80	2.01	2.7685 (17)	160 (1)

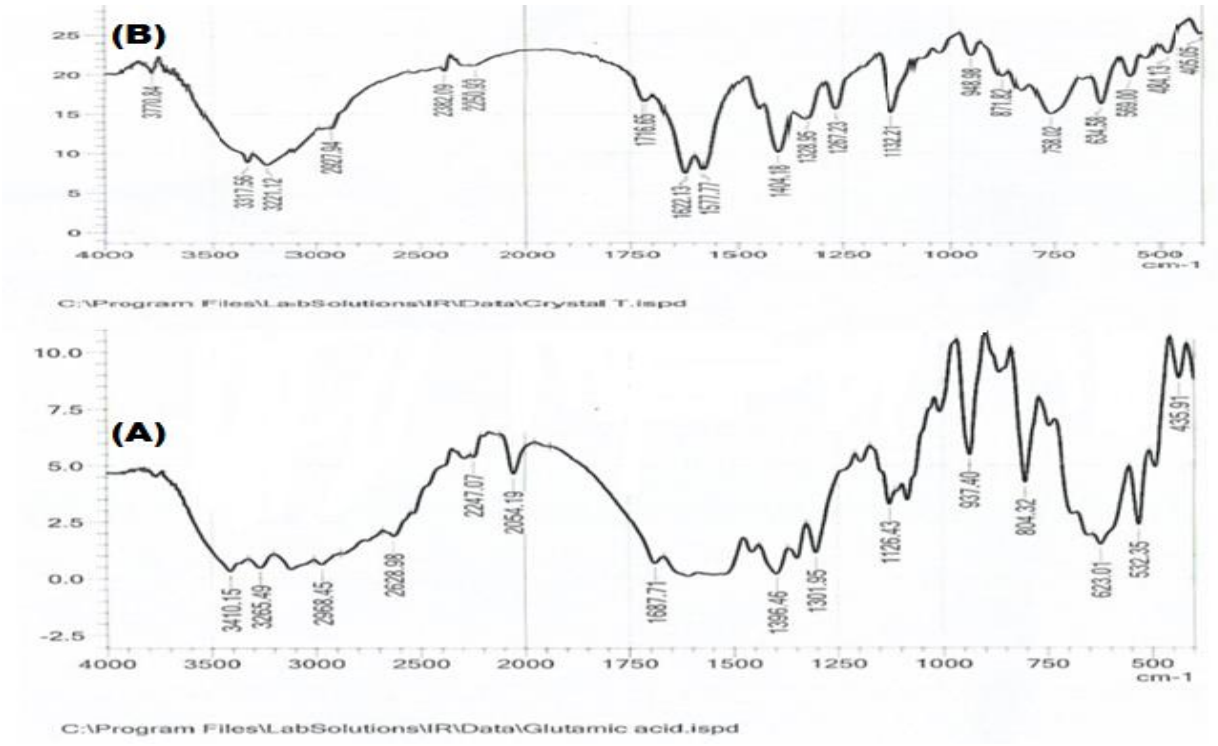

Fig S1: Superimposition of FTIR of (A) glutamic acid and (B) [Cu(Glu)(H_2O)].H_2O

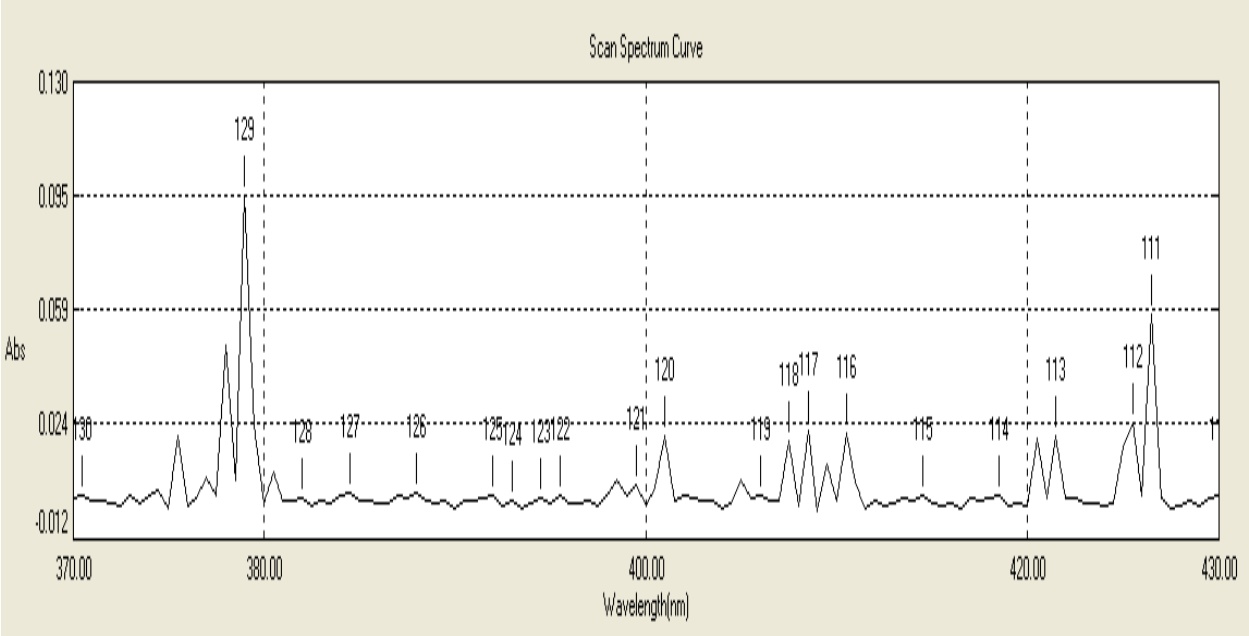

Fig. S2: Visible spectrum of glutamic acid

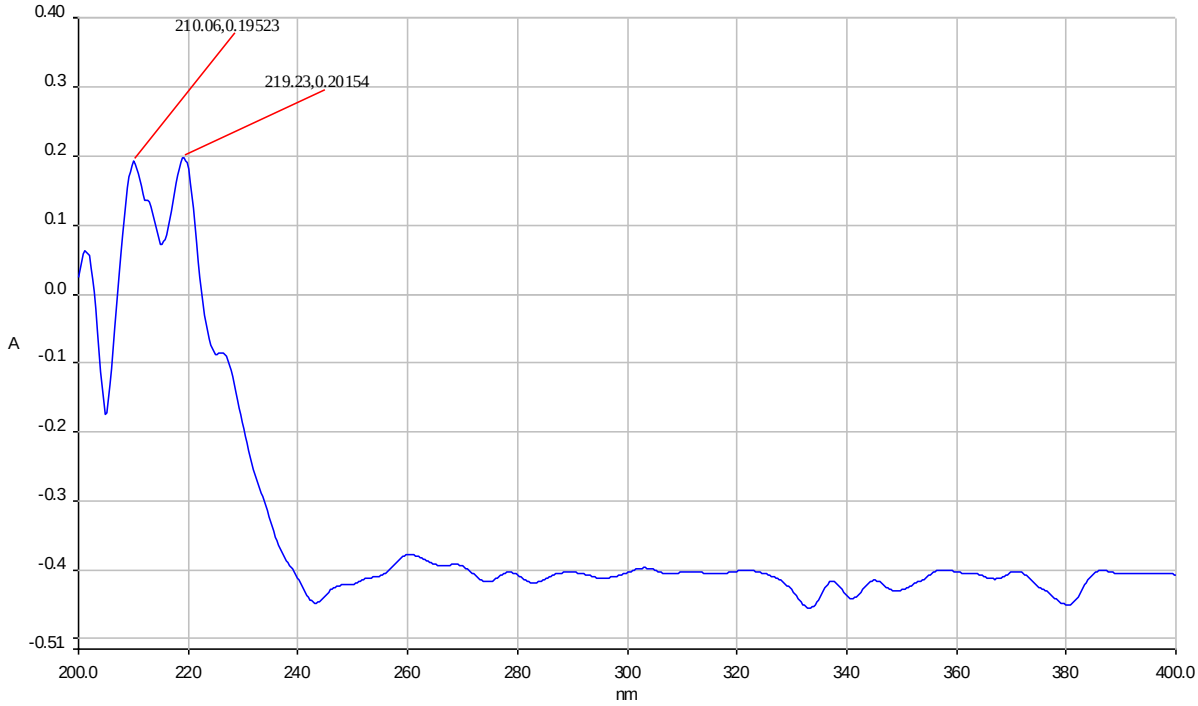

Fig. S3: Ultra-violet spectrum of [Cu(Glu)(H_2O)].H_2O

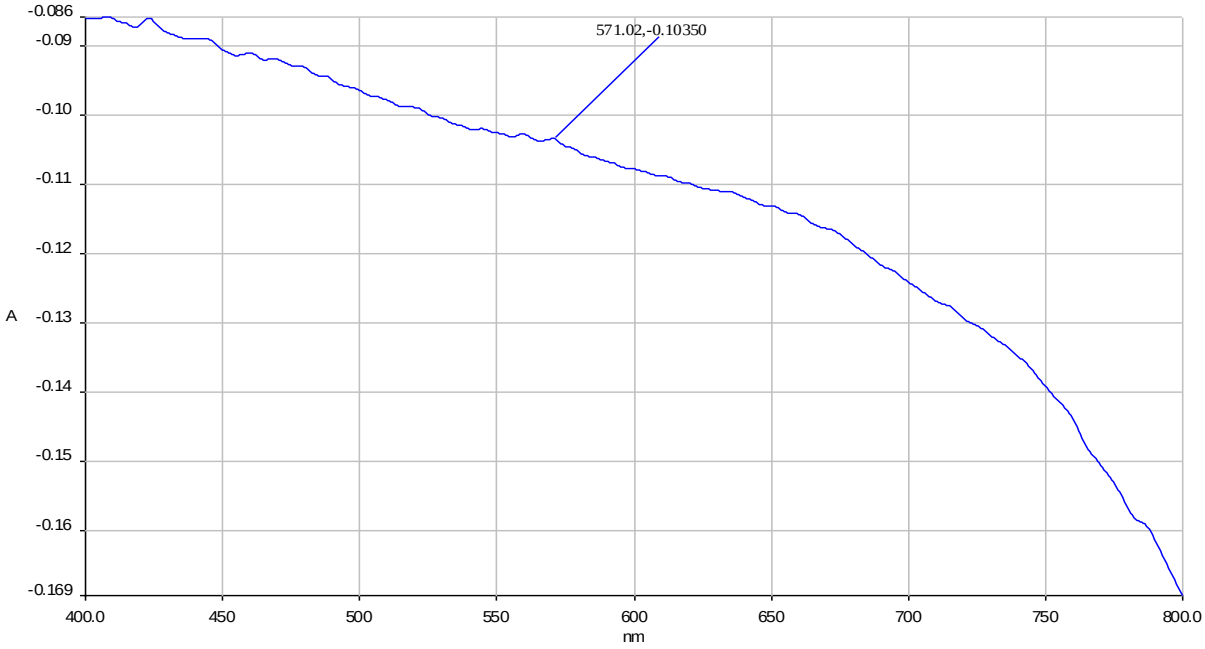

Fig. S4: Visible spectrum of $[Cu(Glu)(H_2O)].H_2O$

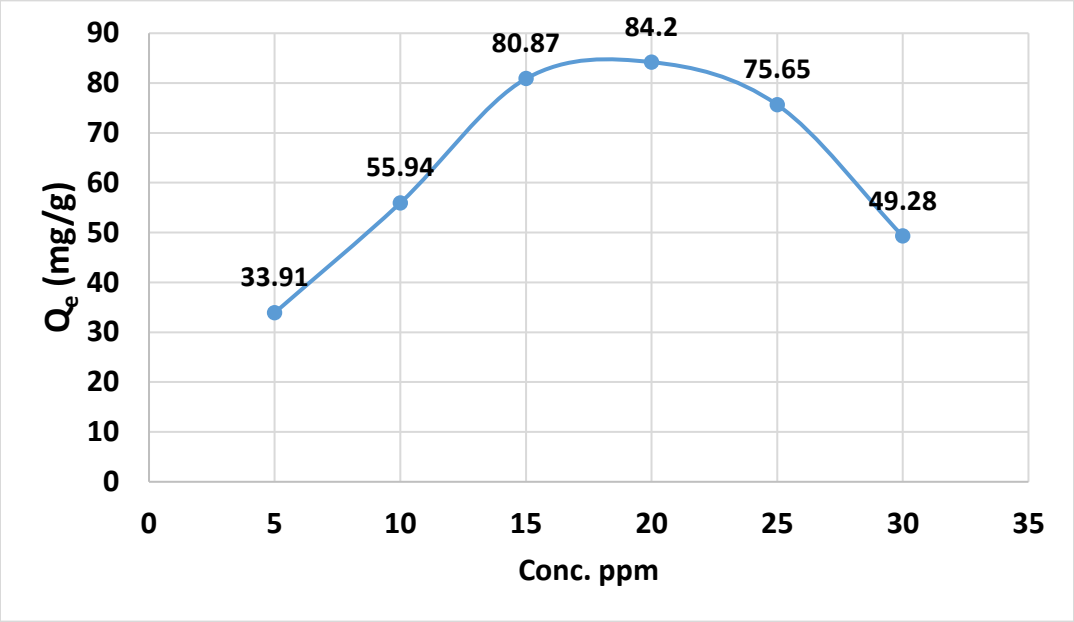

Fig. S5: Effect of Concentration on the Adsorption of Ciprofloxacin $[Cu(Glu)_2(H_2O)].H_2O$ at pH of 6.0.

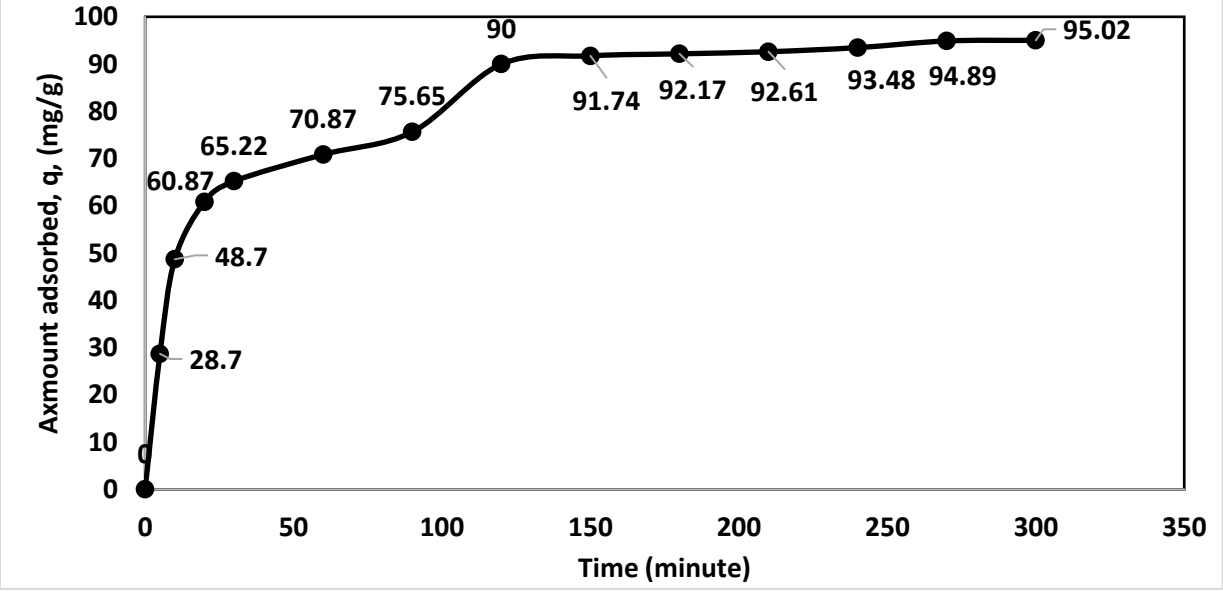

Fig. S6: **Effect of Contact Time on the Adsorption of Ciprofloxacin over $[Cu(Glu)_2(H_2O)].H_2O$ at Initial Ciprofloxacin Concentrations of 20 ppm and pH of 6.0.**

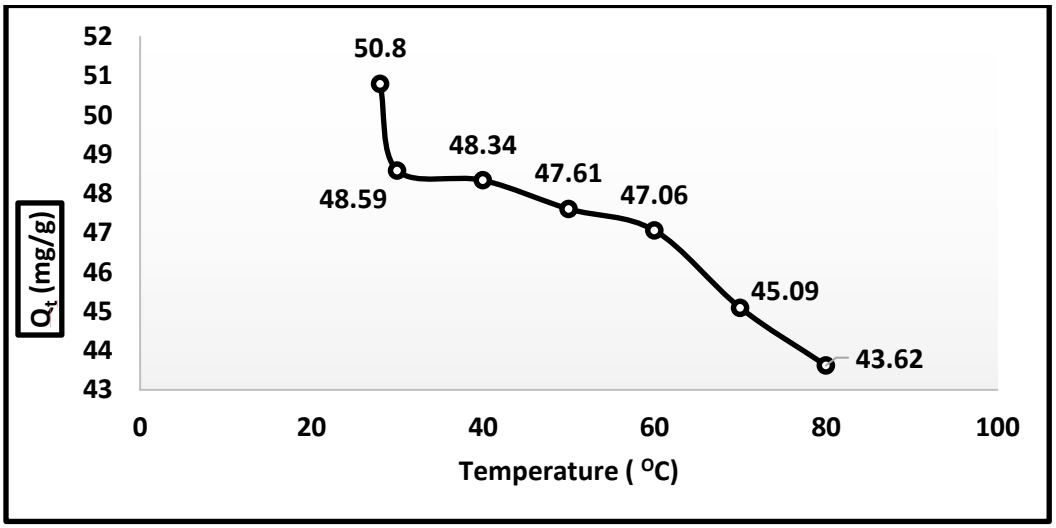

Fig. S7: **Effect of Temperature on the Adsorption of Ciprofloxacin over $[Cu(Glu)_2(H_2O)].H_2O$ at Initial Ciprofloxacin Concentrations of 20 ppm and pH of 6.0.**

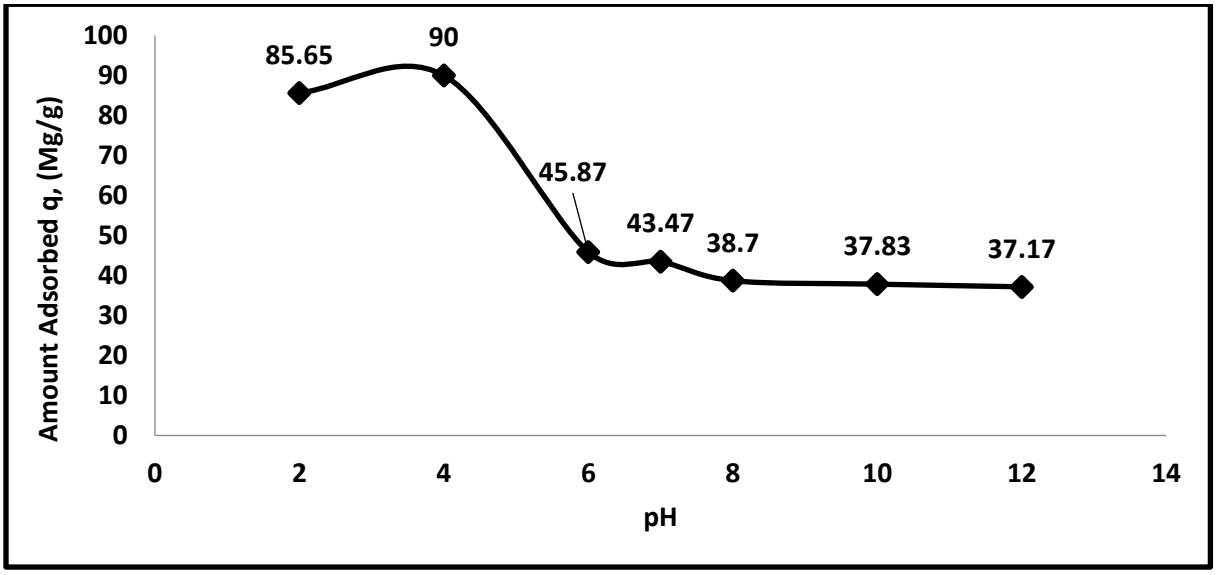

Fig. S8: **Effect of pH on the Adsorption of Ciprofloxacin over $[Cu(Glu)_2(H_2O)].H_2O$ at Initial Ciprofloxacin Concentrations of 20 ppm.**

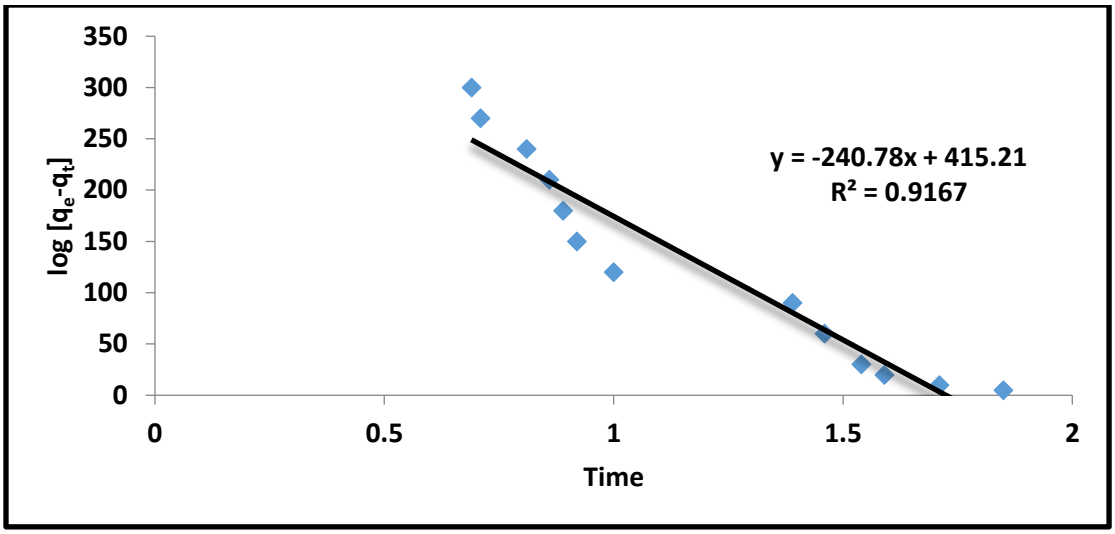

Fig. S9: Plot of the Pseudo-First-Order Kinetics of the Ciprofloxacin Adsorption over $[Cu(Glu)_2(H_2O)].H_2O$ at 20 ppm.

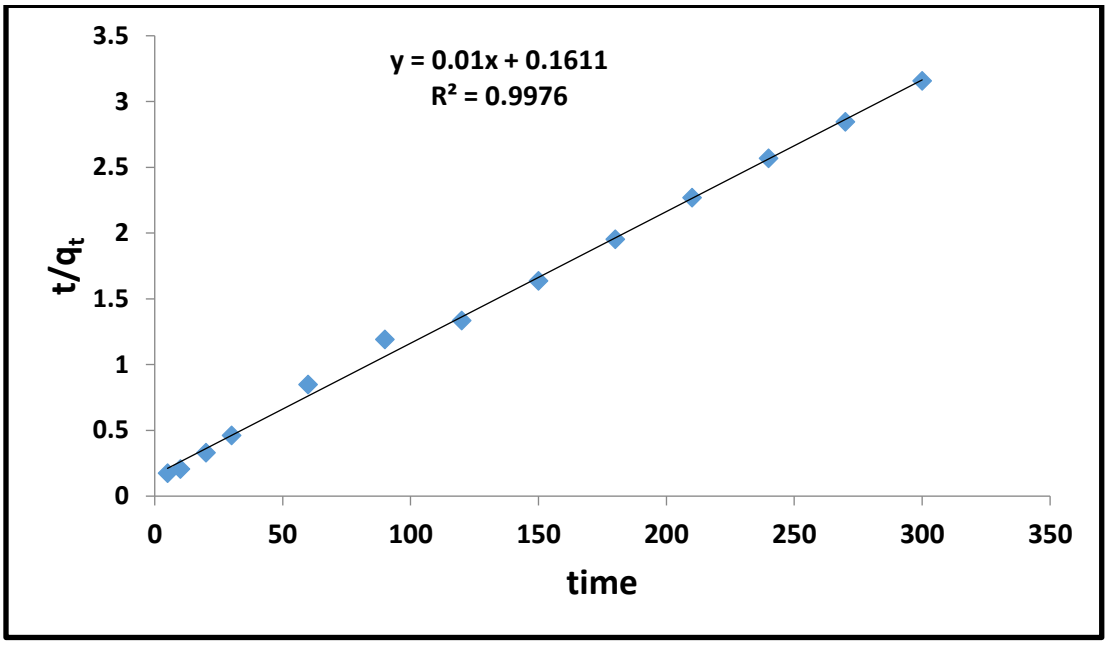

Fig. S10: Plot of the Pseudo-Second-Order Kinetics of the Ciprofloxacin Adsorption over $[Cu(Glu)_2(H_2O)].H_2O$ at 20 ppm.

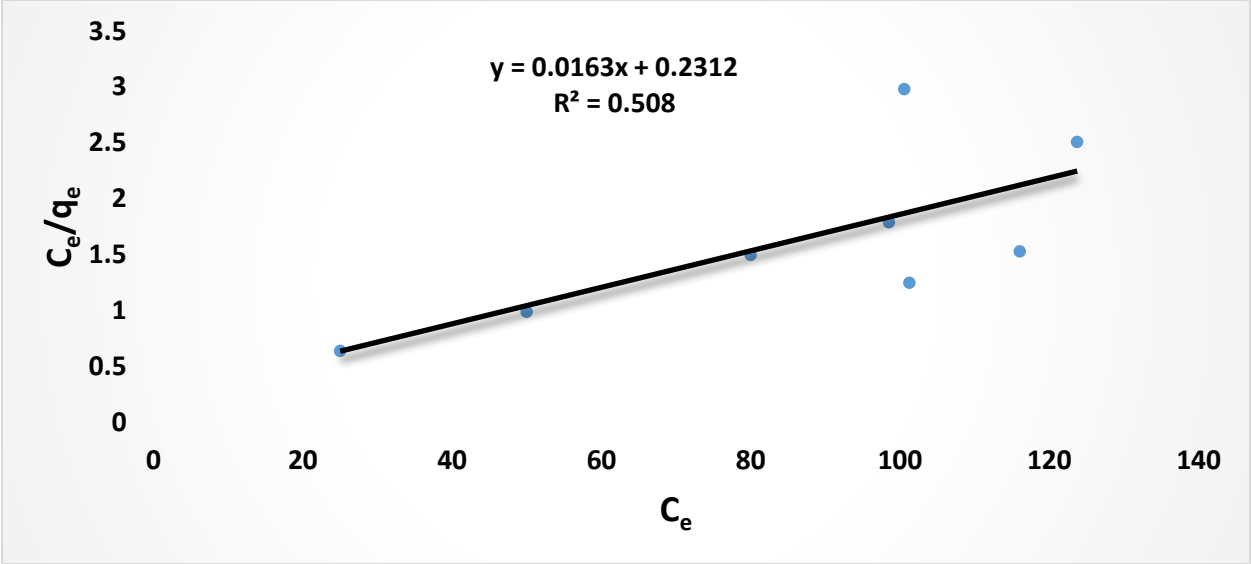

Fig. S11: Langmuir Isotherm Plot of the Ciprofloxacin Adsorption over $[Cu(Glu)_2(H_2O)].H_2O$.

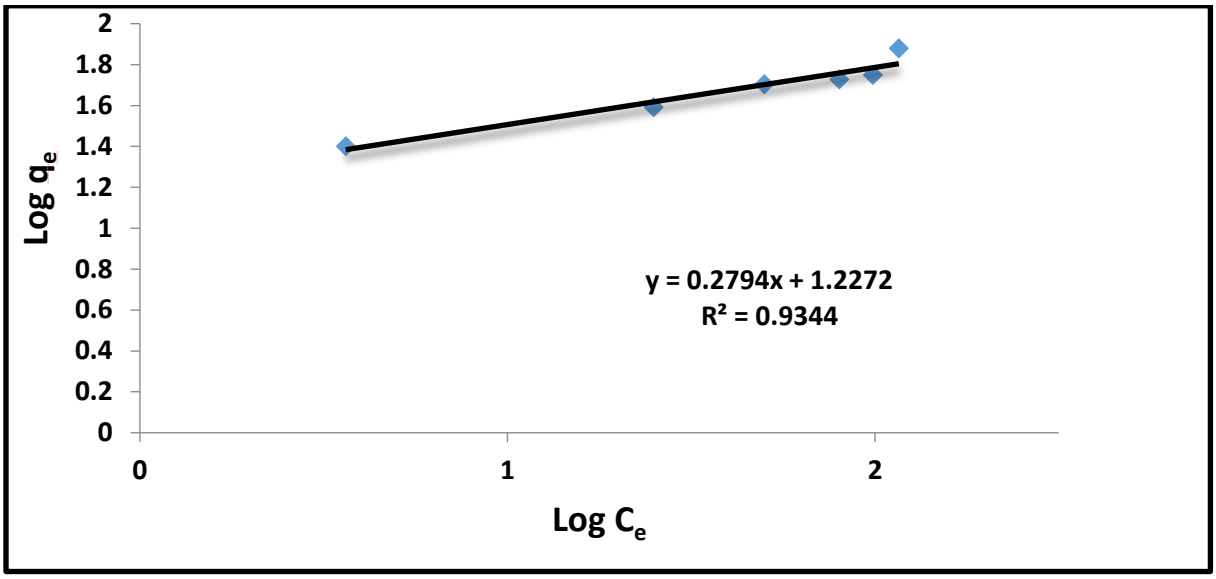

Fig. S12: Freundlich Isotherm Plot of the Ciprofloxacin Adsorption over $[Cu(Glu)_2(H_2O)].H_2O$

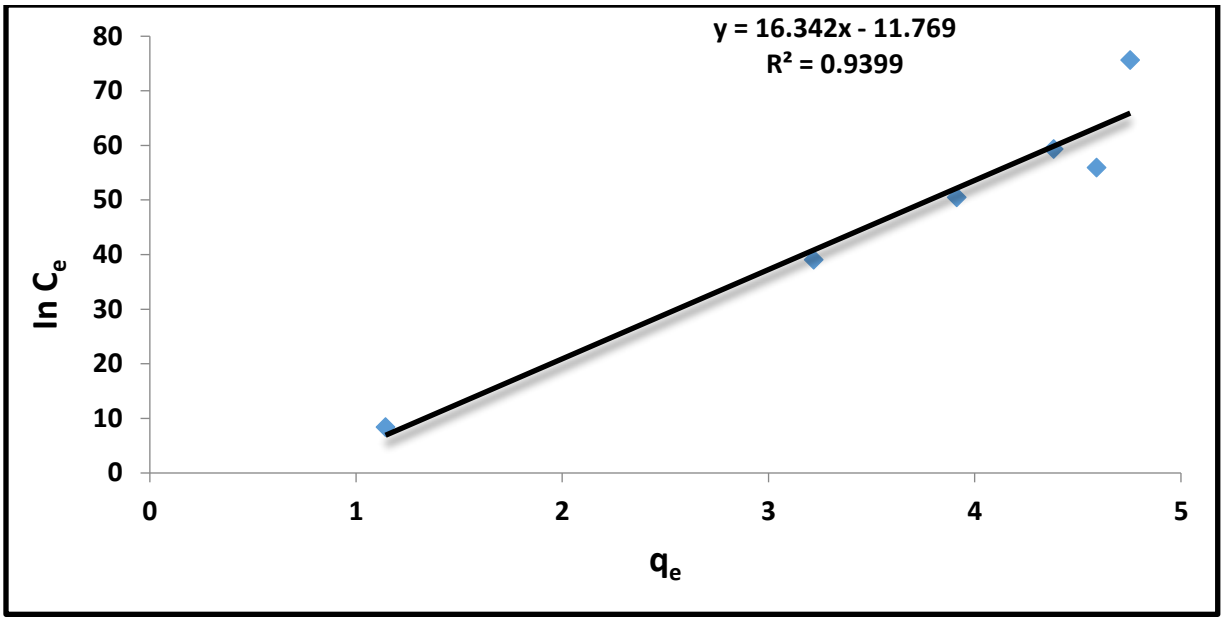

Fig. S13: Temkin Isotherm Plot of the Ciprofloxacin Adsorption over $[Cu(Glu)_2(H_2O)].H_2O$

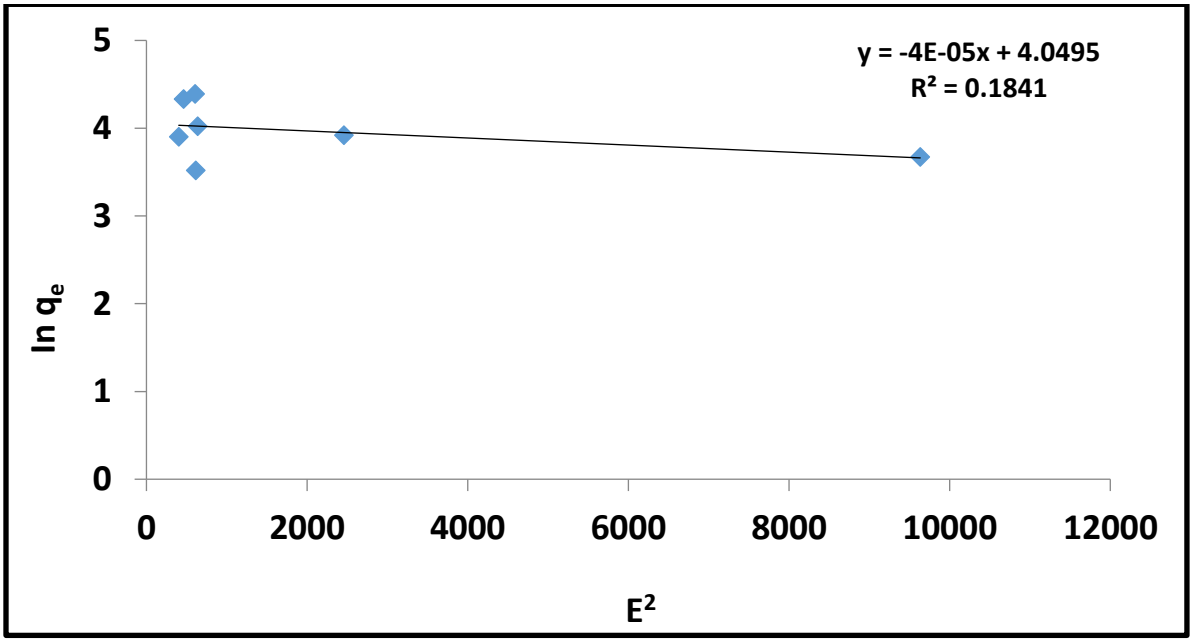

Fig. S14: Dubinin–Radushkevich Isotherm Plot of the Ciprofloxacin Adsorption over $[Cu(Glu)_2(H_2O)].H_2O$