

Adsorption Characteristics of Cetirizine on Graphene Oxide

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BET Isotherm:

Table. S1. BET conditions for GO.

Sample Mass:	0.0900 g	Analysis Adsorptive:	N ₂
Cold Free Space:	32.4272 cm ³	Analysis Bath Temp.:	77.300 K
Low Pressure Dose:	None	Thermal Correction:	No
Automatic Degas:	No	Warm Free Space:	11.1070 cm ³ Measured
Sample Density:	1.000 g/cm ³	Equilibration Interval:	10 s

Effect of pH on Zeta potential:

The effect of pH on zeta potential was investigated before and after adsorption of cetirizine on GO. In acidic pH and basic pH, zeta potential of cetirizine was found to be 0.784 mV and -29.3 mV. The shift from positive side to negative side of zeta potential is possible due to presence of positively charged tertiary quaternary amine and neutralisation of dissociate protons of carboxylic acid of cetirizine by OH⁻ ion in basic medium. Upon addition of GO, the zeta potential shifts to more negative side due to negatively charged functional groups like carboxylic acid and hydroxylic in GO. The negative charge of GO possibly attracts positively charged groups of cetirizine in acidic medium leading to the enhancement in the adsorption.

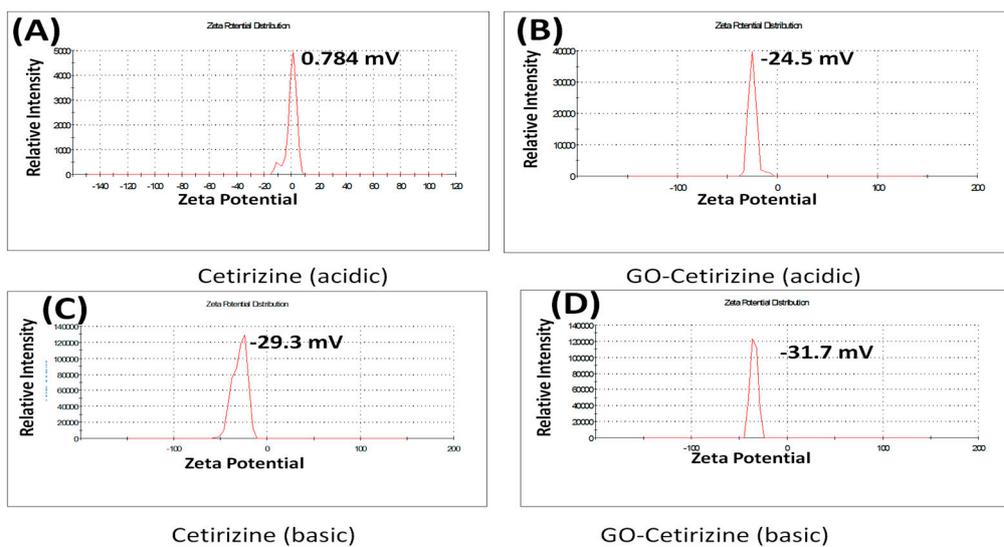


Figure. S1.(A) Zeta potential of Cetirizine in acidic pH, (B) Zeta potential of GO-Cetirizine in acidic pH, (C) Zeta potential of Cetirizine in basic pH and (D) Zeta potential of GO-Cetirizine in basic pH.

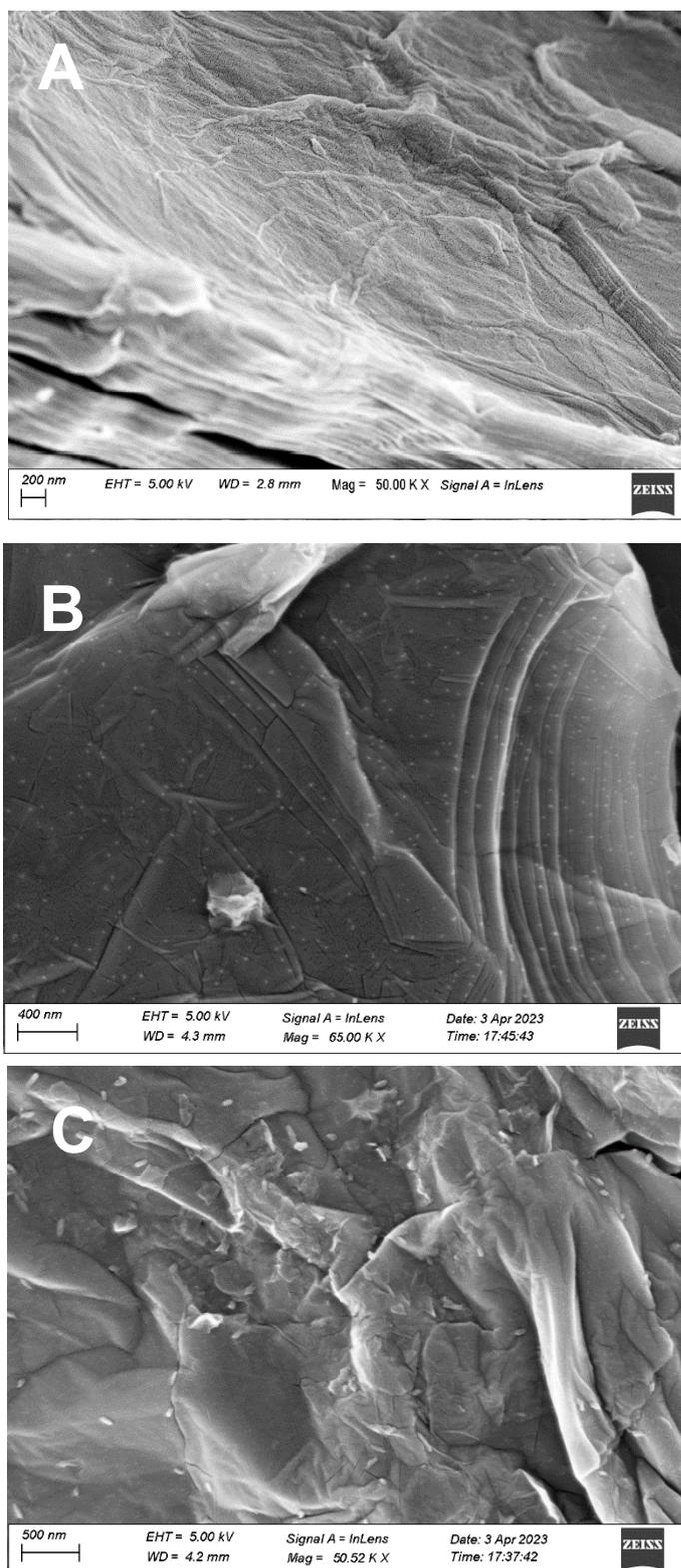


Figure. S2.(A) Representative Scanning Electron Microscope (SEM) of as synthesized GO (B) Representative Scanning Electron Microscope (SEM) of GO after using four times in adsorption of Cetirizine and subsequent desorption with H₂O₂ (C) Representative Scanning Electron Microscope (SEM) of GO after using four times in adsorption of Cetirizine and subsequent desorption with DMSO.