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Supporting Information

for

Graphene oxide–chloroquine conjugate induces DNA damage in A549 lung cancer cells through autophagy modulation

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Additional figures (S1–S3) and table (S1)

Supplementary Figure 1:

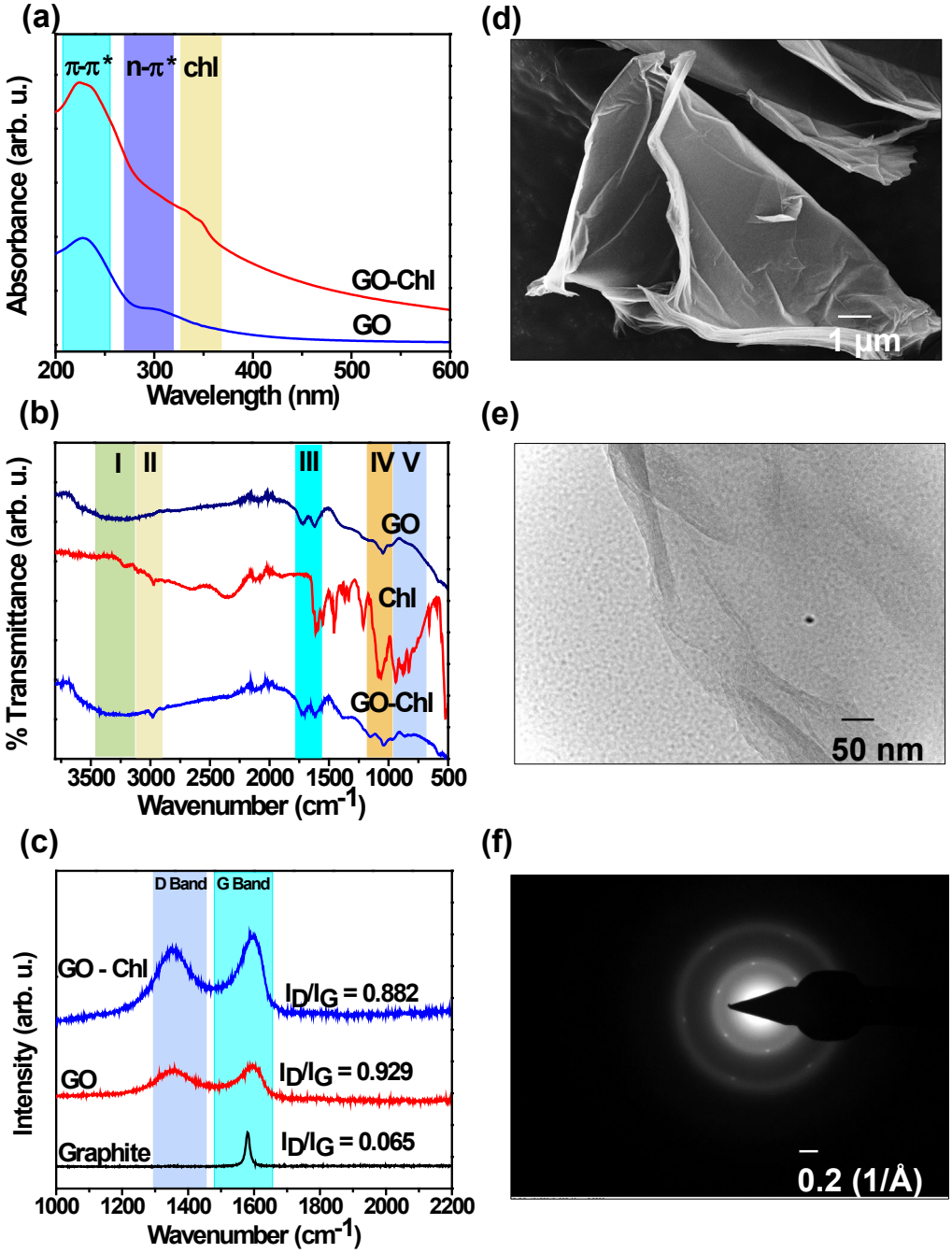

Figure S1: Optical, functional, structural, and morphological analysis of GO and GO–Chl nanoconjugate: (a) UV–vis spectra of GO and GO–Chl. (b) Fourier-transform infrared spectra of GO, Chl, and GO–Chl. (c) Raman spectra of graphite, GO, and GO–Chl. (d) Field-emission scanning electron microscopy photomicrograph. (e) High-resolution transmission electron microscopy image of GO and (f) selected area of the electron diffraction pattern of GO.

Supplementary Figure 2:

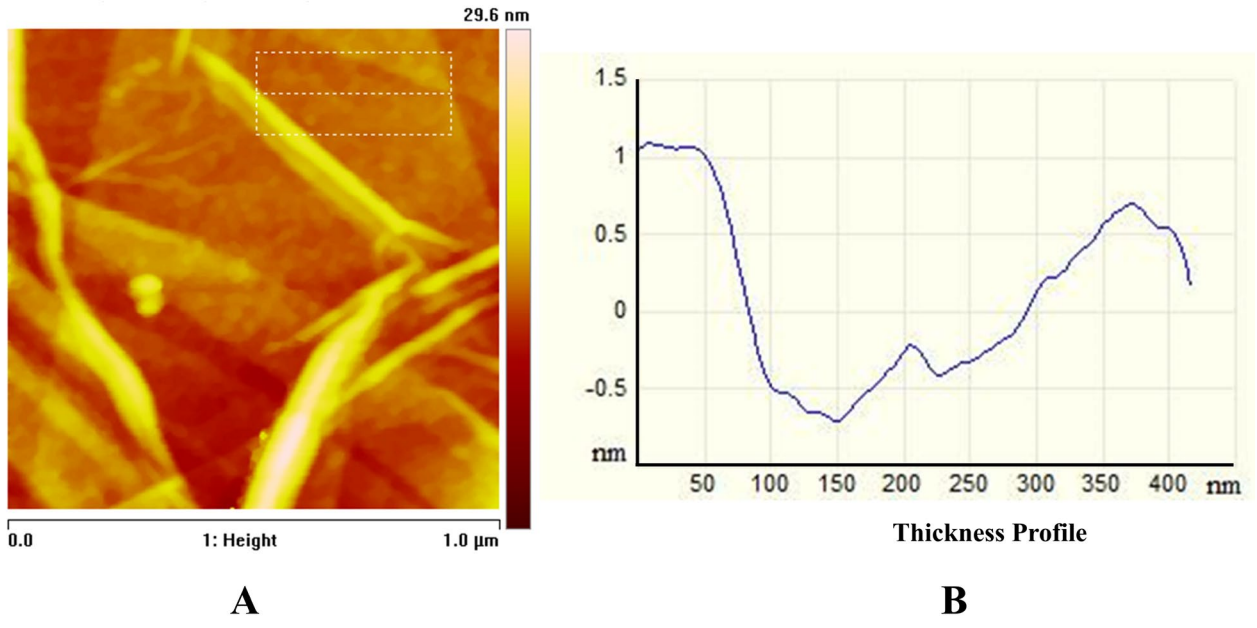

Figure S2: A) Atomic force microscopy based topographical analysis of GO nanosheets casted on a silicon wafer substrate (scale 0–1 µm). B) Height and thickness profile of GO nanosheets obtained through AFM.

Supplementary Figure 3:

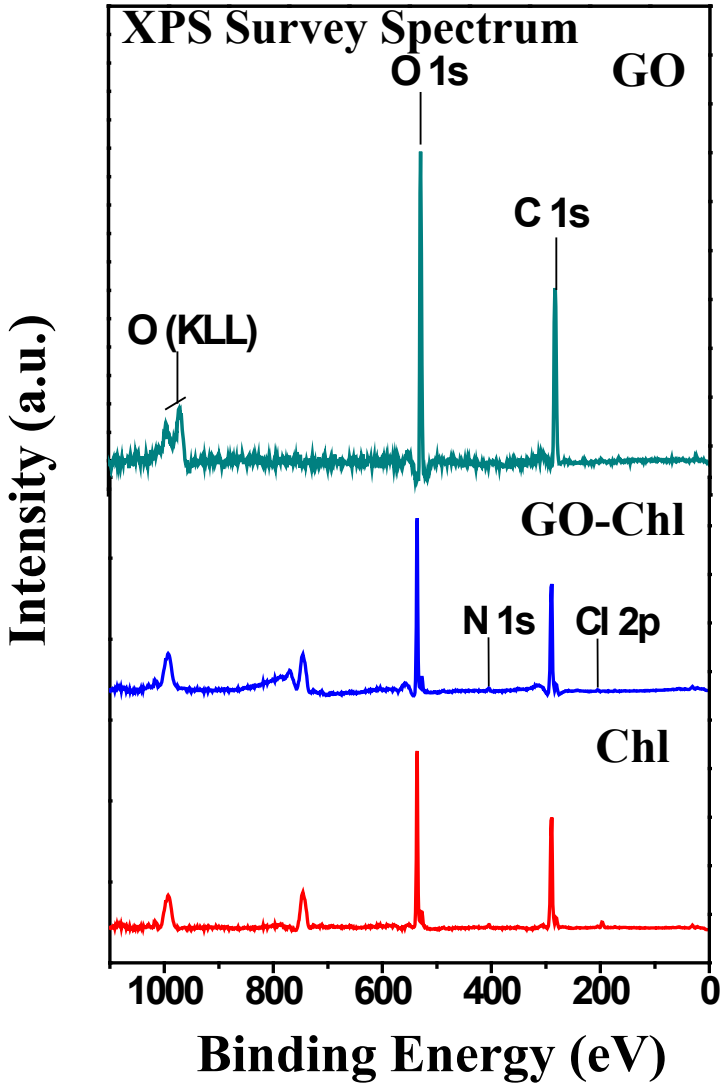

Figure S3: XPS survey spectra of GO, GO–Chl, and Chl.

Table S1: Summary of fitting parameters for the C 1s core level spectra for GO, Chl, and GO–Chl samples. Uncertainty in determining the binding energy (B.E.) position and full width at half maximum (FWHM) is estimated to be ±0.05 eV. The uncertainty in determining the relative percentage is estimated to be ±5 % of the base value.

	GO			Chl			GO-Chl		
Peak	**B.E. (eV)**	**FWHM (eV)**	**Relative %**	**B.E. (eV)**	**FWHM (eV)**	**Relative %**	**B.E. (eV)**	**FWHM (eV)**	**Relative %**
C–C				284.6	1.65	11.93	284.6	1.63	13.85
C=C	284.4	1.62	7.27						
C–N				285.6	1.63	13.64	285.6	1.63	38.13
C–OH	285.6	1.63	20.09						
C–Cl				286.4	1.41	42.69	286.4	1.38	11.88
C–O	286.6	1.38	20.83						
C=N				287.6	1.41	31.73	287.6	1.43	26.79
C=O	287.7	1.48	21.54						
COOH	288.8	1.73	30.25				288.9	1.88	9.35