

## Supporting Information

**Oxidant mediated one-step complete conversion of multiwalled carbon nanotubes to graphene quantum dots and their bioactivity against mammalian and bacterial cells**

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## Tables

**Table S1. The Raman mode positions for MWCNTs and GQDs.**

<b>Samples</b>	<b>D-band (cm<sup>-1</sup>)</b>	<b>G-band (cm<sup>-1</sup>)</b>
MWCNTs	1320	1605, 1575 (tan)
GQDs	1353	1621, 1582 (tan)

\* tan = tangential G-band

**Table S2. Minimum inhibitory concentration (MIC) of GQDs against bacterial cultures.**

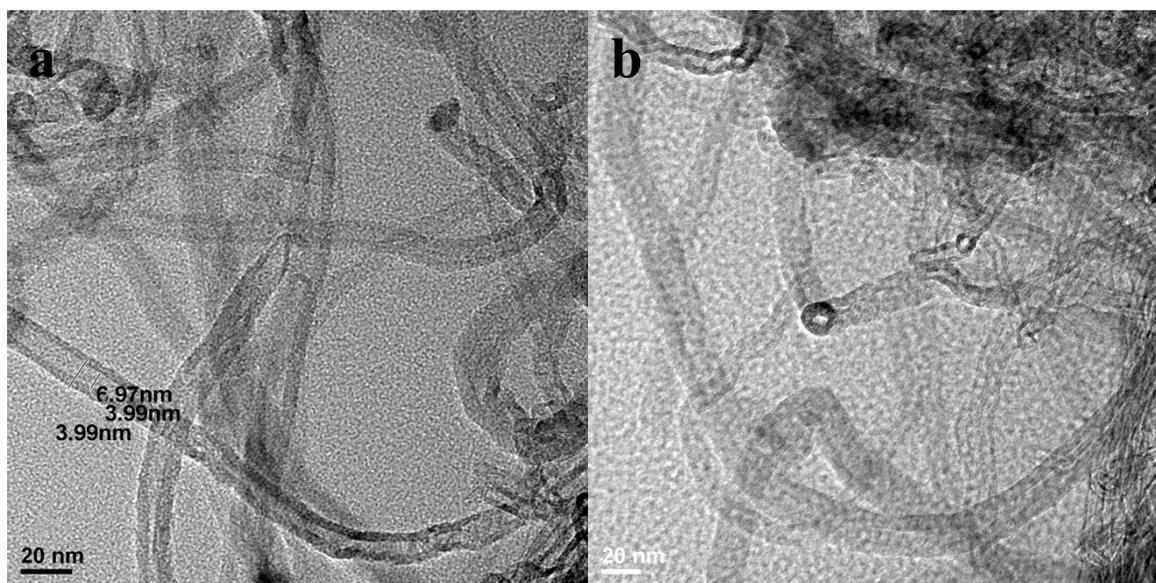
<b>Name of the microorganism</b>	<b>Minimum inhibitory concentration (µg mL<sup>-1</sup>)</b>
<i>E. coli</i> NCIM 2931	256
<i>P. aeruginosa</i> NCIM 5029	512
<i>S. aureus</i> NCIM 5021	512
<i>B. subtilis</i> NCIM 2063	256

Note: All experiments were performed in triplicates and standard deviations were negligible.

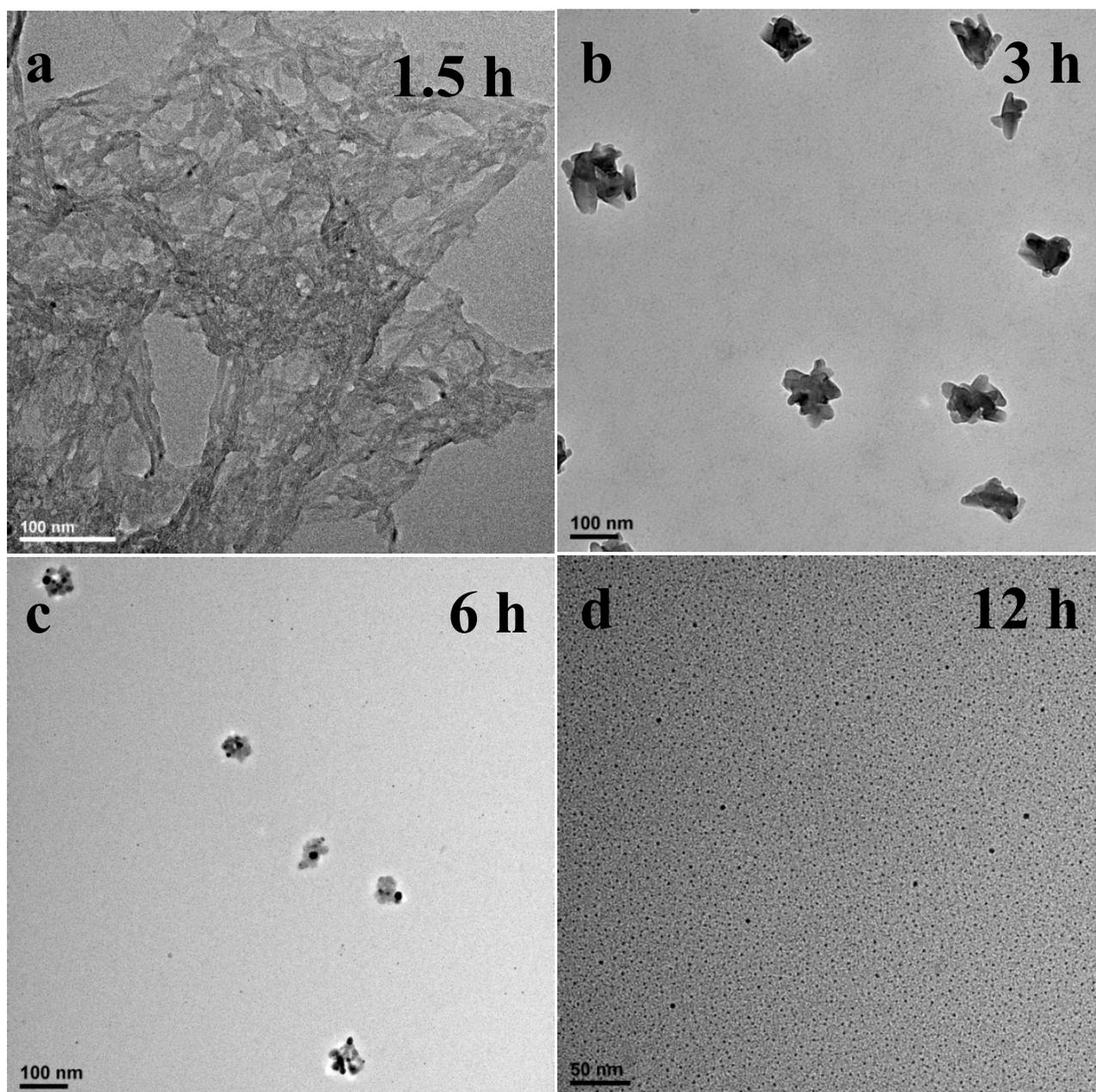
**Table S3. Growth rate of *E. coli* at different concentration of GQDs.**

Concentration of GQDs ( $\mu\text{g mL}^{-1}$ )	Growth rate ( $\text{h}^{-1}$ )
0	0.055
100	0.057
150	0.033
200	0.015
250	0
300	0
350	0

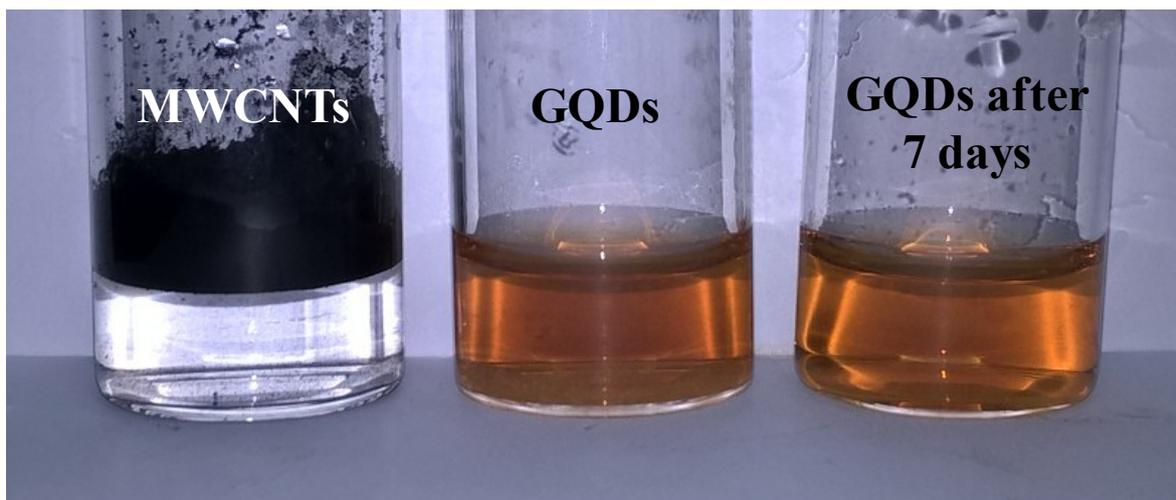
**Abbreviations:** GQDs, graphene quantum dots.



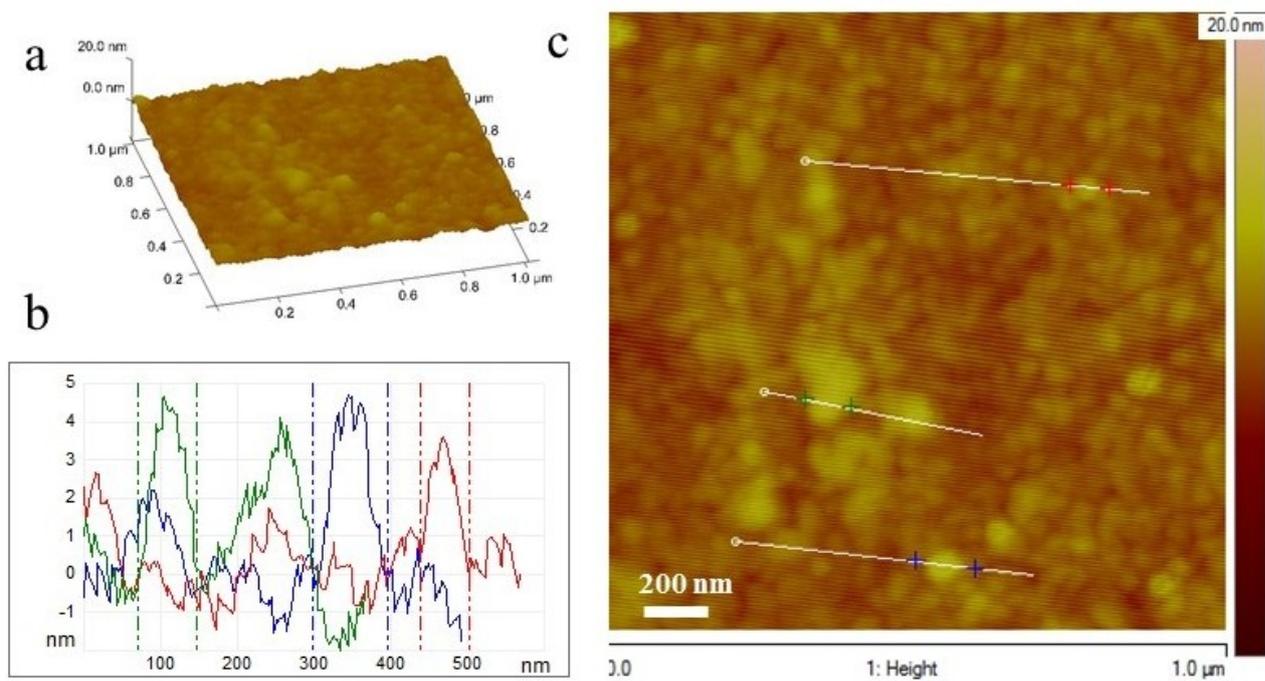
**Figure S1.** HRTEM images of MWCNTs before hydrothermal treatment depicting the wall thickness.



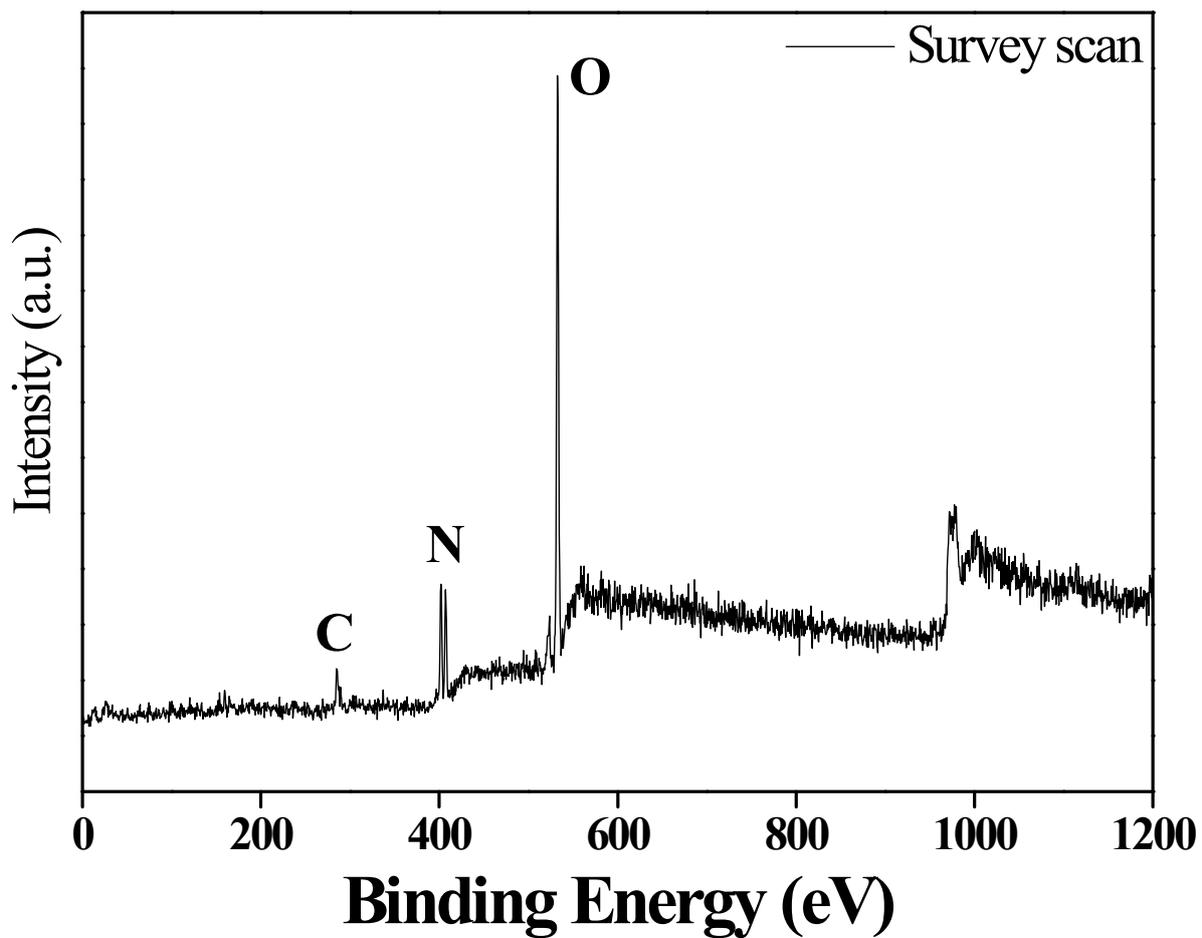
**Figure S2.** HRTEM images of sodium bismuthate treated MWCNTs after different time interval (a) 1.5 h, (b) 3 h, (c) 6 h, and (d) 12 h.



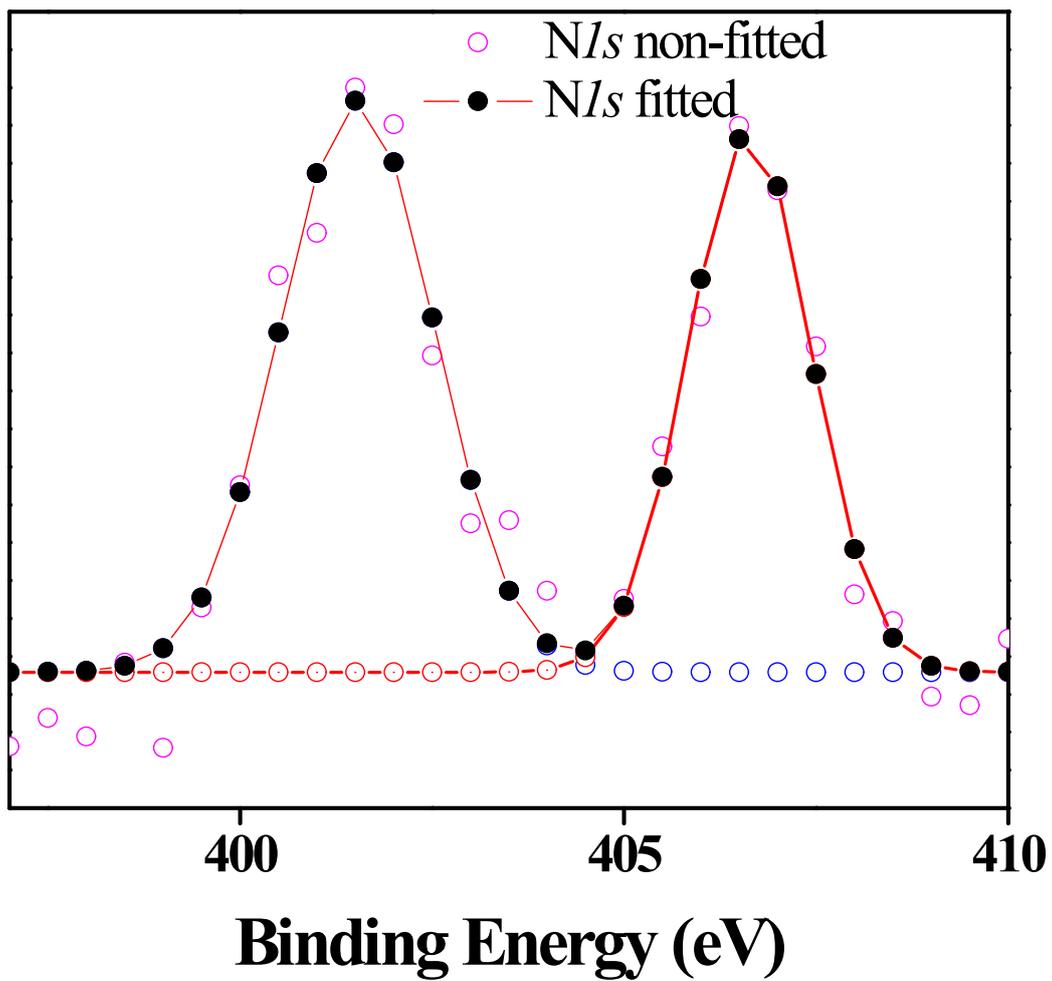
**Figure S3.** Aqueous suspension stability of as-synthesized GQDs. Photographs of MWCNTs, GQDs (before and after 7 days).



**Figure S4.** AFM images of as-synthesized GQDs (a) 3D image, (b) 2D image, and (c) section analysis.



**Figure S5.** XPS survey scan of as-synthesized GQDs showing the presence of C, N, and O atoms without any Bi impurity.



**Figure S6.** XPS spectrum of nitrogen  $1s$  for as-synthesized GQDs.

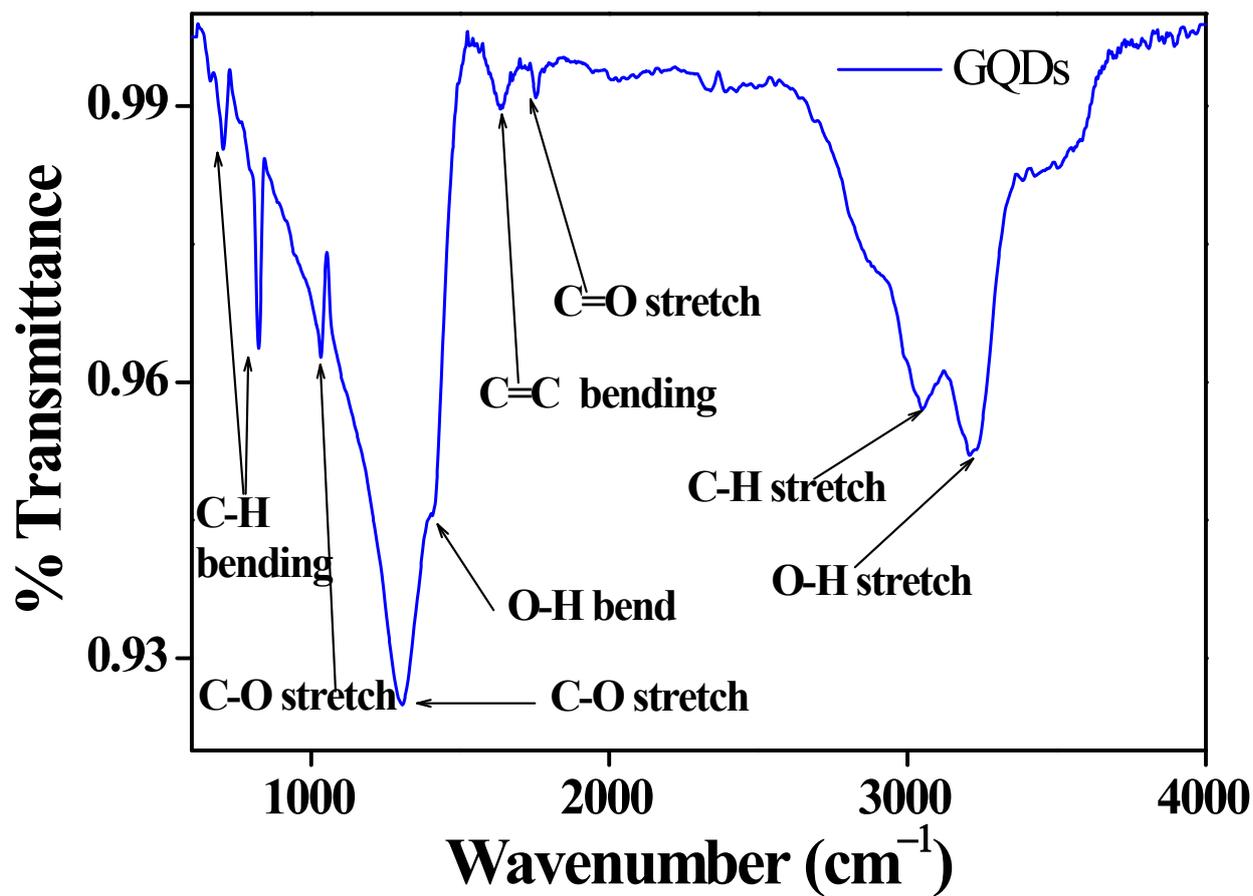
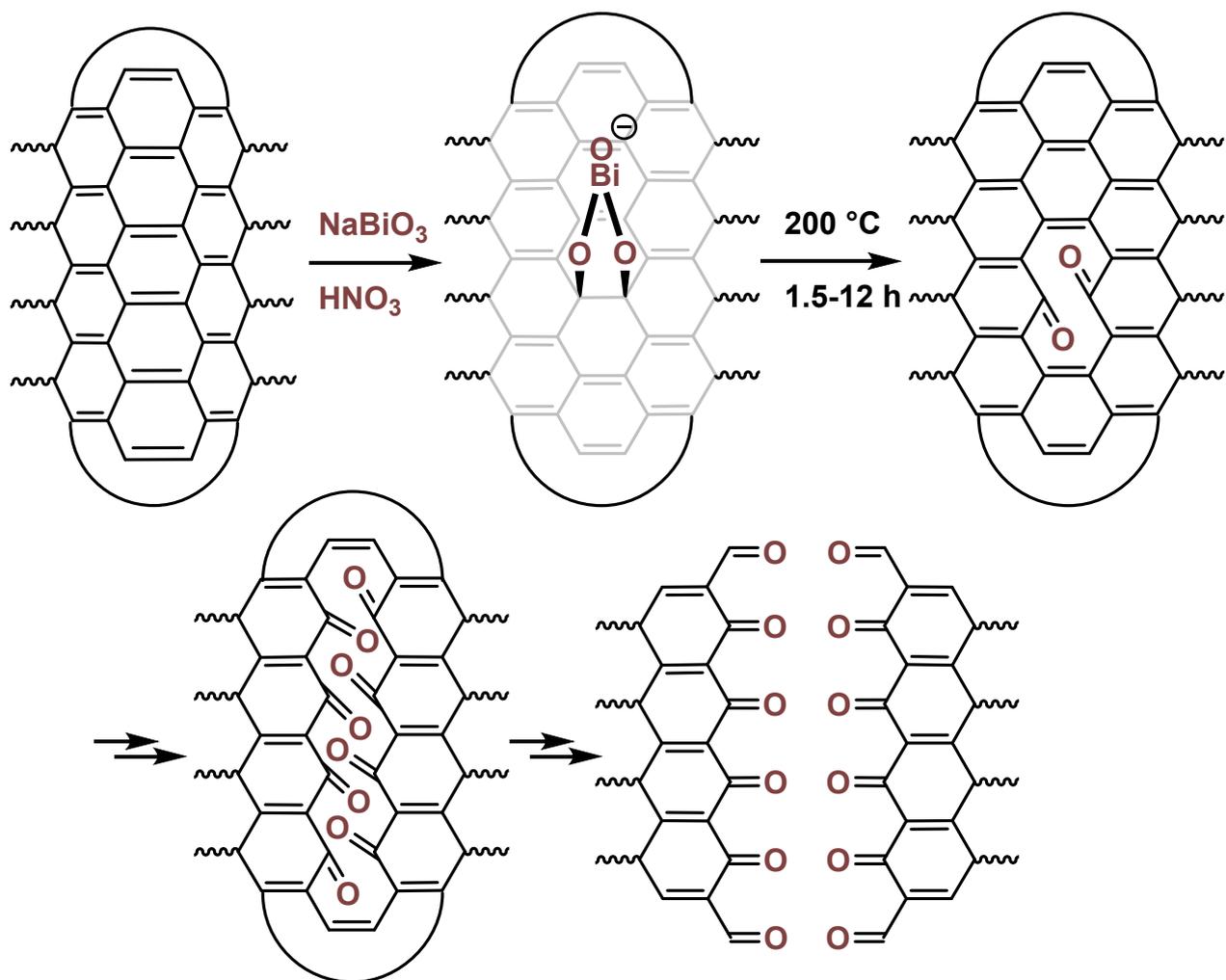
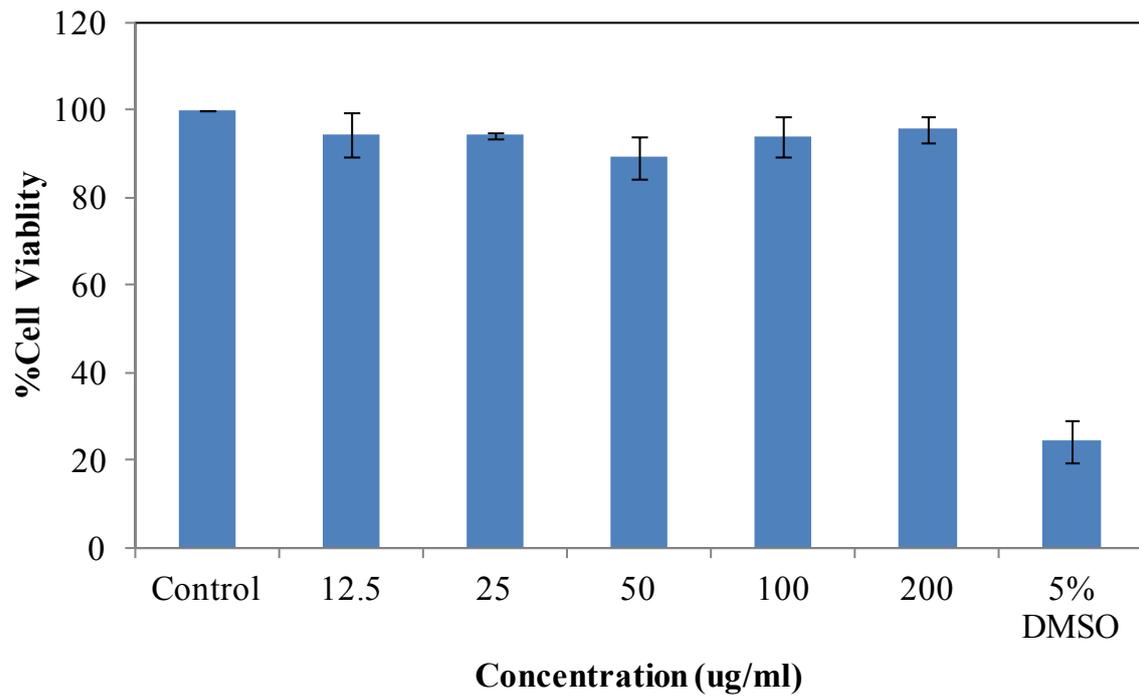


Figure S7. Fourier transformed infrared spectrum of as-synthesized GQDs.



**Figure S8.** Proposed mechanism behind the oxidant (sodium bismuthate) mediated cutting of MWCNTs.



**Figure S9.** Cytotoxicity of GQDs for HEK 293T cells using MTT assay. The results show that the GQDs were non-cytotoxic up to the concentration of  $\sim 200 \mu\text{g/mL}$ .