Corrigendum

Corrigendum to “Toxicity of Graphene Shells, Graphene Oxide, and Graphene Oxide Paper Evaluated with Escherichia coli Biotests”

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The paper titled “Toxicity of Graphene Shells, Graphene Oxide, and Graphene Oxide Paper Evaluated with Escherichia coli Biotests” [1] contains textual errors we wish to correct. The corrections are as follows.

In Section “2.1. Graphene-Family Nanomaterials” the sentence “Aqueous suspensions of GS and GO (from 10^{-3} to 2 \times 10^{-5} mg/L) . . .” has numerical errors. The correct sentence is as follows: “. . . (from 1000 to 20 mg/L). . .”

In Section “2.6.Efflux of Intracellular DNA Content” the sentence “The plasmid-containing Es. coli K12 TGI lac::lux strain was cultured in mid-exponential growth phase with ampicillin and then separated from its cultivation medium and incubated with aqueous GO suspensions at concentrations of 1.25 \times 10^{-8}, 5 \times 10^{-8}, and 2 \times 10^{-5} mg/L for 60 min, . . .” has numerical errors. The correct sentence is as follows: “. . . at concentrations of 125, 500, and 2000 mg/L. . .”

In Section “2.7.Zeta Potential Measurement” the sentence “A bacterial suspension (3.7 \times 10^{6} CFU/mL) was mixed with serially diluted GO aqueous suspensions to a final concentration from 3.1 \times 10^{-5} to 5 \times 10^{-4} mg/L” has numerical errors. The correct sentence is as follows: “. . . to a final concentration from 31.25 to 500 mg/L.”

In Section “3.1.1. GFN Toxicity Assessment Using a Bacterial Bioluminescence Inhibition Assay” the sentence “In the current system containing 3.7 \times 10^{6} CFU/mL cells, GO toxicity was characterized by EC50 values of 1.13 \pm 0.05 \times 10^{-4}, 1.04 \pm 0.03 \times 10^{-4}, and 7.92 \pm 0.24 \times 10^{-5} mg/L . . .” has numerical errors. The correct sentence is as follows: “. . . by EC50 values of 113.1 \pm 4.52, 104.2 \pm 3.12, and 79.2 \pm 2.37 mg/L. . .”

The sentence “At the 60th min of measurement these values varied from 1.13 \pm 0.05 \times 10^{-4} to 2.55 \pm 0.10 \times 10^{-5} mg/L . . .” has numerical errors. The correct sentence is as follows: “. . . values varied from 113.1 \pm 4.52 to 25.5 \pm 1.01 mg/L . . .”

In Figure 4 legend designations have numerical errors: “1: 10^{-3} mg/L; 2: 5 \times 10^{-4} mg/L; 3: 2.5 \times 10^{-4} mg/L; 4: 1.25 \times 10^{-4} mg/L; 5: 6.25 \times 10^{-5} mg/L; 6: 3.13 \times 10^{-5} mg/L; 7: 1.56 \times 10^{-5} mg/L; 8: 7.81 \times 10^{-6} mg/L; 9: 3.91 \times 10^{-6} mg/L; C: control; wp: white paper, bp: black paper, GO-P: graphene oxide paper.”

The correct designations are as follows: “1: 1000 mg/L; 2: 500 mg/L; 3: 250 mg/L; 4: 125 mg/L; 5: 62.5 mg/L; 6: 31.25 mg/L; 7: 15.62 mg/L; 8: 7.81 mg/L; 9: 3.91 mg/L; C: control; wp: white paper, bp: black paper, GO-P: graphene oxide paper.”

The x-axis values of GO in Figure 5 should be corrected to the following: from 0 to 250 mg/L.

In Table 2 the values of EC50 (mg/L content) should be replaced by those shown in the corrected table.

In Section “3.1.2. GFN Bioactivity in a Fluorescent Cell Assay” the sentence “In contrast, bacterial cells treated with GO suspensions became red-fluorescent after 60 min in
Table 2: Dose-dependent and time-dependent GO aqueous suspensions toxicity in bacterial bioluminescence inhibition assay characterized by EC50 value (mg/L content) at varying bacterial cell number in the sample.

<table>
<thead>
<tr>
<th>E. coli K12 TG1 lac::lux, CFU per 1 mL</th>
<th>Time measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>60 min</td>
</tr>
<tr>
<td>3.70 × 10^8</td>
<td>113.1 ± 4.52</td>
</tr>
<tr>
<td>1.85 × 10^8</td>
<td>88.1 ± 2.64</td>
</tr>
<tr>
<td>9.25 × 10^7</td>
<td>55.7 ± 2.22</td>
</tr>
<tr>
<td>4.62 × 10^7</td>
<td>25.5 ± 1.01</td>
</tr>
</tbody>
</table>

In Figure 6 legend, the E. coli K12 TG1 cells were treated with graphene shells suspensions at 1000 mg/L instead of 10^-3 mg/L and treated with graphene oxide suspension at 125 mg/L instead of 1.25 × 10^-4 mg/L.

In Section “3.2.1 GO Validation as a Potential Oxidative Stress Inducer in Lux-Biotests” the sentence “The 1.2–1.5-fold light intensity growth only has been recorded at subtoxic GO concentrations (1.95 × 10^-6–10^-3 mg/L)” has numerical errors. The correct sentence is as follows: “The 1.2–1.5-fold light intensity growth only has been recorded at subtoxic GO concentrations (1.95–1000 mg/L).”

The sentence “In turn, GO concentrations of 2 × 10^-3 mg/L or more were toxic…” should be corrected to the following: “In turn, GO concentrations of 2000 mg/L or more were toxic…”

In Section “3.2.2 Intracellular DNA Efflux Measurement in GO-Treated Escherichia coli Cells” the sentence “In turn, DNA levels in supernatants of cells exposed to GO at concentrations of 1.25 × 10^-4–2 × 10^-3 mg/L…” should be corrected to the following: “In turn, DNA levels in supernatants of cells exposed to GO at concentrations of 1.25 × 10^-4–2 × 10^-3 mg/L…”

In Section “3.2.3 Effect of GO Treatment on Zeta Potential Properties of Escherichia coli Cells” the sentence “Finally, the GO concentration required for complete zeta potential neutralization was 2.50 × 10^-4 mg/L, whereas concentrations in the range of 3.13 × 10^-5–1.25 × 10^-4 mg/L…” has numerical errors. The correct values are “250 mg/L…” and “31.25–125 mg/L…” respectively.

The x-axis values of GO in Figure 7 should be corrected to the following: from 0 to 500 mg/L.

These corrections do not influence the results, discussion, or conclusion of this work.

References

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