**SUPPLEMENTARY MATERIAL**

**Phytosynthesis of silver oxide nanoparticles using *Mauritia flexuosa* fruit extract, characterization, and biological activities assessment**

**Johana Zúñiga-Miranda1, David Vaca-Vega1, Karla Vizuete2, Saskya E. Carrera-Pacheco1, Rebeca Gonzalez-Pastor1, Jorge Heredia-Moya1, Arianna Mayorga-Ramos1, Carlos Barba-Ostria4, 5, Elena Coyago-Cruz6, Alexis Debut2,3 and Linda P. Guamán1,\***

1 Universidad UTE, Facultad de Ciencias de la Salud Eugenio Espejo, Centro de Investigación Biomédica (CENBIO), , Quito 170527, Ecuador

2 Universidad de Las Fuerzas Armadas ESPE, Centro de Nanociencia y Nanotecnología , Sangolquí 171103, Ecuador

3 Escuela de Medicina, Colegio de Ciencias de la Salud Quito, Universidad San Francisco de Quito USFQ, Quito, Ecuador.

4 Instituto de Microbiología, Universidad San Francisco de Quito USFQ, Quito, Ecuador

5  Universidad Politécnica Salesian, aCarrera de Ingeniería en Biotecnología, Quito, Ecuador

6 Universidad de las Fuerzas Armadas ESPE, Departamento de Ciencias de la Vida y Agricultura, Sangolquí, 171103, Ecuador

\* Correspondence: linda.guaman@ute.edu.ec

**Supp material Table A.** Percentage of Biofilm Inhibition Activity of Mf-AgONPs

| **Mf- AgNPs** | ***Staphylococcus aureus***  **ATCC 25923** | | ***Listeria monocytogenes***  **ATCC 13932** | | ***Pseudomonas aeruginosa***  **ATCC 9027** | | ***Burkholderia cepacia***  **ATCC 25416** | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ug/mL** | **Mean** | **SD** | **Mean** | **SD** | **Mean** | **SD** | **Mean** | **SD** |
| **40** | 72% | 4% | 46% | 6% | 91% | 10% | 89% | 10% |
| **20** | 71% | 5% | 6% | 10% | 75% | 16% | 87% | 12% |
| **10** | 44% | 9% | 7% | 7% | N-Inh | - | 42% | 12% |
| **5** | 36% | 14% | 14% | 12% | 1% | 1% | 29% | 12% |
| **2.5** | 33% | 12% | 8% | 10% | N-Inh | - | 25% | 14% |

N-Inh: No biofilm inhibition recorded at the tested concentration

**Supp material Table B.** Antitumor activity of biosynthesized silver oxide nanoparticles and extract. Mean and standard deviation (SD) are presented. This data was used to generate dose-response curves and calculate the IC50 values.

**Mf-AgONPs**

| **ug/mL** | **HeLa** | | **HCT116** | | **THJ29T** | | **MDA-MB-231** | | **NIH3T3** | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Mean | SD | Mean | SD | Mean | SD | Mean | SD | Mean | SD |
| **0** | 100 | 0 | 100 | 0 | 100 | 0 | 100 | 0 | 100 | 0 |
| **0.39** | 98.283 |  | 98.3 |  | 82.835 |  |  |  | 82.777 |  |
| **0.78** | 85.274 | 11.502 | 99.847 | 1.078 | 85.905 | 9.274 | 88.299 | 1.255 | 84.546 | 12.714 |
| **1.56** | 78.758 | 9.156 | 95.749 | 7.447 | 84.855 | 8.247 | 79.928 | 1.022 | 78.625 | 10.303 |
| **3.13** | 78.922 | 10.78 | 81.853 | 2.713 | 79.942 | 3.426 | 66.741 | 25.375 | 70.548 | 19.279 |
| **3.91** |  |  | 81 |  |  |  |  |  |  |  |
| **6.25** | 19.536 | 2.876 | 23.42 | 1.421 | 51.863 | 19.93 | 47.886 | 13.74 | 35.26 | 4.43 |
| **7.81** |  |  | 32 |  |  |  |  |  |  |  |
| **12.5** | 19.195 | 3.578 | 26.013 | 8.079 | 33.039 | 12.38 | 41.089 | 2.168 | 30.214 | 3.509 |
| **15.63** |  |  | 34 |  |  |  |  |  |  |  |
| **25** | 20.188 | 3.547 | 23.833 | 2.157 | 30.199 | 6.996 | 39.197 | 4.56 | 32.922 | 4.424 |
| **31.25** |  |  | 36 |  |  |  |  |  |  |  |
| **50** | 18.727 | 3.121 | 24.566 | 2.253 | 31.203 | 5.846 | 39.066 | 9.974 | 37.722 | 7.195 |
| **100** | 22.623 |  | 27.609 |  | 36.757 |  |  |  |  |  |

**Mf-extract**

| **mg/mL** | **HeLa** | | **HCT116** | | **THJ29T** | | **MDA-MB-231** | | **NIH3T3** | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Mean | SD | Mean | SD | Mean | SD | Mean | SD | Mean | SD |
| **0** | 100 | 0 | 100 | 0 | 100 | 0 | 100 | 0 | 100 | 0 |
| **0.08** | 89.825 |  |  |  |  |  |  |  |  |  |
| **0.16** | 77.095 | 10.113 | 99.393 | 3.371 | 93.844 | 6.067 | 91.508 | 2.63 | 83.073 | 11.92 |
| **0.31** | 71.002 | 9.601 | 92.512 | 5.95 | 88.435 | 4.21 | 83.417 | 1.797 | 76.762 | 7.982 |
| **0.63** | 69.65 | 9.382 | 94.299 | 7.793 | 93.465 | 11.482 | 83.774 | 5.928 | 75.02 | 8.869 |
| **1.25** | 70.629 | 10.733 | 87.107 | 1.16 | 88.818 | 8.813 | 81.346 | 7.464 | 72.416 | 6.034 |
| **2.5** | 70.179 | 8.272 | 86.016 | 8.183 | 80.543 | 4.184 | 74.949 | 11.981 | 66.782 | 7.741 |
| **5** | 48.497 | 15.416 | 58.918 | 15.442 | 63.728 | 13.394 | 65.761 | 13.224 | 62.87 | 11.015 |
| **10** | 18.925 | 2.278 | 25.89 | 7.562 | 27.134 | 4.875 | 41.835 | 3.696 | 43.431 | 7.607 |