### Supplementary Information

### Ultra-fast sustainable synthesis, optimization and characterization of guava phenolic extract functionalized nanosilver with enhanced biomimetic attributes

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**Supplementary figure and table captions**

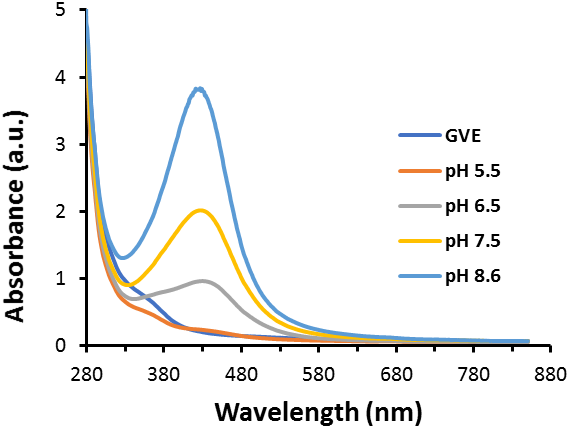
**Supplementary Figure S1**. Effect of pH in guava mediated synthesis of biogenic nanosilver at room temperature. pH of the extract was quickly adjusted prior to adding to the aqueous silver nitrate solution while stirring. UV-visible spectra and corresponding photographic images were collected for the as-prepared GVE-SNP solution synthesized at various pH conditions.

**Supplementary Figure S2**. High resolution TEM image of GVE-SNP

**Supplementary Figure S3**. Matching of the main XRD peaks (*2θ*) of GVE-SNP (above) with those of silver and silver chloride (below).

**Supplementary Figure S4**. Antimicrobial inhibition zones of GVE against *S. aureus* (A) and *S. epidermidis* (B). The control contains only the solvent.

**Supplementary Table S1:** Thermogravimetric (TGA) data of GVE-SNP



8.6

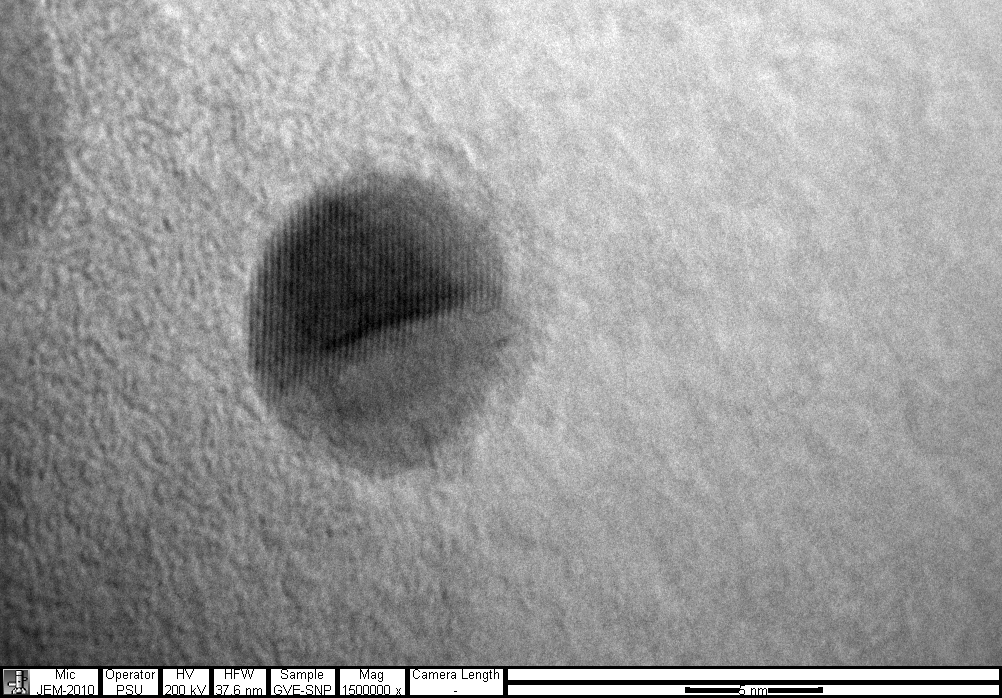
7.5

6.5

5.5

GVE

**Supplementary Figure S1**



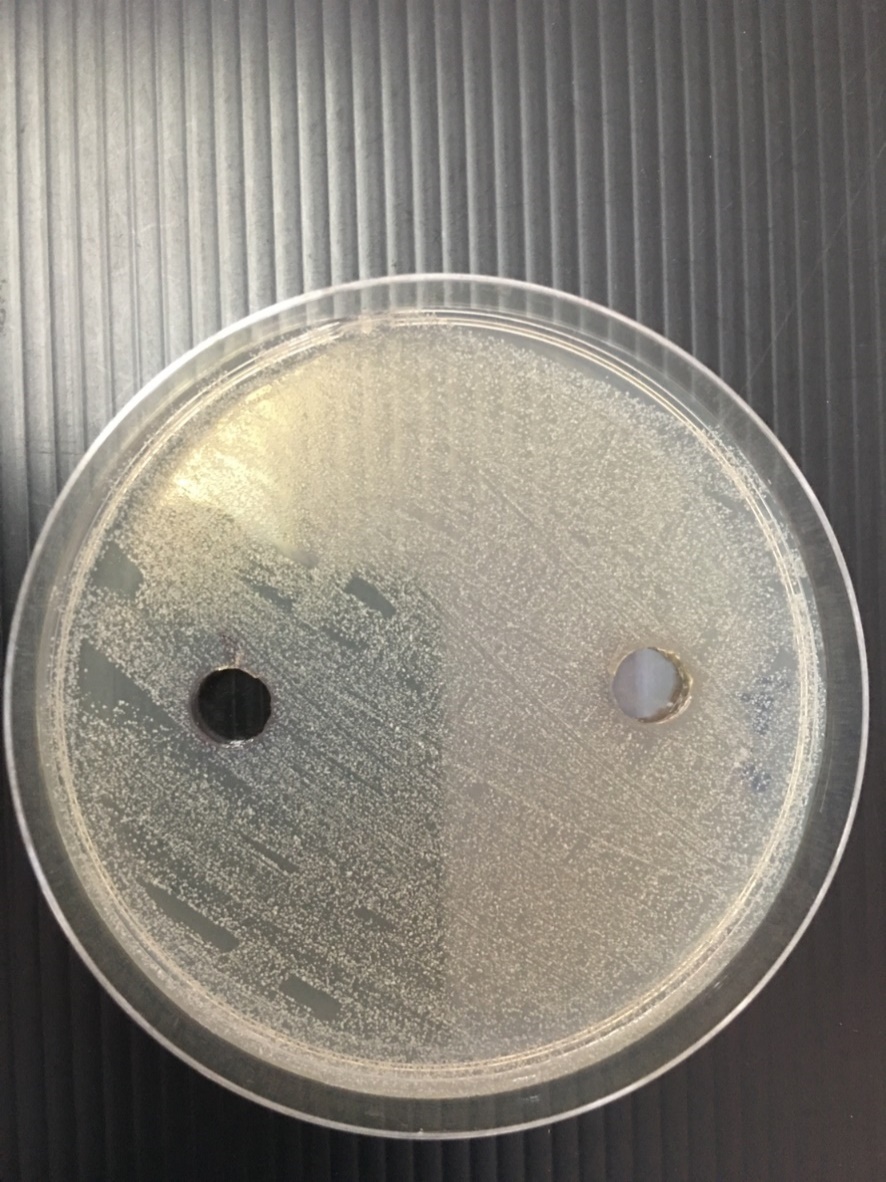
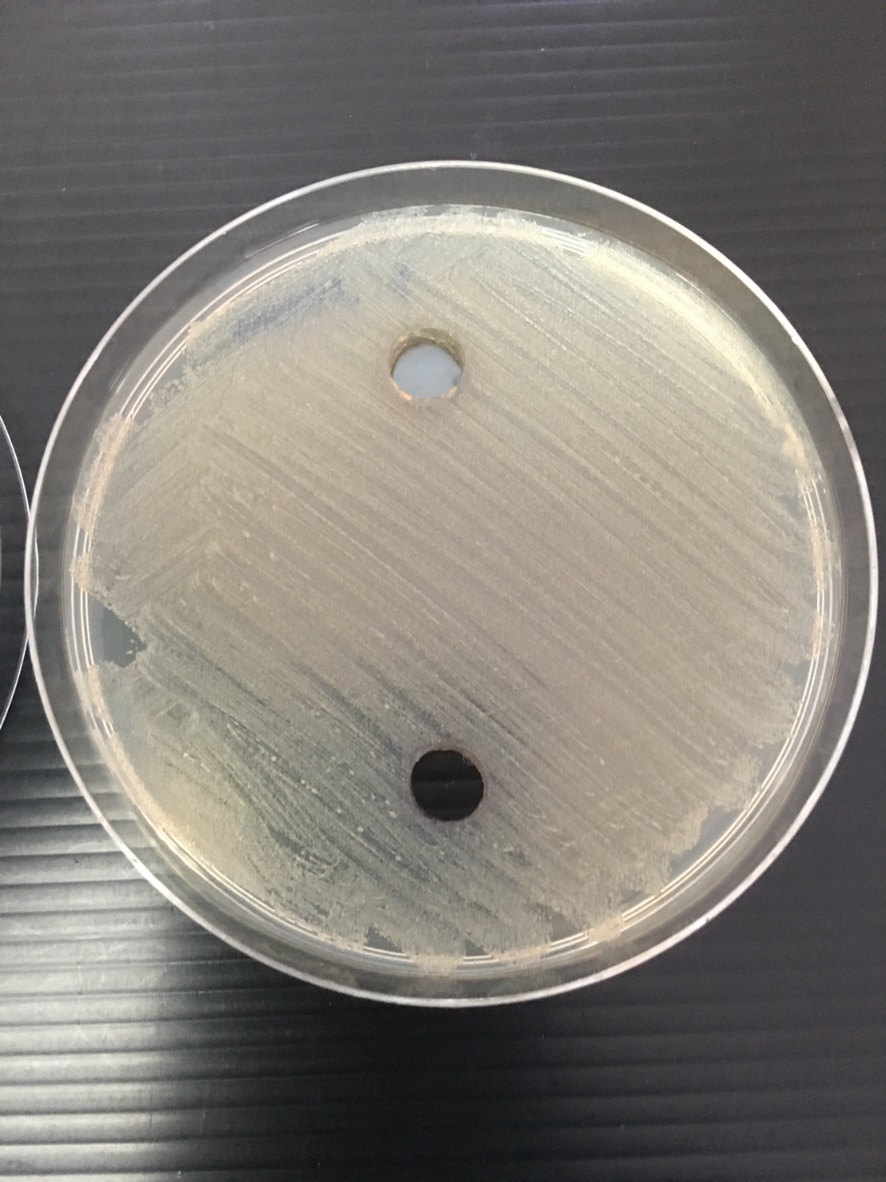
**5 nm**

**Supplementary Figure S2**

Chart, histogram

Description automatically generated

**Supplementary Figure S3**



**GVE**

**GVE**

**Control**

**Control**

**A**

**B**

**Supplementary Figure S4**

**Supplementary Table S1:** TGA data of GVE-SNP

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Sample** | **Stages** | **Onset Temperature (°C)** | **Temperature ranges (°C)** | **IDT (°C)** | **IPDT (°C)** | **Mass loss (%)** | **Ash (%)** |
| GVE-SNP | I | **31.75** | 24.96-172.18 | 51.44 | 799.61 | Y = 7.455 | **65.938** |
|  | II | **228.4** | 172.18-518.46 |  |  | Y = 20 |  |
|  | III | **540.13** | 518.46-799.61 |  |  | Y = 4.72 +1.189 |  |
|  |  |  |  |  |  | **Total = 34.062** |  |

**IDT: Initial decomposition temperature; IPDT: Integral procedural decomposition temperature.**