

Green Synthesis, Characterization, Morphological Diversity, and Colorectal Cancer Cytotoxicity of Gold Nanoparticles

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Supplementary Information

Supplementary Figure S1: Zeta potential

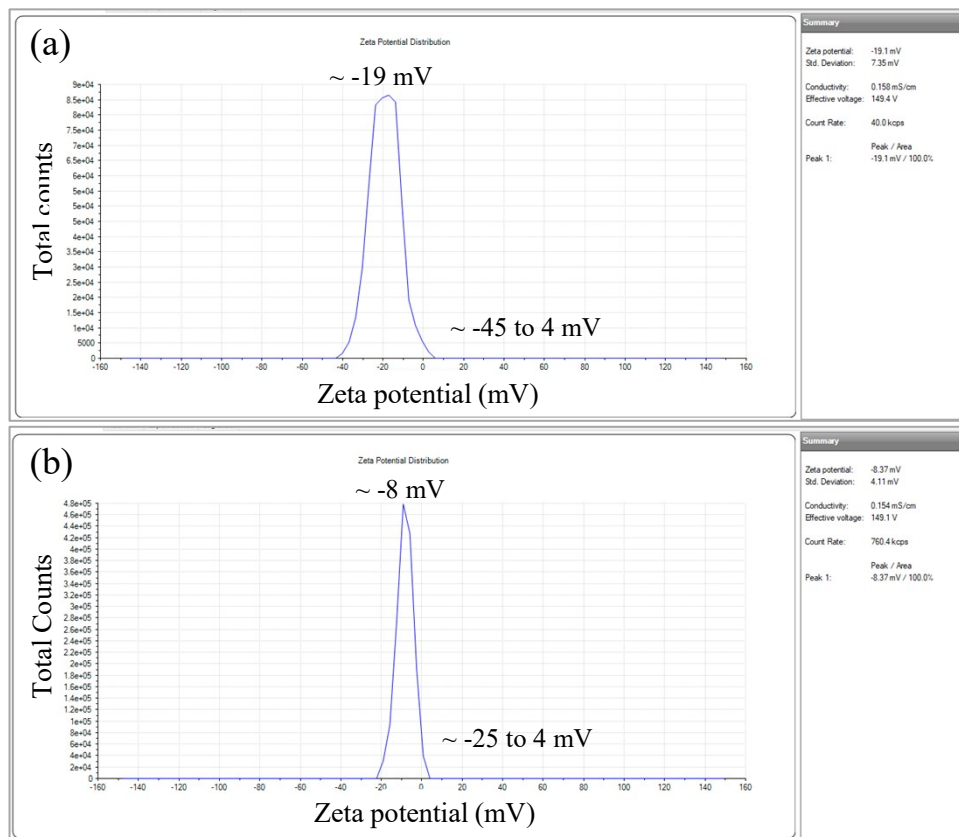


Figure S1: Zeta potential surface charge of AuNPs prepared with (a) gum Arabic (AuNPs@GA) and (b) cinnamon extracts (AuNPs@CNM).

Supplementary Figure S2: Zeta sizer

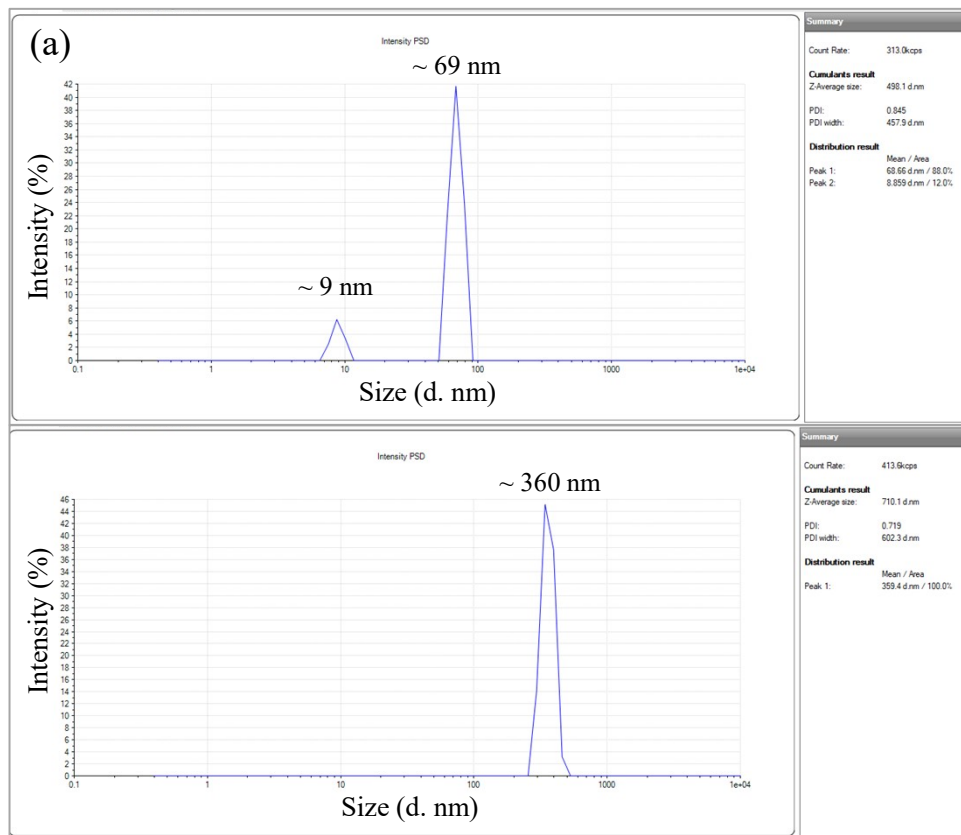
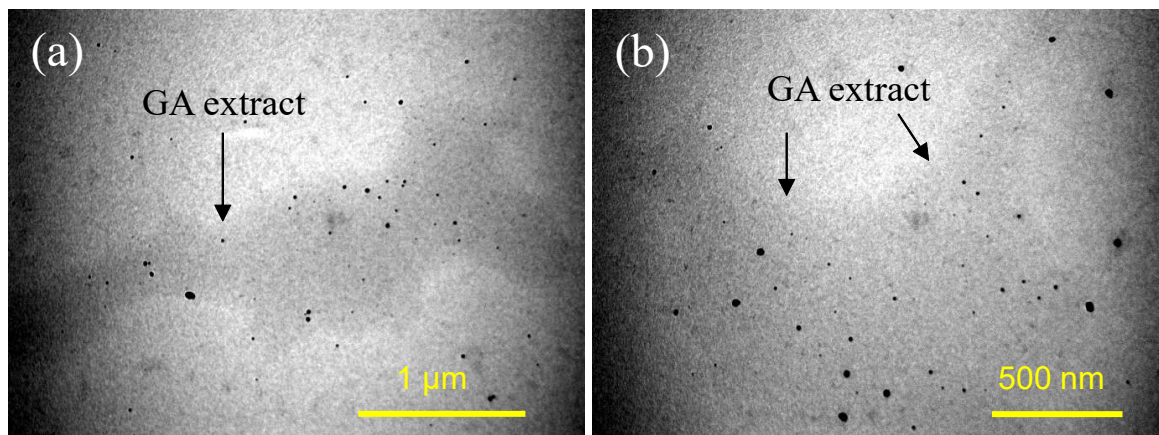


Figure S2: Hydrodynamic diameter distribution of AuNPs prepared with (a) gum Arabic (AuNPs@GA) and (b) cinnamon extracts (AuNPs@CNM).

Supplementary Figure S3: TEM

AuNPs@GA



AuNPs@CNM

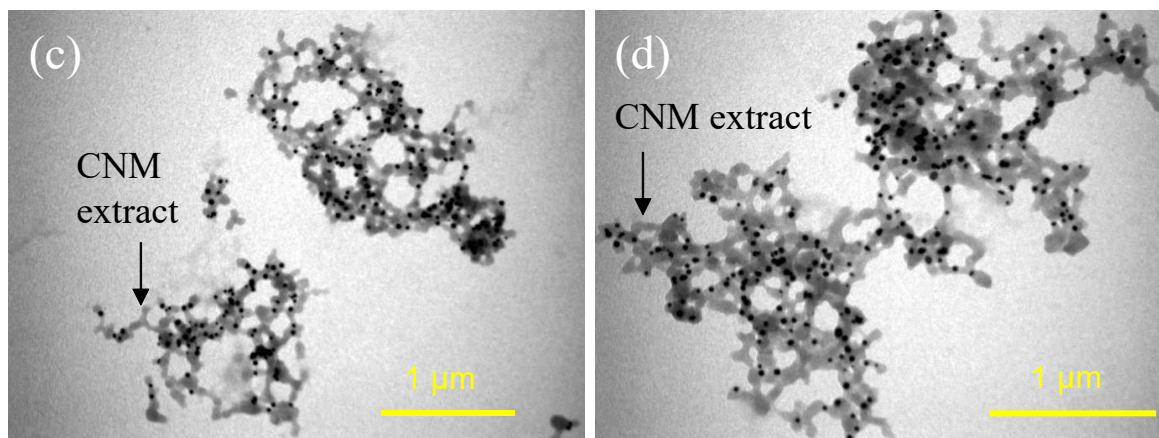


Figure S3: Transmission electron microscopy (TEM) images (low magnifications at two locations) of synthesized (a, b) AuNPs@GA and (c, d) AuNPs@CNM specimens using gum Arabic (GA) and cinnamon (CNM). These images are shown to highlight the presence of extraction around the AuNPs, which probably lead to variation in particle size with respect to DLS as shown in Figure S1 (above). TEM images showed that GA and CNM were capable to wrap the AuNPs and protect them from large aggregation, particularly for AuNPs@CNM. For AuNPs@CNM, the NPs are appeared individuals and clearly distinguished by their dark contrast compared to cinnamon background. The chemical groups of GA and CNM capped the NPs through hydrogen bonding, allowing them to remain apart and offering NPs stability. The variation in particle size measured by TEM and DLS could be related to the presence of GA and CNM groups around the AuNPs. Thus, the hydrodynamical size of the particles (DLS) is estimated much bigger than the actual size of the particles in dry-state (TEM images), particularly for AuNPs@CNM

where the bonding of cinnamon extraction is strong as judged by their contrast compared to gum Arabic.