Supporting Information

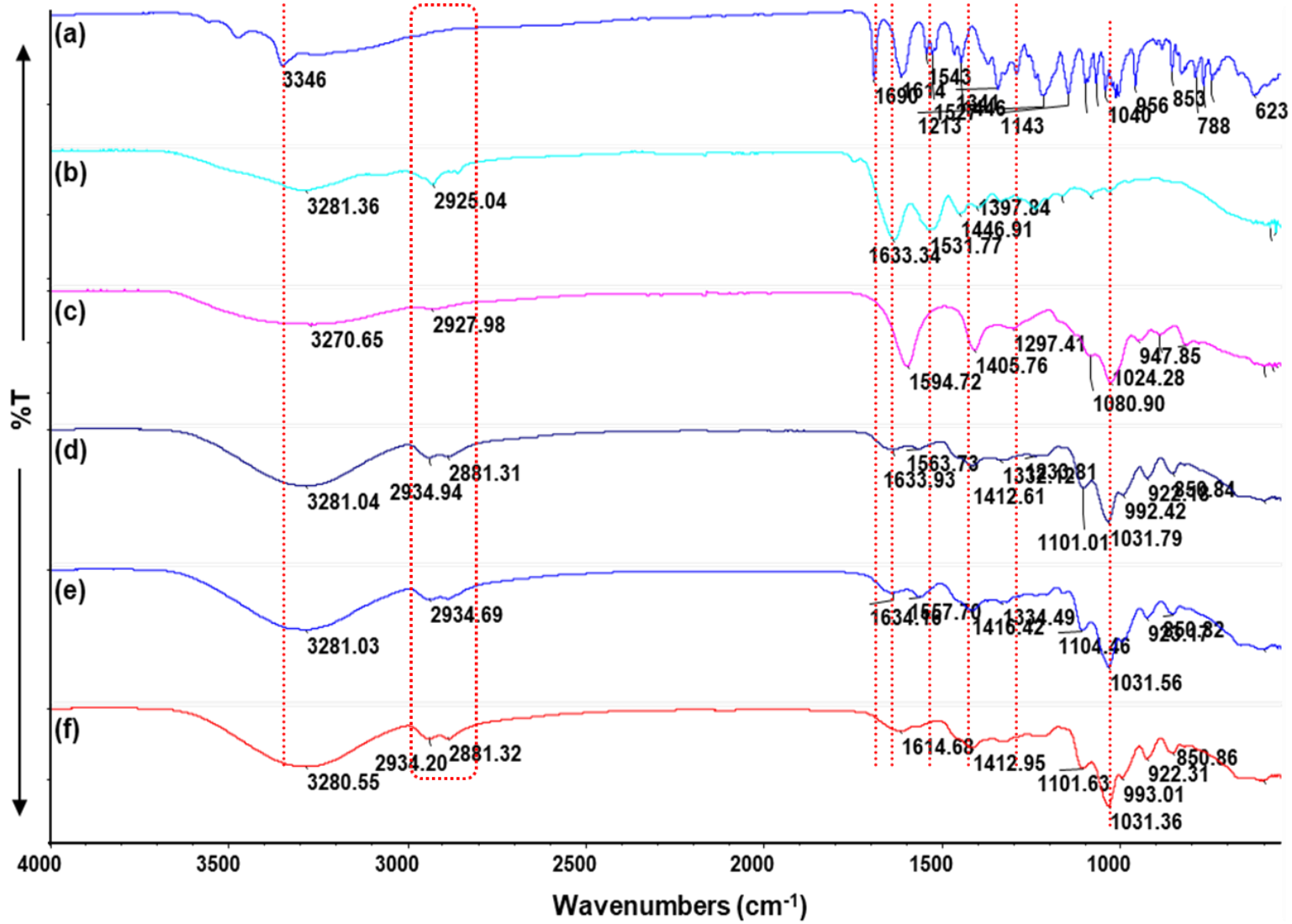

Figure S1. FT-IR characterization of hydrogel nanocomposites. **a**) EGCG. **b**) Gelatin. **c**) Sodium Alginate. **d**) HG. **e**) HG-Ag. **f**) HG-Ag-EGCG.

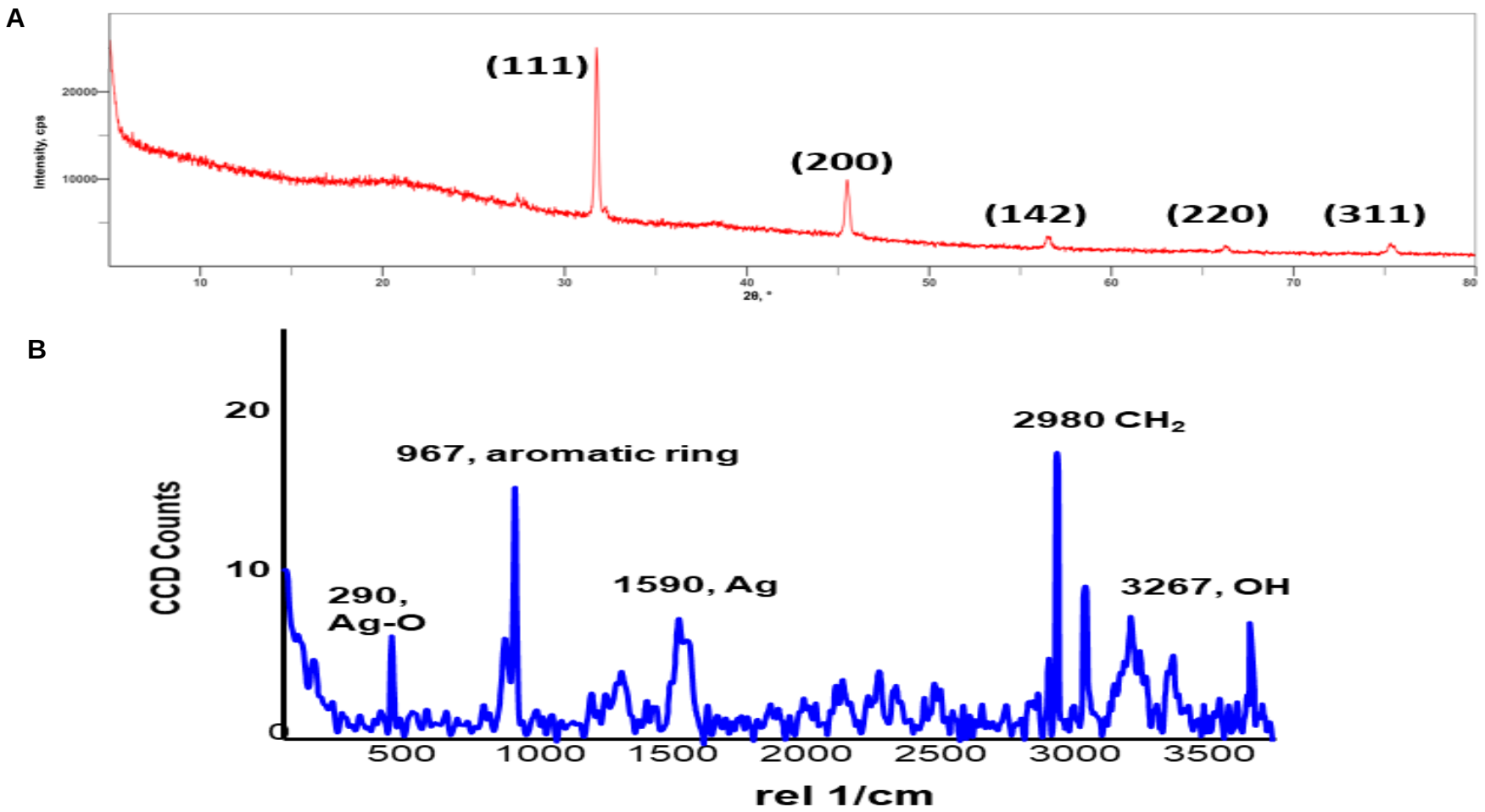

Figure S2. (A) XRD spectra displaying silver Miller indices peaks (JCPDS file No. 04-0783) and (B) Raman spectra of HG-Ag-EGCG displaying the characteristic frequencies of individual components.

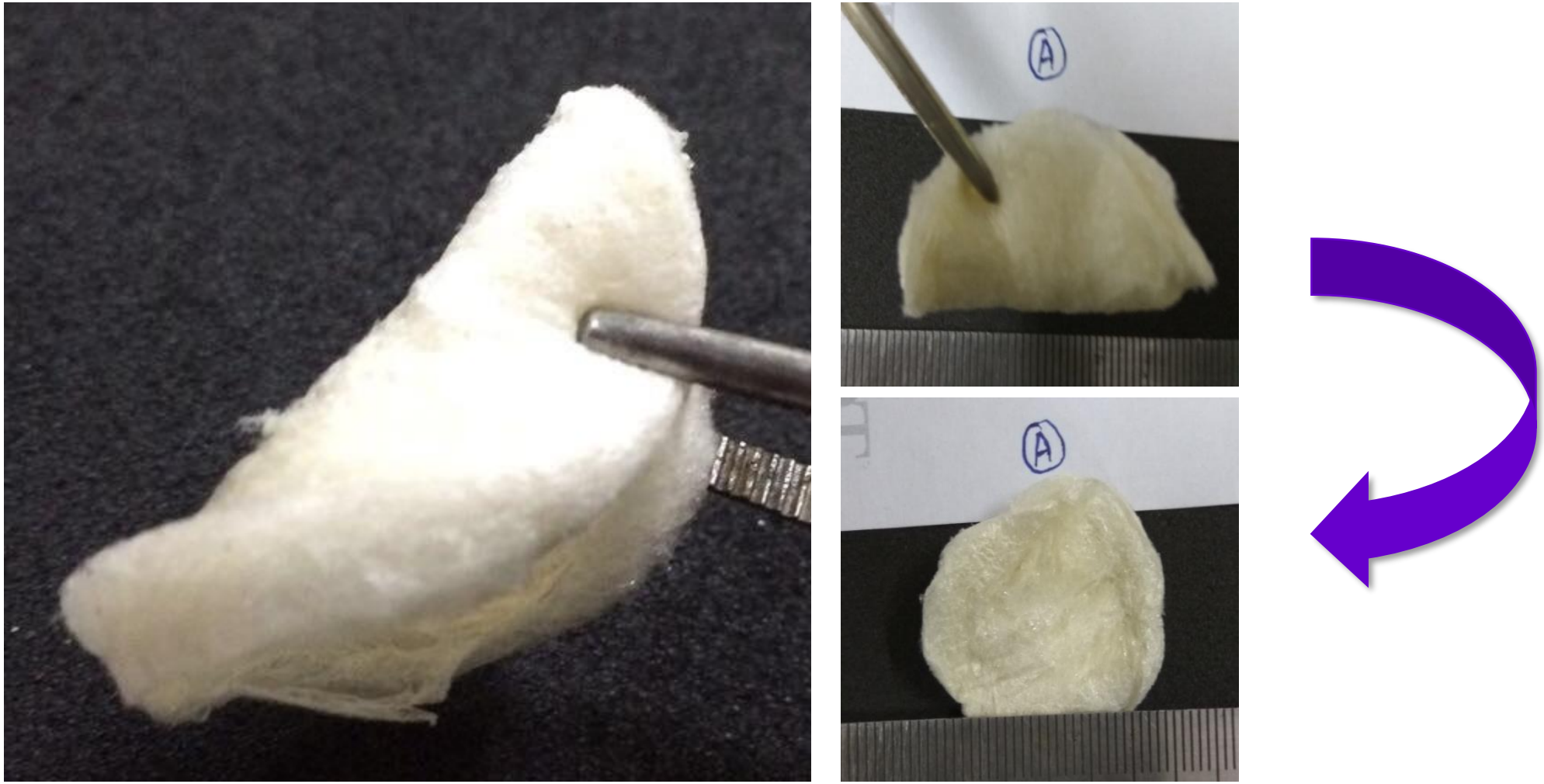

Figure S3. Physical twisting of HG hydrogel displaying ample flexibility to withstand the stress and strain.

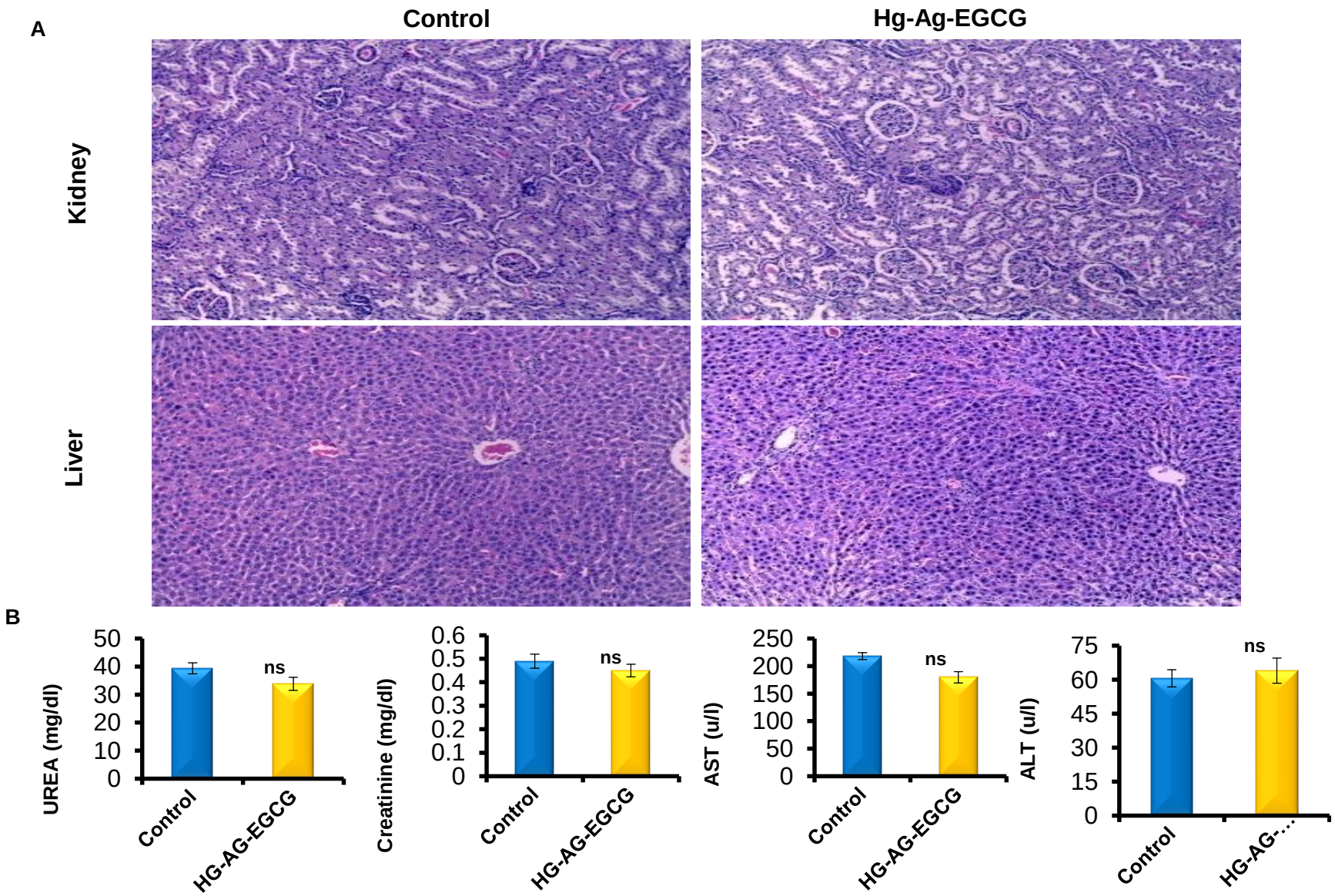

Figure S4. Systemic toxicity of HG-Ag-EGCG. (A) H&E stain of kidney and liver sections shows no visible damage in their microstructure with our wound patch (Images were obtained at 20x magnification). (B) Biochemical parameters (Urea, Creatinine; kidney, AST, ALT; liver) shows no significant alterations compared to control, confirming excellent biocompatibility of HG-Ag-EGCG hydrogel wound patch (n = 3).

Figure S5 - Role of HG-Ag-EGCG towards fast wound healing