

## Supplementary Material

**Figure S1** Histological analysis of hearts harvested 28 days after MI. A) Images from four-treated groups showing morphological changes with H&E staining of heart paraffin sections. B) Images from four-treated groups showing myocardial fibrosis with MT staining of heart paraffin sections. **Figure S2** showed blood chemistry profile analysis and complete blood count (CBC) after treatment with different formulations. **Figure S3** displayed histological analysis of H&E staining of main organs paraffin sections for safety evaluation. **Figure S4** IHC analysis of expression of A) CD31 and B) Ki-67 in heart sections of different groups after treated for 28 days. **Figure S5** Immunostaining of M2 macrophages in heart sections. A) Sham group; B) NS group; C) h-HA group and D) o-HA group. E) CD206<sup>+</sup> M2 macrophage in heart tissues. (P<0.001)