1 Cell proliferation and viability

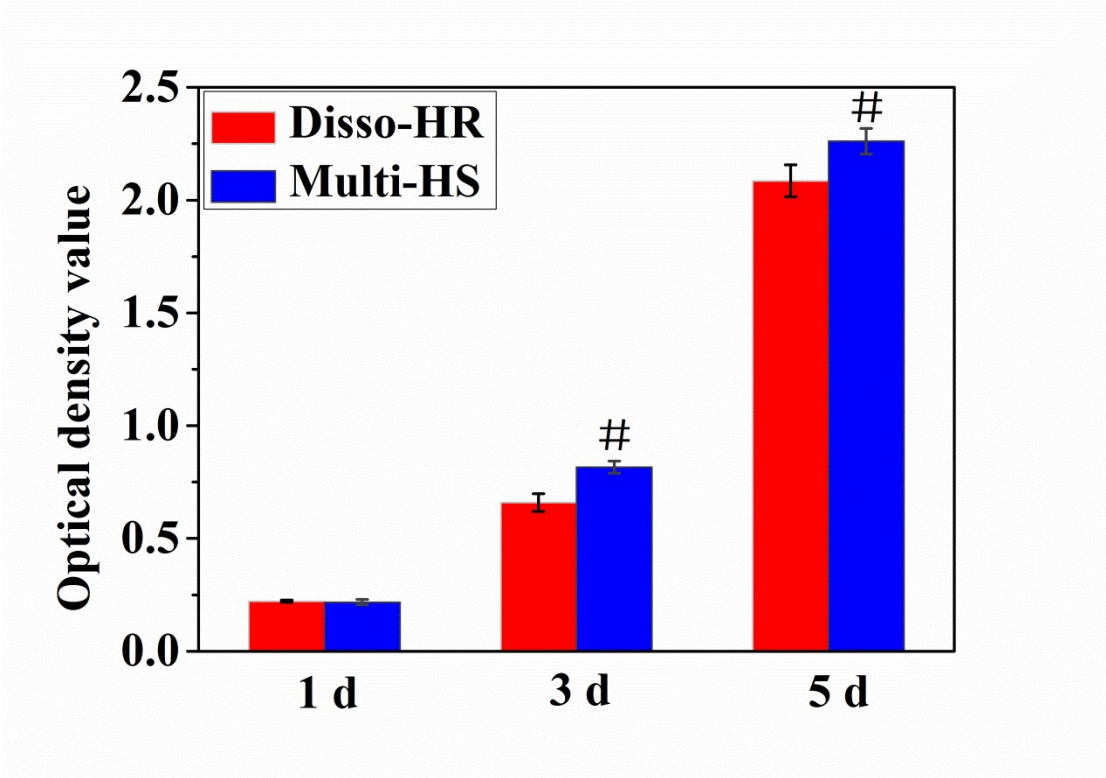

Figure ESI.1 CCK-8 kit assay OD value version for Cell proliferation.

2 Experiment: Protein adsorption of model protein

Protein adsorption plays a key role in many biological processes, and happened prior to cell attachment. Some reported that one of the reasons why artificial inorganic scaffolds is in favor of cell attachment is that Ca/P inorganic surface tend to absorb proteins among many of which facilities cell adhesion. Nevertheless, that process is so complex influenced by both protein(protein conformation, competitive adsorption etc.) and materials that many research focused on just a patch of it. In our study, Bovine Serum Albumin(BSA) and Lysozme(LZM) were selected as model protein among which the former is acidic protein and the other is basic protein. we operated Micro BCA protein assay kit(Thermo) based on colorimetry To quantify the

adsorption value.

Result：protein adsorption value

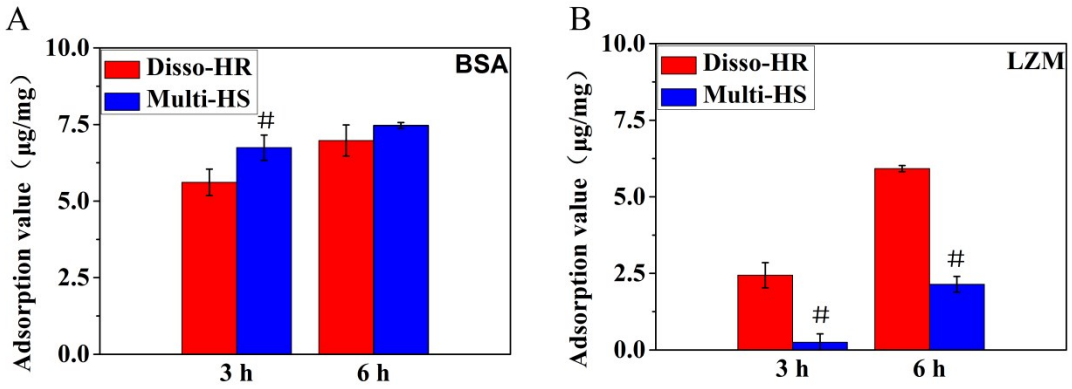

Figure ESI.2 Protein adsorption measured by BCA. Bovine Serum Albumin(A) and Lysozme(B) were selected as acidic model protein and basic model protein.

For artificial implant scaffold, the protein adsorption comes prior to cell adhesion. The protein adsorption of materials presented significant impacts on cellular behavior. Herein we investigated the adsorption behaviors discovering that, in spite of negative Zeta potencial of both particles, materials were apt to absorb acidic protein-BSA while Disso-HR group adsorbed much more basic protein-LZM which may contribute to diffirent exposed crystal plane.