

Polydopamine-Decorated Polycaprolactone human neural stem cell Carriers

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On the surface of biodegradable polycaprolactone (PCL) microspheres, a bioinspired adhesive material, polydopamine (pDA), was used to immobilize human neural stem cells (hNSCs), allowing the development of as versatile key systems that can be used for cell carriers. pDA decorated PCL microspheres have characteristics of water-friendly and sticky, which lead to the full dispersion in aqueous solution and stabilized adherence on to a wet biological surface. Additionally, PCL with adhered Adeno-associated virus, a safe gene vector that can effectively regulate cell behaviors, is efficiently delivered to hNSCs. Through experiments, pDA coated three dimensional scaffolds was proven to be an effective strategy and exhibited great potential in cell therapy.