

smarth2Ogel - Smart & Intelligent Hydrogel-Based Scaffolds for Tissue Engineering and its Application for Construction of Diagnostic Biochips

Hydrogels are cross-linked hydrophilic polymer networks with water as the dispersion media. They are based on biopolymers or on synthetic polymers and provide a mechanical scaffold for cells possessing special properties like biocompatibility and bioactivity.

Typically biopolymers are hyaluronic acid or chitosan. These biopolymers are then chemically modified to achieve chemical or physical cross-linking. This cross-linking is done in order to control the 3D structure, which influences its mechanical and rheological properties. Our innovative and smart approach is to develop 'intelligent' cross-linkers to prepare task-specific hydrogels. We prepare innovative 'asymmetric' cross-linkers bearing task-specific modifiers influencing the chemical and biological properties of these new smart hydrogels. The modifiers will be selected based on the biological application for selectively modify the ionic and hydrophilic interactions, respectively biological environment to stimulate cell growth.

Informations complémentaires

Collaborateurs-trices

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