

Catalytic Saloplastics: Alkaline Phosphatase Immobilized and Stabilized in Compacted Polyelectrolyte Complexes

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R�sum� en anglais	Novel biochemically active compact polyelectrolyte complexes (CoPECs) are obtained through a simple coprecipitation and compaction procedure. As shown for the system composed of poly(acrylic acid) (PAA) and poly(allylamine) (PAH) as polyelectrolytes and alkaline phosphatase (ALP) as enzyme, the enzyme can be firmly immobilized into these materials. The ALP not only remains active in these materials, but the matrix also enhances the specific activity of the enzyme while protecting it from deactivation at higher temperature. The presence of the matrix allows fine control and substantial enhancement of reaction rates by varying the salt concentration of the contacting solution or temperature. The excellent reusability, together with the ease of co-immobilizing other useful components, such as magnetic particles, allowing facile handling of the CoPECs, makes these materials interesting candidates for variable scaffolds for the immobilization of enzymes for small- and large-scale enzyme-catalyzed processes.
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