Visual detection of specific protein-protein interaction using PHB microsphere of substrate binding domain from *Alcaligenes faecalis*

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Abstract

We describe the design, immobilization, and functional characterization of an biospecific immobilization of fusion protein and its application in selective protein-protein interaction. Many experimental approaches in biology and applications in diagnostics and drug discovery require proteins immobilized on substrates. In this work, the substrate binding domain (SBD) of extracellular PHB (Poly(3-hydroxybutyrate)) depolymerase from *Alcaligenes faecalis* T1 was used. PHB depolymerase of 393-488 amino acid is a bacterial hydrolase comprised with two domains of binding and catalytic functions and a short linker domain. Nothing is shown about the biospecific immobilization of fusion protein containing SBD of PHB depolymerase. This approach can potentially the opportunity the study dynamics of biochemical reactions. In this talk, we report herein that the visual detection of specific interaction using PHB based microsphere-tethered substrate binding domain from *A. faecalis*.

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