

A novel material of BC-mussel adhesive protein fusion protein for efficient immobilization of antibody

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Protein A is an antibody binding protein, which specifically targets the Fc portion of antibody. Mussel adhesive proteins (MAPs) are able to form strong bonds to diverse substrates such as glass, metals, and plastics. In the present work, we constructed a novel fusion protein, BC-MAP, as an immobilizing agent by genetically fusing MAP with two domains (B and C) of protein A for effective immobilization of antibody on surface. Sole BC domain without MAP was also constructed as a comparative control. In results, quartz crystal microbalance (QCM) analyses showed that BC-MAP has an excellent antibody binding ability compared to sole BC protein. Owing to unique property of MAP, BC-MAP-based antibody immobilization does not require any surface chemical modification procedures. Thus, the proposed BC-MAP fusion protein could be a valuable linker material for efficient immobilization of diverse antibodies onto diverse surfaces.