**Innovative Adhesive Platform Biomaterial for Tissue Regeneration and Drug Delivery Therapeutics**

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Marine mussel adhesion is known to be mediated by adhesive proteins, which are secreted through the mussel byssus and have great potential as biologically and environmentally friendly adhesive biomaterials due to their biocompatibility and biodegradability. In addition, mussel adhesive proteins have strong adhesion ability even on wet and underwater surfaces due to their unique amino acid arrangements and composition.However, research using the natural amino acid composition has been limited due to extreme difficulties in obtaining sufficient quantities of mussel adhesive proteins for practical applications and commercialization. Previously, we successfully produced redesigned mussel adhesive protein using a bacterial expression system and this bioengineered mussel adhesive protein showed significant adhesion ability and biocompatibility. In this talk, I will present our research team’s efforts in the development and evaluation of mussel adhesive protein as an innovative adhesive biomaterial in diverse regenerative medicine and localized drug delivery.