

Photo-activated instant surgical tissue glue based on mussel adhesive protein and tyrosine crosslinking

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Marine mussel can long-lastingly adhere to solid support in underwater environment. Interestingly, because mussel adhesive proteins (MAPs) have remarkable wet adhesion, biocompatible and biodegradable properties, they have great potential to use in body's wet environment. Herein, we report a new light-activated, mussel protein-based bioadhesive (LAMBA) inspired by mussel adhesion and insect dityrosine crosslinking chemistry. Based on strong wet tissue adhesion, good biocompatibility and controllable crosslinking, LAMBA holds great potential as an ideal surgical tissue glue for diverse medical applications, including sutureless wound closures of skin and internal organs.