

### Identification of complex coacervation in mussel using recombinant mussel adhesive proteins

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Mussels inhabit seashore by attachment themselves using their adhesive proteins. Mussel adhesive proteins (MAPs) have various forms of foot proteins which are stockpiled in vacuoles with highly condensed liquid phase. Coacervation process has been suggested to explain the condensation of protein solution. Complex coacervation is liquid/liquid phase separation where the oppositely charged polyelectrolytes meet, followed by separation of condensed and diluted phases. Moreover, a condensed coacervate phase is non-dissolved in watery phase and has low interfacial tension. Thus, it has benefit for underwater adhesion. However, coacervation process has been regarded as impossible phenomenon in mussel adhesion system because acidic partner was not found for all basic MAPs. In this study, we present newly found an acidic partner and confirmation complex coacervation in mussel adhesion using several recombinant MAPs.