

***Escherichia Coli* Protein P Plays a Role as a Universal Fusion Partner: Solubility Improvement of Aggregation-susceptible Proteins by Fusion Expression**

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Escherichia coli Protein P is resistant to proteolytic cleavage. The strong stability and rigidity of Protein P is noticeable since all fusion partners need the abilities to work as solubility enhancers. Protein P consists of two domains, C-domain and N-domain. The two domains are structurally similar, but C-domain is not able to make correct folding alone. N-domain induces correct folding of C-domain, and they make solid globular conformation. When Protein P is used as a fusion partner of recombinant proteins which are aggregated to inclusion bodies in *E.coli* cytoplasm, the solubility of the proteins is dramatically increased by the post priming effect of Protein P. Separated N-domain, moreover, has great ability in enhancing the solubility of all recombinant proteins fused. These demonstrate that *E.coli* Protein P can be used as a universal solubility tag for aggregation-susceptible non-homologous proteins in *E. coli* cytoplasm.