

Recombinant a glycine-rich protein for the regulation of calcium carbonate crystallization

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Here, we produced a glycine-rich protein and tried to regulate calcium carbonate biomineralization using the protein. A gene from *Pinctada fucata*, which was expected to be involved in calcium carbonate crystallization as a glycine-rich protein, was genetically redesigned and codon-optimized for the over-expression in *E. coli*. The recombinant protein was highly well expressed as inclusion body, and efficiently purified in denatured condition. Some biophysical properties in different conditions were firstly investigated for the calcium carbonate biomineralization study. Then, calcium-binding ability was simply checked by stains-all method. It was tried to regulate the morphology in calcium carbonate crystallization using the purified protein. From this study, we could expect that acidic protein might control the calcium carbonate biomineralization.