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優勝作品專輯

作品編號	090018
參展科別	醫學與健康科學
作品名稱	Discovery, Cloning and Recombinant Expression of a Coral Peptide with anti-Bacteria activity
得獎獎項	一等獎

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Abstract

Inflammatory Bowel Disease (IBD) is a prevalent disease of the West which pathogenesis is driven by a combination interaction between bacteria and inflammatory cells. In this study, two Kazal domain peptide from Palythoa Caribaeorum were identified. They were found to exhibit serine protease inhibitory, anti-bacterial effects and low toxicity, making them ideal candidates for IBD treatment due to their ability to inhibit inflammatory cell migration and bacterial load. We amplified their coding DNA sequences via PCR and ligated the resulting PCR product into pGEX-4T3 vector. The recombinant plasmid was verified by sequencing, and restriction digest before being transformed into competent E.coli cells. Following transformation, we induced target peptides expression by IPTG to confirmed successful transformation and peptide production. Selected transformed bacterial colonies were expanded in LB broth before mixing with glycerol and frozen in -80°C freezer to complete the process of cell bank production.

【評語】090018

To determine and synthesize the peptide with antibacterial activity from coral. However, the antibacterial activity is less than vancomycin. Further, they cloned the peptide into a expression vector to purify the protein for future use.