

Human Single-Chain Antibodies to ETA: Potential Therapeutic Agent against Pseudomonal Infection

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Exotoxin A (ETA) is the most potent virulence determinant produced by *Pseudomonas aeruginosa* which is one of the foremost causes of life-threatening nosocomial infections. The ETA catalyzes the ADP-ribosylation of eukaryotic elongation factor-2 halting protein synthesis and leading to mammalian cell death. Engineered single-chain antibodies (HuscFvs) against exotoxin A should raise hope for treatment of the fatal entity. In this study, ETA antigens were used as antigens in the phage bio-panning for selecting phage clones that bound to the respective antigens from a previously constructed HuscFv phage display library. The selected phage clones were transfected to *E. coli*, grown and induced for HuscFvs expression. HuscFvs in the *E. coli* lysates were tested for target binding ability. Genes coding for ETA-bound-HuscFvs were

Ms. Sirijan Santajit is a Ph.D. (Tropical Medicine) candidate in Mahidol University and my ongoing research project is about the production of human monoclonal single-chain variable fragments (HuscFvs) that can neutralize the biological activities of Exotoxin A and interfering quorum sensing signals in *Pseudomonas aeruginosa* using phage display technology and the computerized



I would like to discovery of the therapeutic proteins and phage display-based therapeutic antibody against virulence determinants of their organisms in order to help patients who suffered from infectious diseases

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