RESEARCHPROJECT

Institute
Life Technologies

Recombinant Production of Peptides

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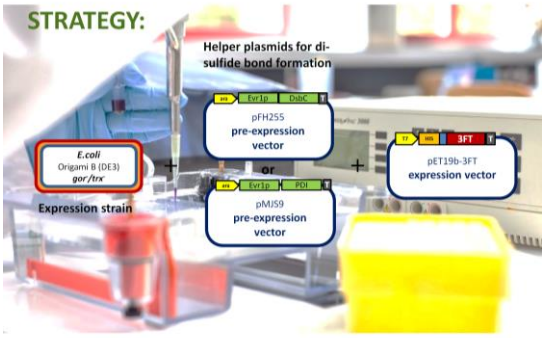
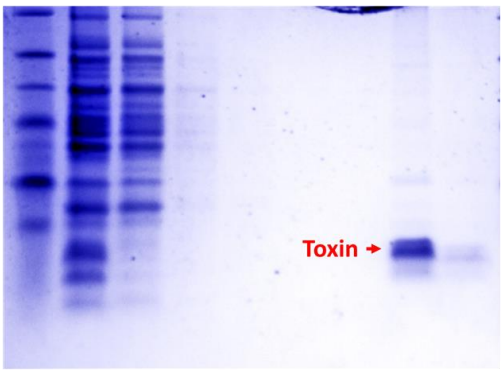
Description Recent technological advances in delivery and formulation of peptides have rekindled the interest of the pharmaceutical industry for peptide therapeutics. Recombinant production is an alternative to chemical synthesis, in particular for longer peptides/short proteins and peptides containing post translational modifications such as multiple disulfide bonds.

Different expression systems were tested for the production and purification of snake venom-derived three-finger toxins containing four disulfide bonds. In order to express the peptides in the cytoplasm of *Escherichia coli*, where the reductive environment normally prevents the formation of disulfide bridges, several strains with mutated reductases and expressing inducible auxiliary proteins to aid correct S-S bridge formation were compared. In another approach the peptides are expressed in the oxidative environment of the ER of the methylotrophic yeast *Pichia pastoris* and then secreted into the medium.



Cloning strategy for cytosolic expression of disulfide bond-containing peptides in *E. coli*.



SDS-PAGE of the purification steps of a 3-finger toxin

URL http://www.hevs.ch/

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