

Training School Application form
**Expression, purification and basic characterization of target
protein samples for drug binding studies**

Monday 8 – Wednesday 10 September 2025, Riga

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1. Motivation for attending the Training School (max 2000 characters – with spaces-)

My motivation for attending the Training School of expression, purification and basic characterization of target protein samples for drug binding studies.

Recently, I began working with recombinant protein expression, aiming to express and purify enzymes and antimicrobial peptides (AMPs) using bacterial systems. Due to their rapid growth and ease to use, bacterial expressions of AMPs have several advantages over solid-phase peptide synthesis (SPPS), including higher yields, reduced complexity for long sequences and decreased formation of by-products, which are often associated with chemical synthesis. However, I also faced challenges, such as the formation of misfolding proteins, inclusion bodies and crashing peptide aggregates, induction of cellular stress responses, and difficult separation and purification of the expressed product. Both the benefits and challenges have sparked my growing interest in the use of bacteria as a host, which aligns closely with the focus of this Training course.

Therefore, I see a great opportunity to expand my knowledge regarding expression systems, purification strategies and basic characterization techniques and how these tools can be

integrated into drug sample studies, which are highly relevant to both my current and future directions in peptide-based drug development programs.

Attending this school would not only strengthen my overall foundation but also provide the chance to connect with fellow minded, broaden our insight into this field and the potential for exploring future collaboration and networking opportunities.

2. Research interests (max 500 characters – with spaces-)

My thesis work and research primarily focused on peptide-based therapeutics utilized in novel biological cancer assays and mammalian cell culture. This work included solid-phase peptide synthesis (SPPS) of shorter peptides, which later expanded to recombinant protein expression using bacteria as an host for a cost-effective approach for producing higher yields of longer peptides chains, which paved the way to my interest in peptide-based drug development dynamics in microbes.