

Using Biotage® Initiator+ Alstra™ in PNA and Peptide Research

User Case: Professor Roger Strömberg, Karolinska Institutet



Professor Roger Strömberg is Head of the Bioorganic Chemistry Unit at the Department of Biosciences and Nutrition, Karolinska Institutet in Huddinge, Sweden. He leads a number of research projects in the area of nucleic acids and peptides in biotechnology and therapy, including tools for molecular biology, treatment of multi-resistant bacterial infections and prevention of Alzheimer's Disease.

One of Professor Strömberg's projects at Karolinska Institutet involves the synthesis of artificial nucleases and PNAzymes. In 2013, his research group acquired a Biotage® Initiator+ Alstra™ peptide synthesizer for making PNAs and peptides.

"It's an excellent machine, we get much better synthesis now," he says. "The microwave makes a big difference."

Biotage® Initiator+ Alstra™ is a fully automated, single channel, programmable microwave peptide synthesizer. The system's inherent flexibility for reagent set-up makes it a highly effective platform for both small and large scale synthesis from 5 μ mol to 2 mmol. With a working volume from as low as 0.6 mL, Initiator+ Alstra is perfectly suited for small scale microwave peptide synthesis, especially when the use of expensive building blocks is required e.g. PNA synthesis. Much effort has been made to develop the user interface on a 10" touch screen. But that is not the main benefit to Prof. Strömberg.

"Simplicity is good ... it just gives us what we want."

That is naturally the sweet spot for any research department: instrumentation which meets their expectations and at the same time offers great value.

"It's not so expensive," says Professor Strömberg. "When we synthesize compounds, the analysis shows we generally get one peak".

Any chemist who has tried to purify and identify compounds from an impure synthesis knows how time consuming it can be. The use of fast and precise microwave heating to increase the coupling efficiency during synthesis and thereby simplify the subsequent purification steps saves both time and money. Professor Strömberg is very satisfied with Alstra and comments: "I would not hesitate to recommend it to anybody."



Fully automated peptide synthesizer Biotage® Initiator+ Alstra™.