**When:**

Tuesday, 20 September

**Title:**

Semi-preparative LC purification and analytical characterization of genetic chemical scissors for impurity precision profiling and genomic fingerprinting.

**Abstract:**

The impressive success of mRNA vaccines in the Covid-19 pandemic has fueled the hope for further applications that may open a new age of medical therapies. As for any kind of pharmaceutical agent strict control strategies from early process development to final product is an essential precondition. Assembled of several thousand nucleotides, the molecular mass of these compounds is in the megadalton range. The large size coupled with the lability against chemical, enzymatic or even mechanical treatment are responsible for the stability of chemically sensitive mRNAs. Failure in the essential regions such as the Cap structure and poly A tail can have critical consequences on the integrity and/or translation. To handle the challenges of purification and analytical characterizations of these complex molecules, modern fingerprinting techniques utilizing chemical scissors play a leading role by cleaving regions of interest with high precision into qualifiable and quantifiable fragments [1]. The mapping of subsequent digest fingerprints as well as the analysis and purification of synthetic reagents require highly precise analytical and semi-preparative chromatographic methods and instrumentation to facilitate the precise purification and characterization

1. US WO EP CA SG Patent nr. WO2020127959A1, 2019

**Speaker 1:**

Dr. Alexander Schwenger

**Bio:**

Dr. Alexander Schwenger achieved his doctorate at the University of Stuttgart in 2017 where his career in chemical analytics began by interning for the university analytical service department. Hired immediately thereafter, his professional path rapidly grew at CureVac. Starting in Early Process Development as a scientist in 2017, his responsibilities diversified to include a team in 2021 to study and characterize analytical and purification methods for the diverse array of immunological products. In 2022, he was named Senior Manager Analytical Development at CureVac overseeing the next steps in mRNA and oncological analytical research.

**Picture:**



**Speaker 2:**

Dr. Dennis Köhler

**Bio:**

Dennis Köhler has a pronounced career ranging from organic synthesis in the field of oligonucleotides as well as analytics for almost 2 decades. Graduating from the University of California, San Diego in 2004 he immediately initiated his professional path in the region of modified nTP synthesis and purification at Trilink Biotechnologies, Inc. Subsequently, he spent short of 10 years synthesizing fluorophores for DNA labelled FRET technologies for Biosearch Technologies, Inc. After moving to Vienna in 2014, he joined the Thermo Scientific team as sales support for chromatography where in 2018 he transitioned to the Thermo Scientific Product Applications team outside of Munich, contributing to application notes, new product development, and elevated field support.

**Picture:**

