



SCIENTIFIC WEBINAR

Tuesday 13th June 2023

16.00 CEST / 10.00 EDT / 07.00 PDT

Remove the Pain, Retain the Gain! Biophysical Methods in Early Drug Discovery

In collaboration with **leadXpro**

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Speakers



Thilo Enderle

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Axxam GmbH



Fabio Andres

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Webinar Replay Session:

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Webinar

Summary

Early drug discovery requires an interdisciplinary approach with a sophisticated interplay between empirical methods and rational design. Amongst the different therapeutic modalities, orally available small molecules are a major pillar for safe treatment of acute and chronic diseases. Especially for novel targets, screening large libraries of drug-like molecules is the method of choice to GAIN valuable information for medicinal chemistry. However, even today's innovative assays are suffering from false positives due to non-specific interactions of compounds which are described as "PAINs". Therefore, a crucial step is the validation of hits to show specific binding to the target of interest. We introduce biophysical methods with microtiter plate-based readouts in solution and chip-based detection by immobilizing the target of interest. We show how these methods are applied in direct binding assays for different target classes. Furthermore, such assays can also be applied for primary screening of targets which were until recently considered PAINfully undruggable. For example, to identify small molecules binding to miRNAs as needed in the design of RIBOTACs for targeted RNA degradation. Biophysical methods can not only retain the GAIN for traditional targets but can also provide GAIN in hit identification for emerging drug targets.

Key words: HTS, Small Molecule, Hit Validation, Biomolecular Interactions, Direct Binding Assay, Biophysical Methods, Membrane and Soluble Protein, Tough Drug Targets, RIBOTAC, Binding Kinetics, Grating-Coupled Interferometry, Microscale Thermophoresis, WaveRAPID, Dianthus.

About the speakers

Thilo Enderle joined HDC GmbH, now Axxam GmbH, as CEO in December 2018. He brings more than 25 years of industry experience spanning from target discovery to preclinical candidate nomination in different settings such as Big Pharma, Biotech and as consultant to VC investors. From 2016 to 2018 he was he was Head of Discovery at E-Scape Bio, a biopharmaceutical company in South San Francisco. Prior to this he was Senior Research Director at F. Hoffmann-La Roche in Basel where he led an interdisciplinary team in a global matrix organization. With his teams he was driving more than 100 projects in various disease areas from target assessment to lead optimization. Thilo is inventor with 12 patent applications for proprietary assay methods and laboratory automation solutions. Thilo received his PhD in Physics from the University of Basel and completed a Postdoc in Biophysics at the Lawrence Berkeley National Laboratory.

Shailesh Tripathi studied Biotechnology in India and received his PhD jointly from Philipps University in Marburg/Germany and the University of Genova/Italy. He worked as postdoc at the Department of Physics (University of Wisconsin, WI/USA), Department of Biochemistry (University of Maryland, MD/USA), in Neurosciences (Bangalore/India) and most recently at the Italian Institute of Technology in Genova/Italy. Shailesh has a broad expertise in cell culture and protein expression (E.coli and insect cells), purification as well as labeling and modification of proteins. He masters protein crystallization with various techniques and has hands-on experience in Xray-data collection and interpretation. He is an expert in the biophysical methods micro-scale thermophoresis (MST) and surface plasmon resonance (SPR, "Biacore") and has good experience in other biophysical techniques like ITC, BLI, SEC and LC-MS.

Fabio Andres obtained his master and PhD degree from the University of Zurich, where he was working in the lab of Andreas Plückthun on the targeting of receptor tyrosine kinases with designed, antibody-like proteins as a novel approach for cancer therapy. In 2018, he joined Creoptix as an application scientist, where he contributed to establishing the GCI technology for biomolecular interaction analysis in the academic, biotech and pharma research field. In 2023, Fabio joined leadXpro as a senior scientist, where he is heading the biophysical team, supporting the company's projects aimed at structure-based drug discovery on membrane proteins.

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