



TRAIN Academy

TRAIN – Key note lecture

Chemical Probes for the Validation of new Targets for Drug Development

Monday, 4th June 2018, 2.00 pm

HZI | Inhoffenstr. 7 | 38124 Braunschweig | Raum X1.04

Prof. Dr. Stefan Knapp

Institut für Pharmazeutische Chemie, Goethe-Universität Frankfurt a. M.

1 About the talk ...

Our research group is interested in the rational design of highly selective inhibitors, so called “chemical probes” and their use for the discovery and validation of future drug targets. We currently focussed our efforts on two main target families: epigenetic reader domains as well as protein kinases.

In the epigenetic area we have developed inhibitors targeting acetyl-lysine dependent protein interaction domains (bromodomains) that play key roles in the regulation of gene expression. The human proteome encodes 61 of these highly diverse domains which are present in 46 mainly nuclear proteins. Recent efforts led to a comprehensive set of protein interaction inhibitors that cover now all main bromodomain subfamilies. A central aspect of our research strategy is that we make all inhibitors and associated data freely available to the wider research community.

In the kinase area we aim to develop novel strategies targeting kinases selectively. A research focus in this area is on allosteric inhibitors as well as on covalent inhibitors that utilized specific dynamic properties as well as unique cysteine residues to achieve exclusive selectivity for one kinase target. Also in this area the availability of highly selective inhibitor molecules has pioneered new biological insights and revealed new applications in pharmaceutical sciences.

2 Stefan Knapp is ...

... the CSO of the newly founded SGC node at the Goethe-University Frankfurt. His research interests are the rational design of selective inhibitors that target protein kinases as well as protein interactions modules that function as reader domains of the epigenetic code.

Host: Prof. Mark Brönstrup, HZI