



## SEMINAR NOTICE



July 16, 2021



11:00



[meet.google.com/ngf-bmpv-rdi](https://meet.google.com/ngf-bmpv-rdi)

### Prof. Dr. Stefan Knapp



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### The role of scaffolding and enzymatic activity in kinase signalling. Lessons from studies with selective small molecule inhibitors.

**Abstract.** In living cells, protein kinases are organized in large signalling complexes comprising adapter proteins, diverse enzymes and regulatory proteins. In recent years it has become increasingly evident, that protein kinases act not only as independent enzymes but that they also function as protein interaction scaffolds organizing the assembly of signalling complexes in a conformation sensitive way. This complexity is also reflected by the response of kinases to inhibitors that may stabilize diverse conformations acting as inhibitors of enzymatic activity only, as modulators of kinase scaffolding roles or both. In this talk, I will exemplify the implications of altering protein interactions by allosteric small molecules as well as canonical ATP competitive inhibitors using a number of selective inhibitors that we developed recently. I will demonstrate how different binding modes that alter protein conformation and dynamics in a distinct way may result in diverse signalling outcomes and phenotypic responses. The important scaffolding roles of protein kinases will also enable targeting new and so far poorly explored members of the kinase family such as catalytically inactive pseudokinases, that represent a considerable number of largely unexplored kinase targets which have been linked to the development of many diseases.



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