

University of Groningen

## Kinetics and inhibition of enzymes in early stage drug discovery

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## Propositions

For the thesis

### **Kinetics and inhibition of enzymes in early stage drug discovery - A MOF and MIF symphony**

Hannah Wapenaar

1. Until the roles of HATs and the interplay with their substrates is fully understood, trial and error will need to show whether HATs are truly suitable drug targets
2. Within the field of medicinal chemistry, there should be more attention to the kinetic mechanism of enzymes and their inhibitors
3. The paradox of computational chemistry is that it is done to save experiments in the lab, but the reliability of the results depends on the experimental data available from the lab
4. Crystallography is a very useful tool in inhibitor discovery, but it is not a trivial thing to get a crystal structure
5. Control experiments are just as important as the “actual” experiments.
6. Even though much is already known about the kinetics of enzymes and their inhibitors, there is a need for convenient methods and explanations for medicinal chemists
7. The difference between a drug and a molecular tool is the application
8. Research is like throwing a pebble in a pond. It seems only small and disappears immediately under the surface. Only when you watch and wait, you will see the water ripple, the circles spreading wider and wider
9. “A medicinal chemist reporting IC<sub>50</sub> values should be boiled in oil” - R. A. Copeland
10. “A little nonsense now and then, is relished by the wisest men” – Mr Willy Wonka in “Charlie and the great glass elevator” by Roald Dahl

# Stellingen

Behorende bij het proefschrift

## **Kinetics and inhibition of enzymes in early stage drug discovery - A MOF and MIF symphony**

Hannah Wapenaar

1. Totdat het bekend is welke rol HATs spelen en wat de wisselwerking met hun substraten is, kan niet voorspeld worden of HATs werkelijk goede targets voor medicijnen zijn
2. Binnen de farmacochemie moet er meer aandacht komen voor het kinetisch mechanisme van enzymen en hun remmers
3. De paradox van computational chemistry is dat het gedaan wordt om experimenten in het lab te verminderen, maar dat de betrouwbaarheid van de uitkomsten wel afhankelijk is van de data beschikbaar uit het lab
4. Kristallografie is een nuttige methode voor het ontdekken van geneesmiddelen, maar het is niet eenvoudig een kristalstructuur te verkrijgen
5. Controle experimenten zijn net zo belangrijk als de “echte” experimenten
6. Al is er veel bekend over de kinetiek van enzymen en hun remmers, er is behoefte aan toegankelijke methodes en toelichtingen voor farmacochemici
7. Het verschil tussen een geneesmiddel en moleculair gereedschap is de toepassing
8. Onderzoek is alsof je een kiezelsteentje in het water gooit. Het lijkt maar klein en verdwijnt meteen onder de oppervlakte. Alleen wanneer je wacht en blijft kijken, zul je de golven op het water zien die zich steeds verder uitbreiden
9. “A medicinal chemist reporting IC<sub>50</sub> values should be boiled in oil” – R. A. Copeland
10. “A little nonsense now and then, is relished by the wisest men” – Mr Willy Wonka in “Charlie and the great glass elevator” door Roald Dahl