

High-throughput Screening for Mechanism-based Inhibition of CYP3A4 (HTS-MBI)

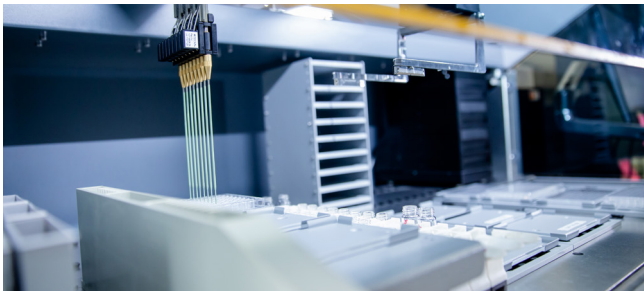
Drugs causing an irreversible, mechanism-based inhibition of CYP3A4 are highly likely to perpetrate drug-drug interactions with commonly used therapeutics that are also metabolized by CYP3A4 (as are almost 60% of marketed drugs). High risk for drug-drug-interactions (DDI) can particularly in multi-medicated patients affect the pharmacokinetic profile of co-administered drugs, leading to potentially dangerous side effects.

- Irreversible inhibition of CYP3A4 is persisting until new enzyme is produced by the body (de novo synthesis), resulting in prolonged effects even after the perpetrator drug was cleared from the systemic circulation. Irreversible inhibition is usually time-dependent and cannot be detected with regular inhibition assays
- We perform a concentration- and time-dependent inhibition screening of your drug candidate library, giving you clarity on the structure-activity relationship with respect to potential irreversible CYP3A4 inhibition
- To remove safety liabilities for your drug in development, we help you during your lead optimization phase by screening individual compounds or entire NCE libraries
- Mechanism-based inhibition of CYP3A4 is determined after pre-incubation with different concentrations of the test item. To this end a prototypic substrate reaction is monitored by measuring the product by LC/MS-MS

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Choose the Right Compound Early to Set the Stage for Success in Drug Development



Your molecule library can be screened with fast turn-around time: we have capacity for hundreds of compounds each week.



Critical inhibitory parameters (screening-grade K_i and k_{inact}) will be evaluated for every compound provided by you. In addition, we can compare your hit candidates to published, clinically known inhibitors as reference.



Leverage screening data to enhance your *in silico* modelling! Build up or enlarge your training sets for *in silico* modelling to improve your computational prediction on potential inhibitory effects of your drug candidate. To this end, the reporting of the screening results can be flexibly adapted to your preferred way of data evaluation.



By selecting a candidate drug, which does not inactivate CYP3A4, you reduce the requirements for the risk assessment on drug-drug-interactions during the clinical phase. This can potentially spare you additional expenses on time and money in drug development!

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