

Drug Metabolism and Pharmacokinetics in Mouse Models

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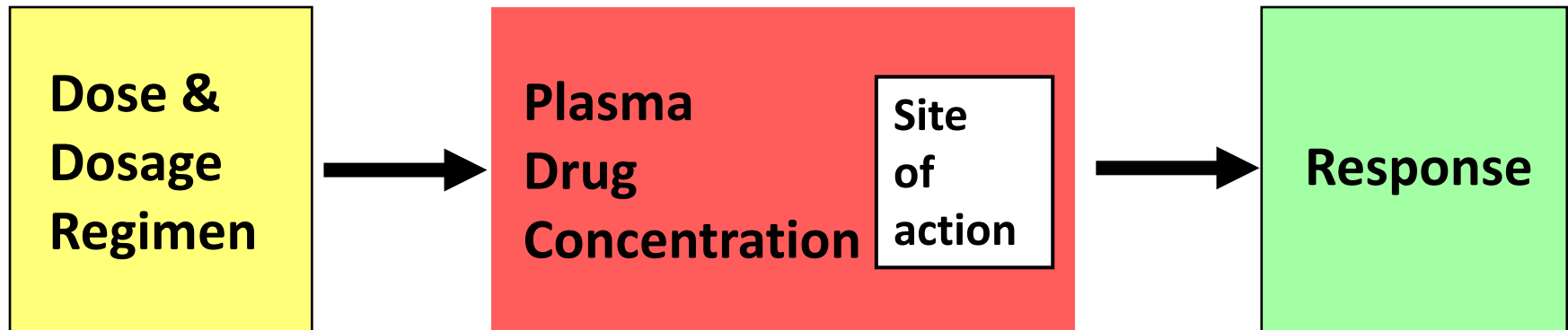
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Drug metabolism, pharmacokinetics & pharmacodynamics (DM/PK/PD)

Absorption, Distribution,
Metabolism & Excretion
Pharmacokinetics

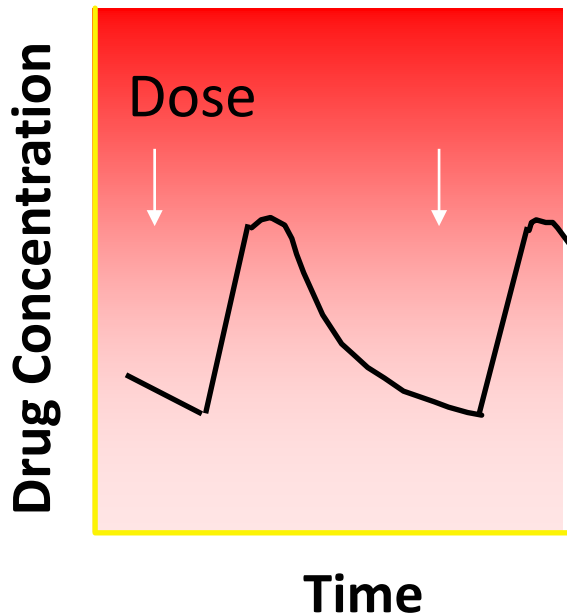
What the body does to the drug



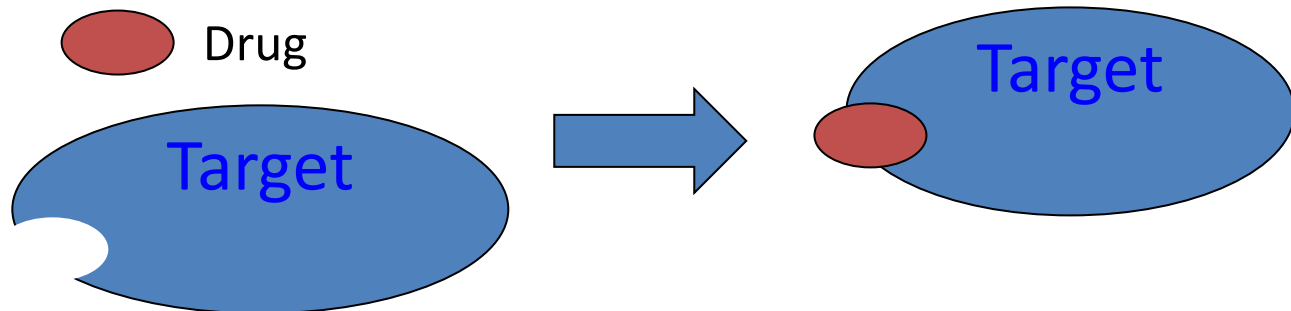
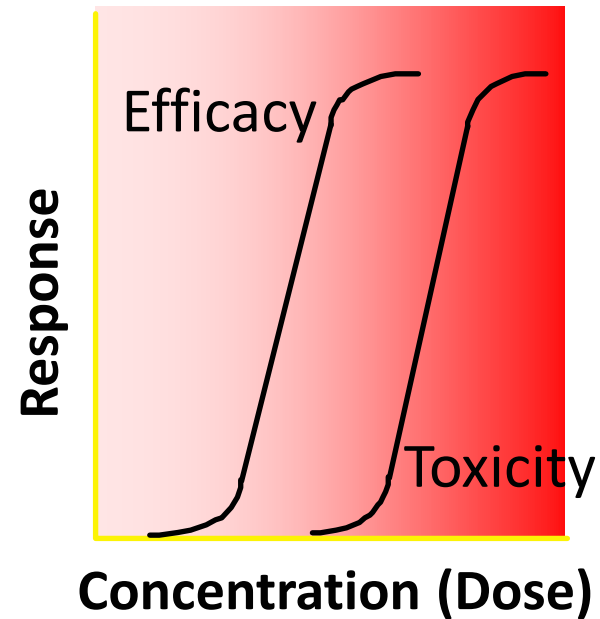
What the drug does to the body
Pharmacodynamics

PK/PD & their relationship

PK data

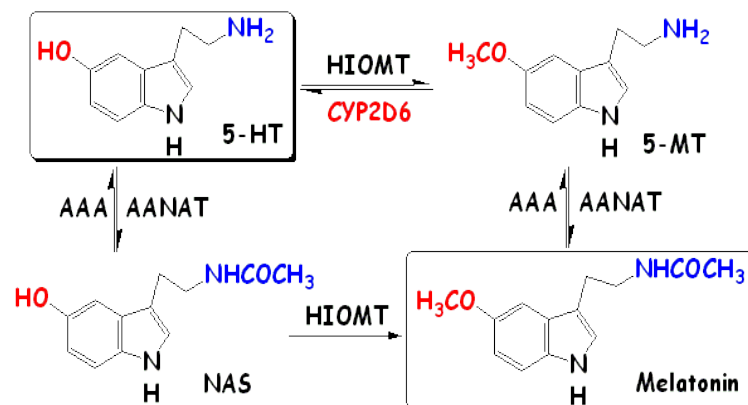
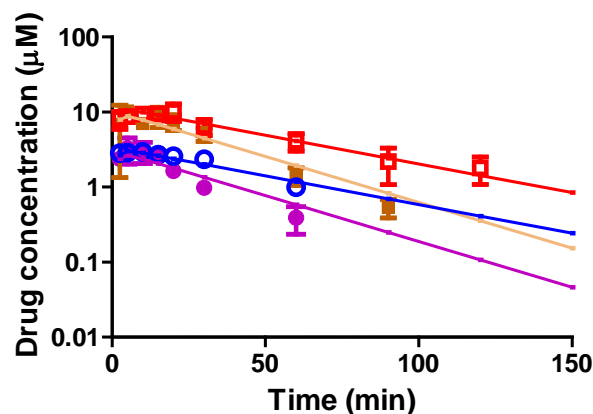


PD data



Understanding DM/PK in mouse models

- ⌘ How is the xenobiotic-metabolizing capacity altered by the transgene, disease, diet, and/or concurrent drug?
- ⌘ What is the metabolic fate of a given drug in mouse models?
- ⌘ What are the pharmacokinetic properties of the drug in mouse models?



Phenotyping mouse drug-metabolizing capacity & determining pharmacokinetics

Objectives:

- ⌘ To develop standardized methods and assays for the determination of drug-metabolizing capacity of clinically relevant mouse models.
- ⌘ To develop standardized methods and assays for the determination of pharmacokinetic properties of drugs in mouse models.

Approaches and methods

- ⌘ Phenotyping the drug-metabolizing capacity using individual probe drugs or cocktail approach
- ⌘ Pharmacokinetics modeling after LC-MS/MS quantification of drugs
- ⌘ MS and knowledge based metabolite identification



Platform/services

- ⌘ An investigator can submit a mouse or samples, and the capacity of xenobiotic metabolism by specific enzymes will be assessed.
- ⌘ An investigator can submit samples or a drug/compound, and the pharmacokinetic properties such as clearance, half life, volume of distribution will be determined in mouse models.
- ⌘ An investigator can submit a drug or samples, and the metabolites of the drug will be identified.

Acknowledgments

School of Medicine

Clinical and Translational Science Center

Cancer Center

Mouse Metabolic Phenotyping Center

Kit S. Lam, M.D., Ph.D.

(Biochem & Mol Medicine)

Michael A. Rogawski, M.D., Ph.D.

(Neurology)