



Innovative Medicines Initiative

# Why do we need stem cells to help us make safer medicines?



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**MIP-DILI Consortium**

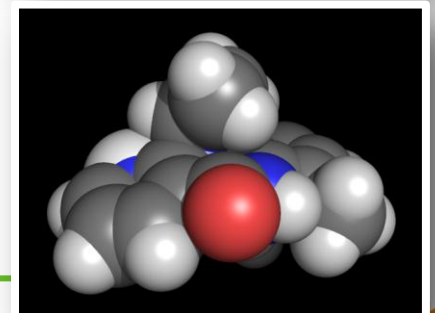


# Drug-Induced Liver Injury

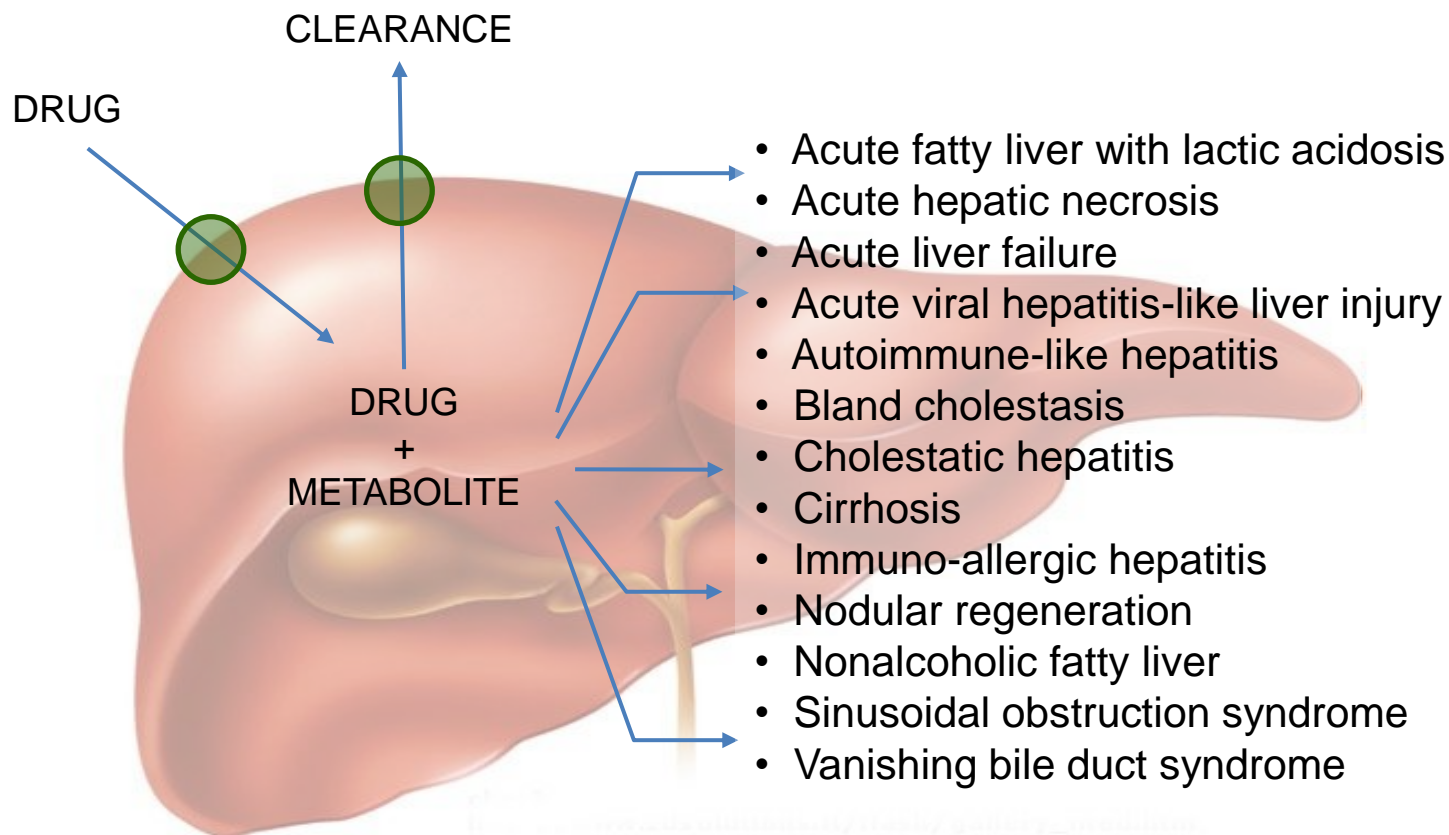
*a significant problem for society* **imi!**

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- Dose-dependent
- Species-selective
- Selective individuals
- Idiosyncratic
- Immunological



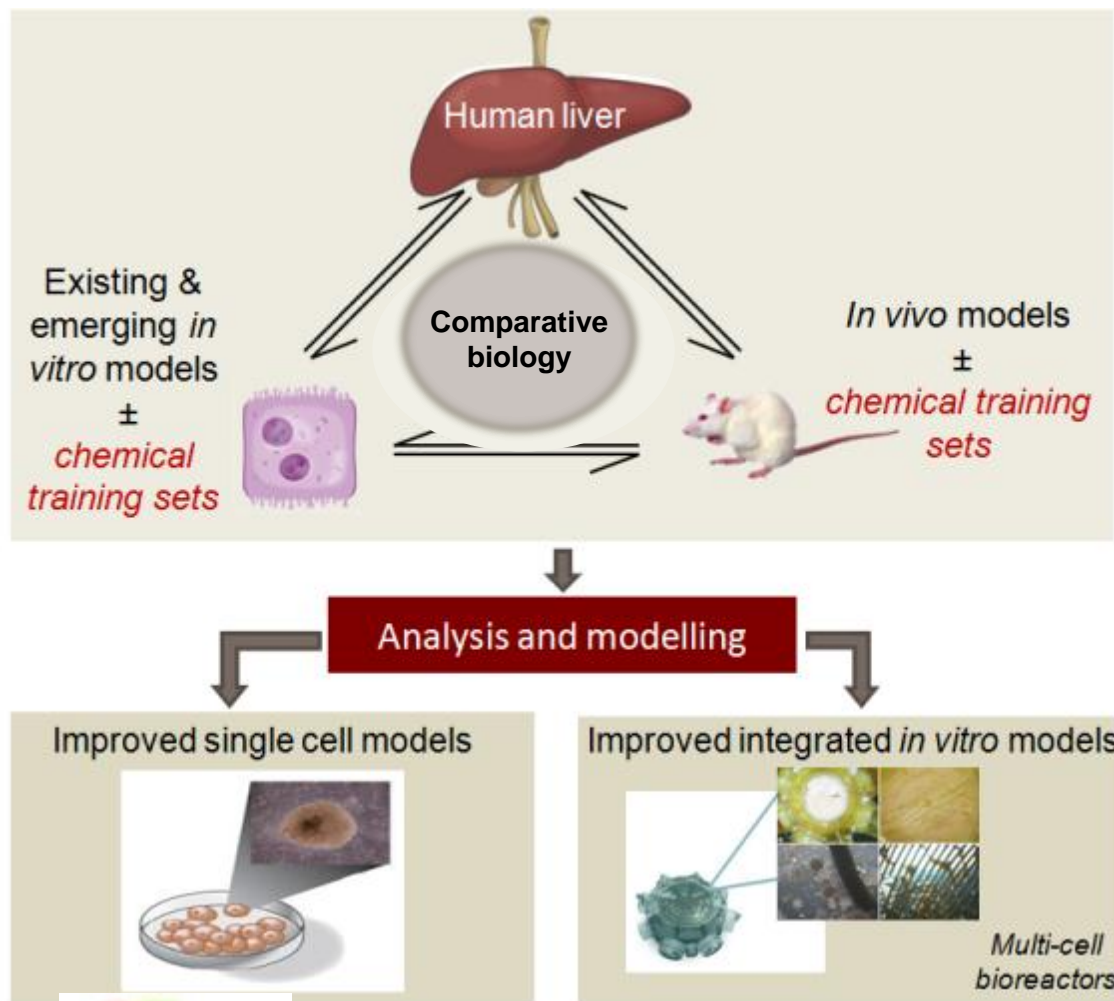
# Drug-Induced Liver Injury



**Multiple and variable forms of disease**  
**Multi-cellular and multifunctional organ**



# Predictive Models of Drug-Induced Liver Injury

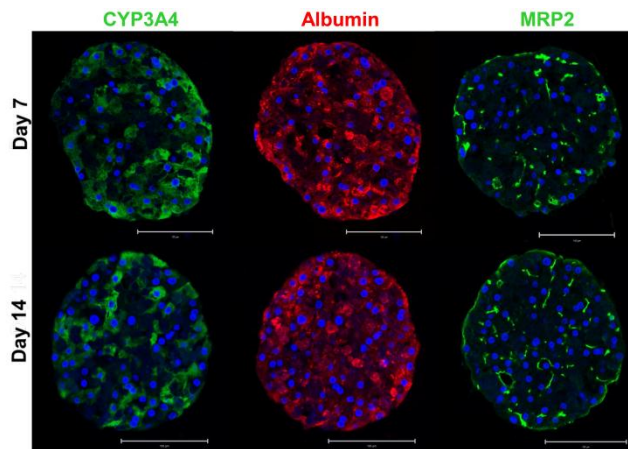
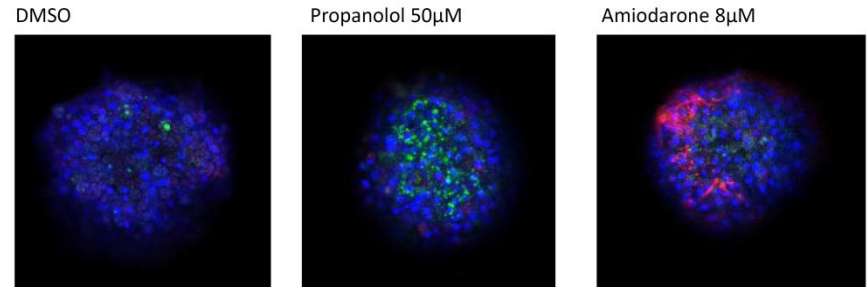
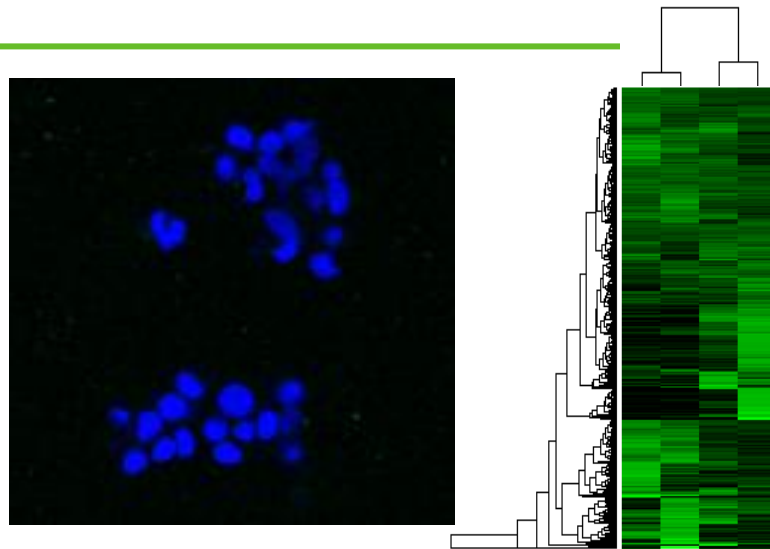


Is the TEST system fit for purpose?

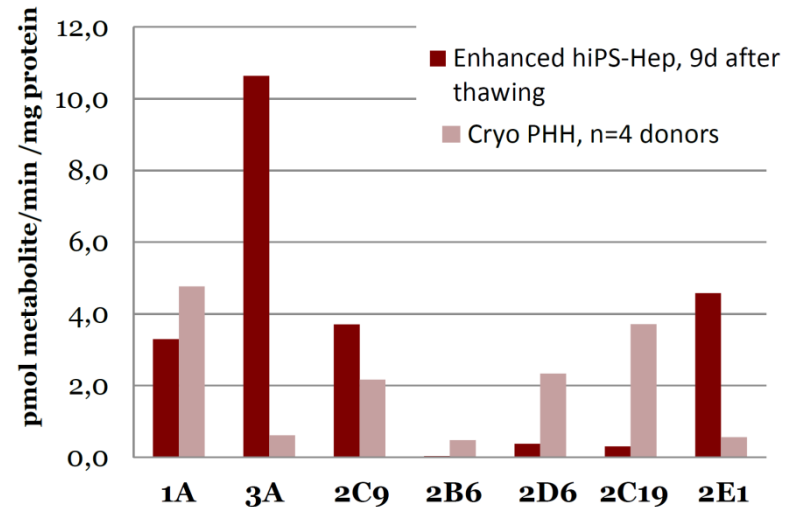
What purpose is the TEST system fit for?



# Laboratory Models of DILI



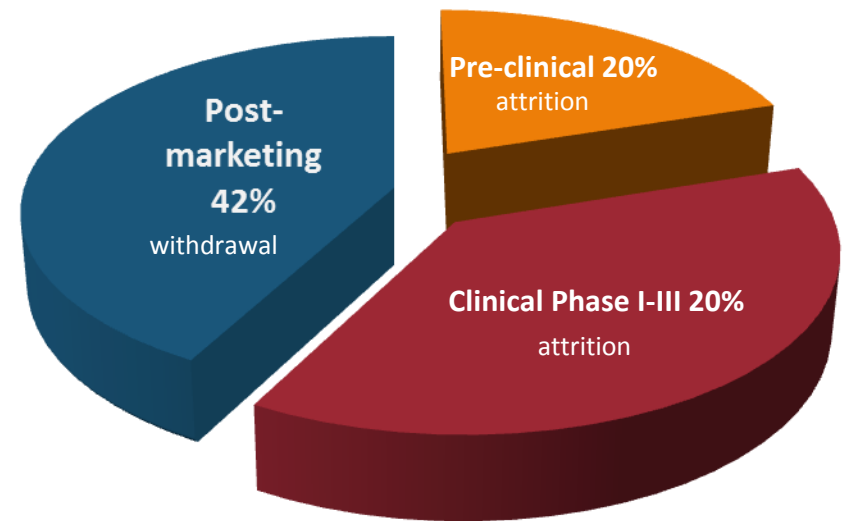
CYP activity - metabolite levels by LCMS



# Relevance to European Pharmaceutical Industry



- Major reason for:
  - regulatory actions against marketing approval
  - restriction of prescribing indications
  - removal from the market post-licensing
  - and can lead to attrition of potentially good medicines...therefore also a patient problem....



Challenge of DILI increases from non-clinical - to post-marketing

Stats: APBI 2008; Stevens and Baker 2008

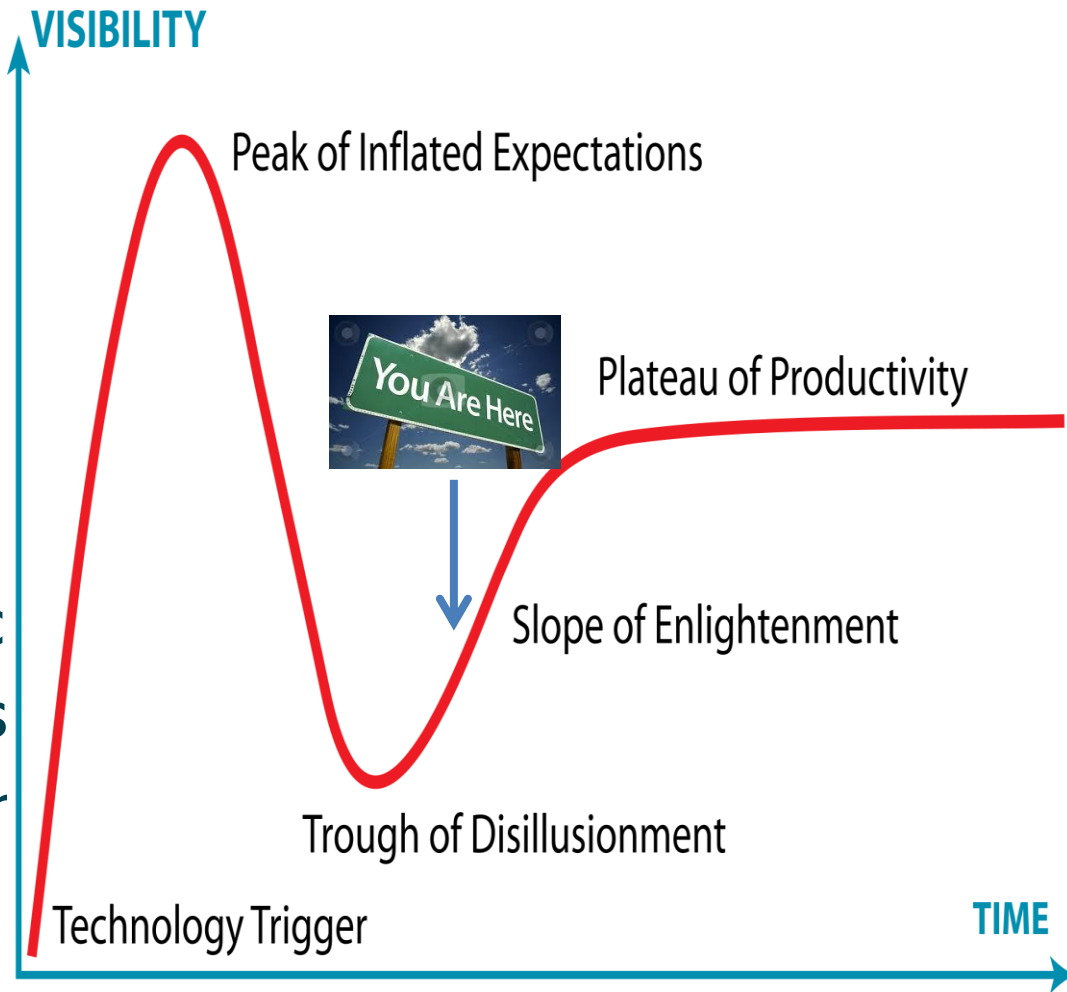


# Drug-Induced Liver Injury

*a significant problem for patients*



- Genetic associations:
- Can help to develop **stem cell models** for specific drug-induced liver injury
- not predictive but potentially mechanistic
- Other stem cell models using integrated reporter may be predictive



# Thank you

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