PharmaPendium for DMPK specialists

Mitigate drug-drug interaction safety risk though access to unprecedented data for FDA and EMA approved drugs

- Optimize first in man dose with precedent data on approved drugs
- Better **prioritize clinical DDI studies** and avoid doing unnecessary DDI trials
- **Improve clinical trial design** by inclusion/exclusion based on DDI risk
- Develop strategies to undestand and **mitigate safety risk** with unavoidable comedication

- Highest quality DMPK and safety data from full text regulatory documents and literature
- Drug–Drug Interaction Risk prediction across hundreds of drugs in line with FDA
- Experimental details and reviewer context with full text-searchable access to FDA and EMA regulatory documents
- Develop PBPK models with easy (API) access to high quality and validated data

Critical DMPK insights for drug candidate evaluation

To perform the most comprehensive risk-benefit assessment and drug candidate prioritization, you need access to the highest quality DMPK data and DDI analytics.

Regulatory documents contain the highest quality data that has been evaluated and approved of by regulatory authorities. Insights into the preclinical and clinical data of similar drugs are invaluable to support decisions in PK study design, translation of animal model results to human dosage and safety, and prediction of drug-drug interaction risk.

Drug	Enzyme/Transporter	Test system	Dose	Parameter	Value
Itraconazole	CYP3A4	Liver, microsomes	<=100 uM	Ki	0.085 uM
Itraconazole	AKR1C	Liver, microsomes	0.01–10 uM	IC50	0.055 uM
Itraconazole	CYP2E1	Liver, microsomes	<=100 uM	IC50	>50 uM
Itraconazole	CYP3A5*3	Liver, microsomes	Unreported	Ki	0.13 uM
Itraconazole	Enzyme unspecified	Not applicable	200 mg/day, 4 days	AUC ratio	2.6 fold

Figure 1. Snapshot of available data on the effect of the antifungal Itraconazole on metabolic enzymes. In total, 24 data columns and 95 PK parameters are available.

How PharmaPendium helps

PharmaPendium is the most comprehensive database on EMA and FDA approved drugs. PhD/MD level specialists extract high-quality, comparative pharmacokinetic, efficacy, metabolizing enzyme and transporter data on thousands of marketed drugs. Preclinical and clinical data is extracted from the full regulatory approval packages as well as the FDA Advisory committee documents and literature. This enables access to information that otherwise would have been missed.

PharmaPendium data can be retrieved with high precision due to Elsevier's expert biomedical taxonomies and data is easily exported for use in modeling workflows. Data is linked back to the original full text searchable source documents. This allows the best possible experimental design and streamlined approval based on precedent regulatory feedback.

Answer critical questions:

- *What drugs have a similar PK profile as my drug under development?*
- *What is the best experimental model and design to assess my PK parameters of interest?*
- *What is the drug-drug interaction risk for my drug under development?*
- *Which enzymes/transporters are involved in the metabolism of drugs in the same therapeutic class as mine?*

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Compliant DDI risk calculations to inform drug development decisions

PharmaPendium includes a mechanistic static DDI risk calculator (DDIRC) that supports identification of drug–drug interactions between a drug candidate and marketed drugs. It is compliant with the 2020 "In vitro Drug Interaction Studies CYP450 Enzyme and Transporters Mediated interactions FDA Guide". Predictions made were used to succesfully answer questions from several regulatory bodies, including the FDA, the EMA and Swissmedic. Because of the extensive marketed drug library, PharmaPendium DDIRC allows fast predictions across hundreds of potential co-medications.

Thereby, PharmaPendium provides high quality early predictions of drug-drug interactions to help avoid costly clinical DDI studies, optimize trial design and reduce the risk of unexpected post market adverse events

"The comprehensive data increases confidence in DDI predictions."

Department Head Pharmacokinetics and Drug Interaction, Global Pharma Company

PharmaPendium delivers access to:

- 4,6K+ drugs with data in PharmaPendium
- 2,0M+ extracted PK data records on over 95 PK parameters
- 427K+ extracted enzyme and transporter data records: drug as inducer, inhibitor or substrate
- 14M+ FDA post-market reports (FAERS)
- 2,8M+ pages of full text searchable FDA and EMA Approval documents
- 735K+ pages of FDA Advisory Committees Meetings documents
- Dedicated PK, Metabolizing enzymes and transporter data taxonomies
- Data on enzymes and transporters includes genetic variations and polymorphisms

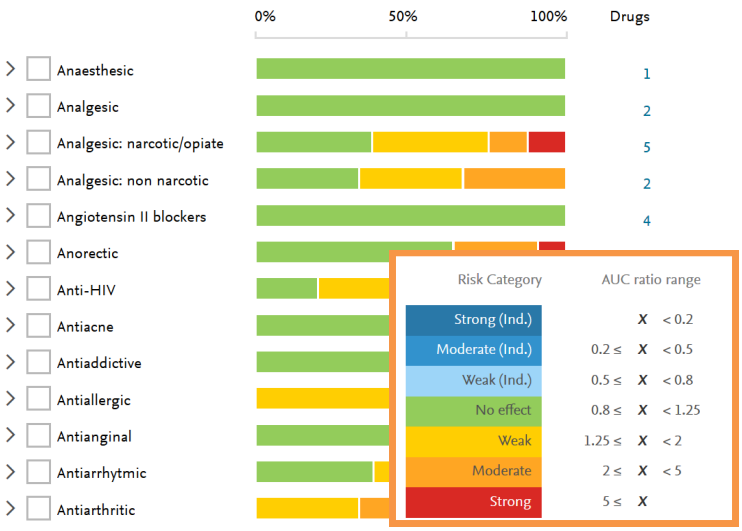

Figure 2. Selection of results of the PharmaPendium's DDI risk calculator where investigated drug is a victim of CYP2D6. Red indicates drug classes with high DDI risk (AUC ratio > 5)

Figure 3. Intuitive visualization and DDI result details support the confident investigation drug-drug interaction risk over a range of doses

PharmaPendium

PharmaPendium is designed to provide Pharmaceutical developers superior support for more rapid development of safer and more effective drugs. It helps DMPK scientists to fail drugs faster and make informed decisions in drug candidate safety risk assessment and clinical trial planning.

Contact us to learn more about PharmaPendium:

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