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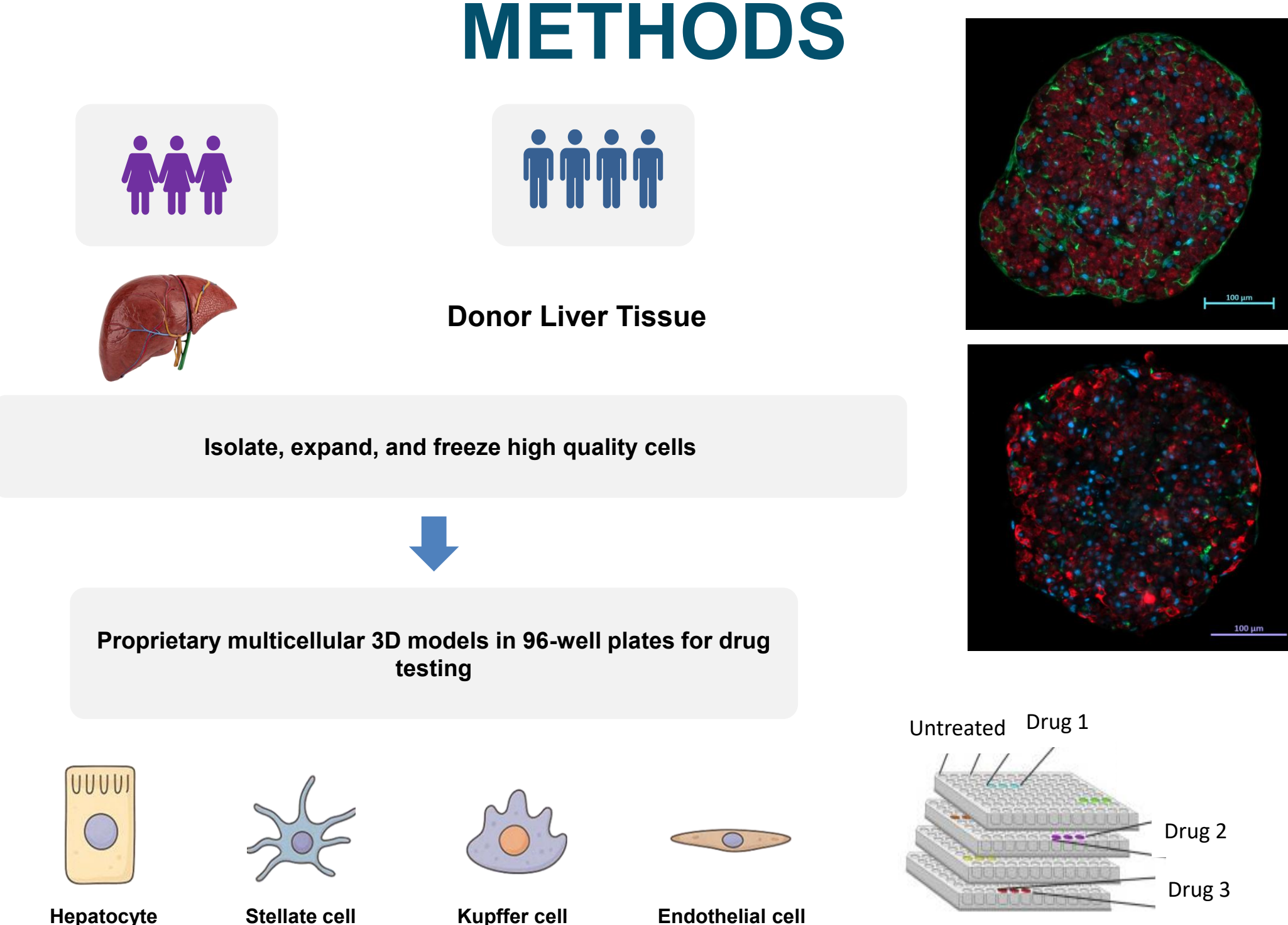
INTRODUCTION

Drug-induced liver injury (DILI) remains a major driver of late-stage failure in drug development, in part because conventional preclinical models can miss human-relevant toxicity responses. The 3D multicellular NAMkind™ Liver spheroid model addresses this gap by supporting liver-relevant function under repeat dose testing that is suitable for early preclinical screening. Because many hepatotoxicities emerge with sustained exposure, longer-term systems are important for revealing cumulative functional decline that is difficult to capture in short-duration assays. NAMkind™ Liver incorporates key hepatic cell types in a multicellular architecture to better reflect tissue-level interactions that influence stress responses, injury trajectories, and recovery. Liver responses are quantified using complementary endpoints across customizable dosing schedules, enabling interpretable profiling of hepatotoxic liability over time.

AIM

To validate NAMkind™ Liver for predicting small-molecule DILI risk using repeat-dose testing and complementary endpoints (ATP, Albumin, LDH) and demonstrate compound ranking by mapping response patterns to a clinically annotated reference panel.

METHODS



Flexible Dosing Schedule

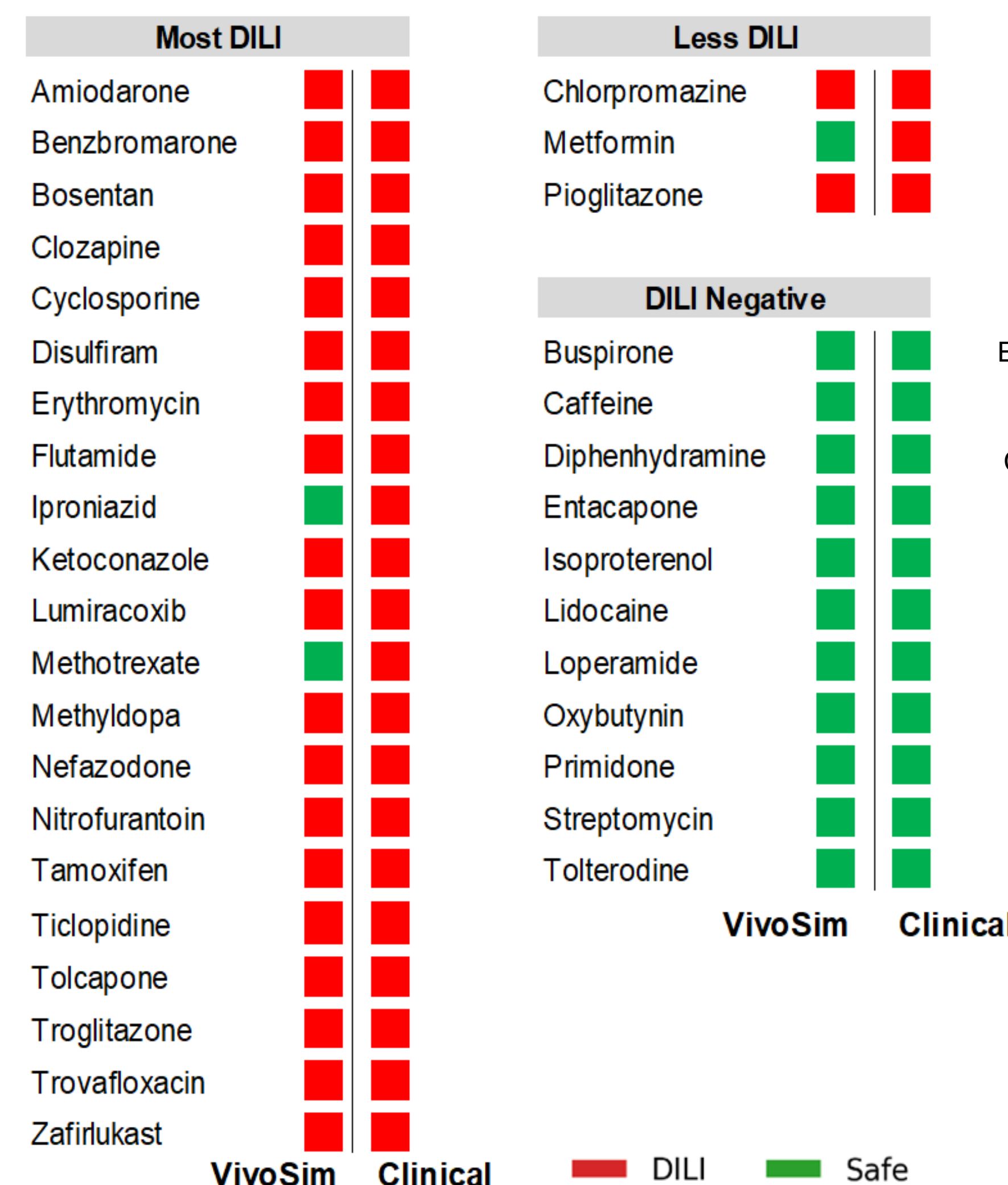
Customized treatment frequency and duration



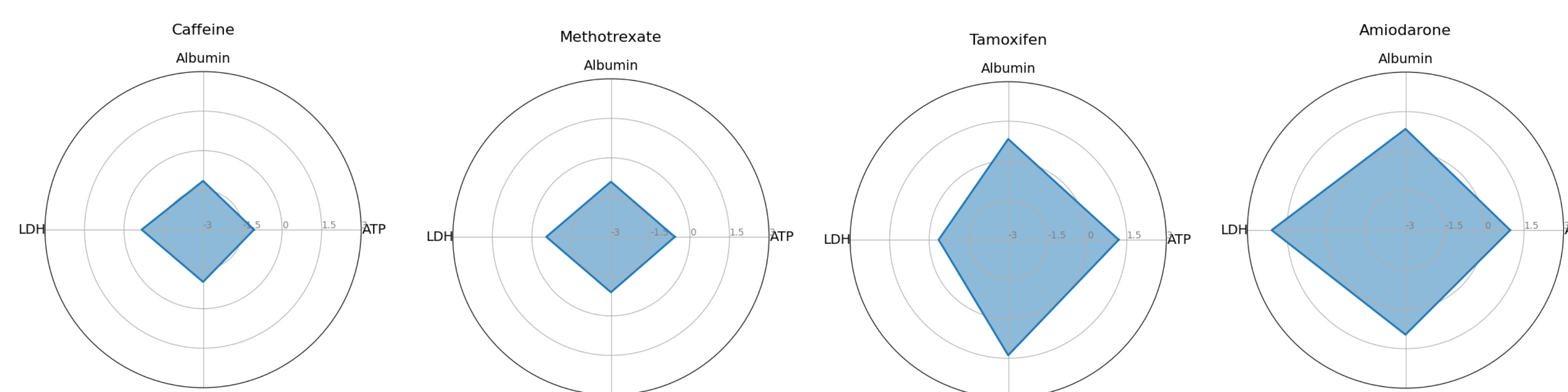
treatment frequency and duration from 7-21 days

Phenotype	Liver Assay
Tissue Health	ATP
Liver Injury	LDH
Hepatocyte function	Albumin

NAMkind™ Liver is Validated Against Human Clinical DILI for 35 Small Molecule Drugs



NAMkind™ Liver Captures a Wide Spectrum of DILI



Radar Plots of z scored AUC per log concentration. Our model captures a broad range of DILI severity, from subtle shifts to strong responses, enabling precise compound ranking.

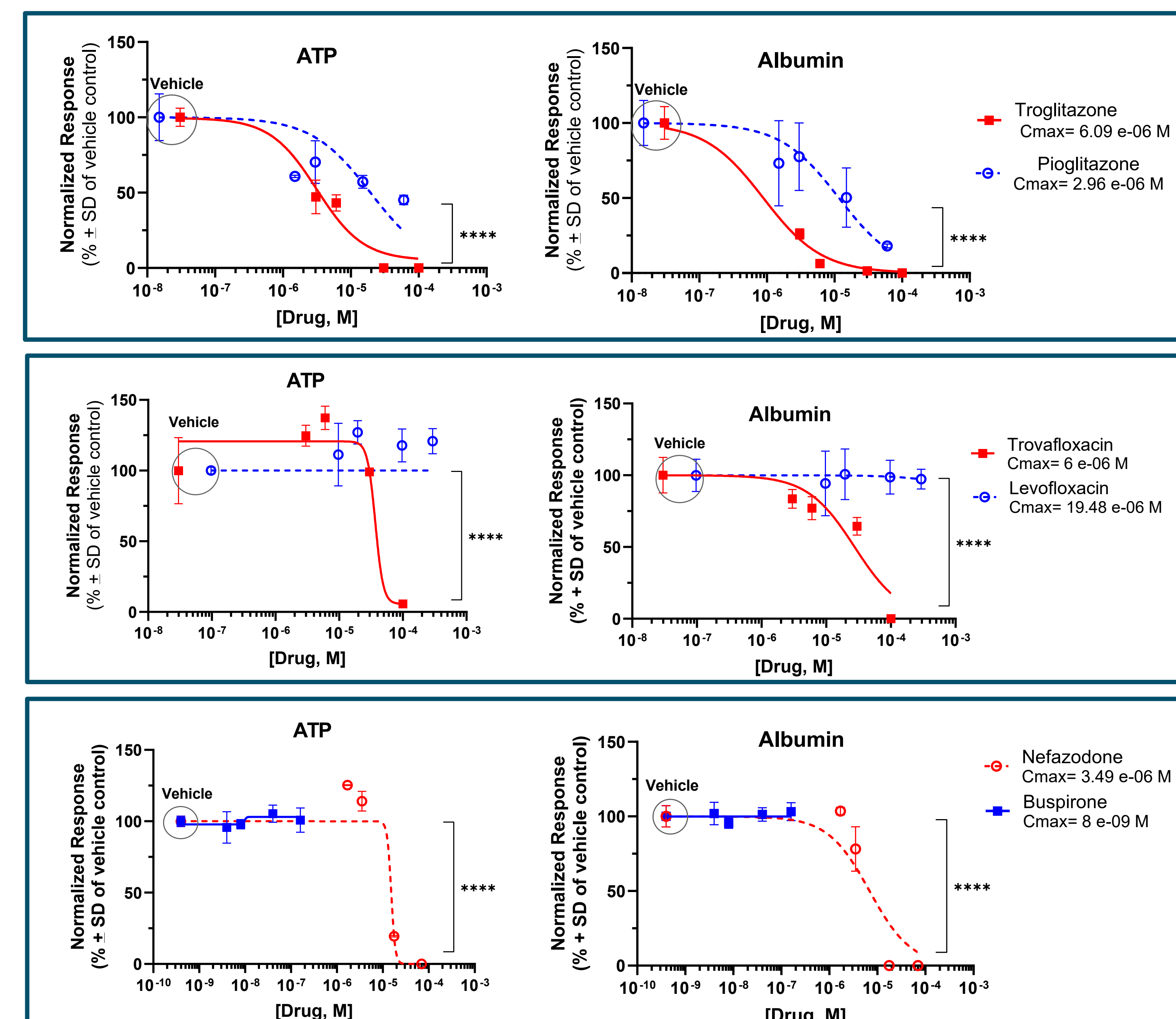
CONCLUSIONS

- VivoSim's NAMkind™ Liver is a human-relevant 3D platform for early liver safety prediction and lead optimization.
- In a clinically benchmarked small-molecule dataset, the model demonstrates strong predictive performance (91% accuracy, 88% sensitivity, 100% specificity).
- Multi-endpoint profiling across ATP/LDH/Albumin under repeat-dose schedules (7–21 days) supports mapping to a clinical reference panel.
- This framework enables compound ranking and within-class differentiation, including separation of structurally related analogs tested near plasma Cmax using z-score heatmaps and radar-plot signatures.

CONTACT INFORMATION

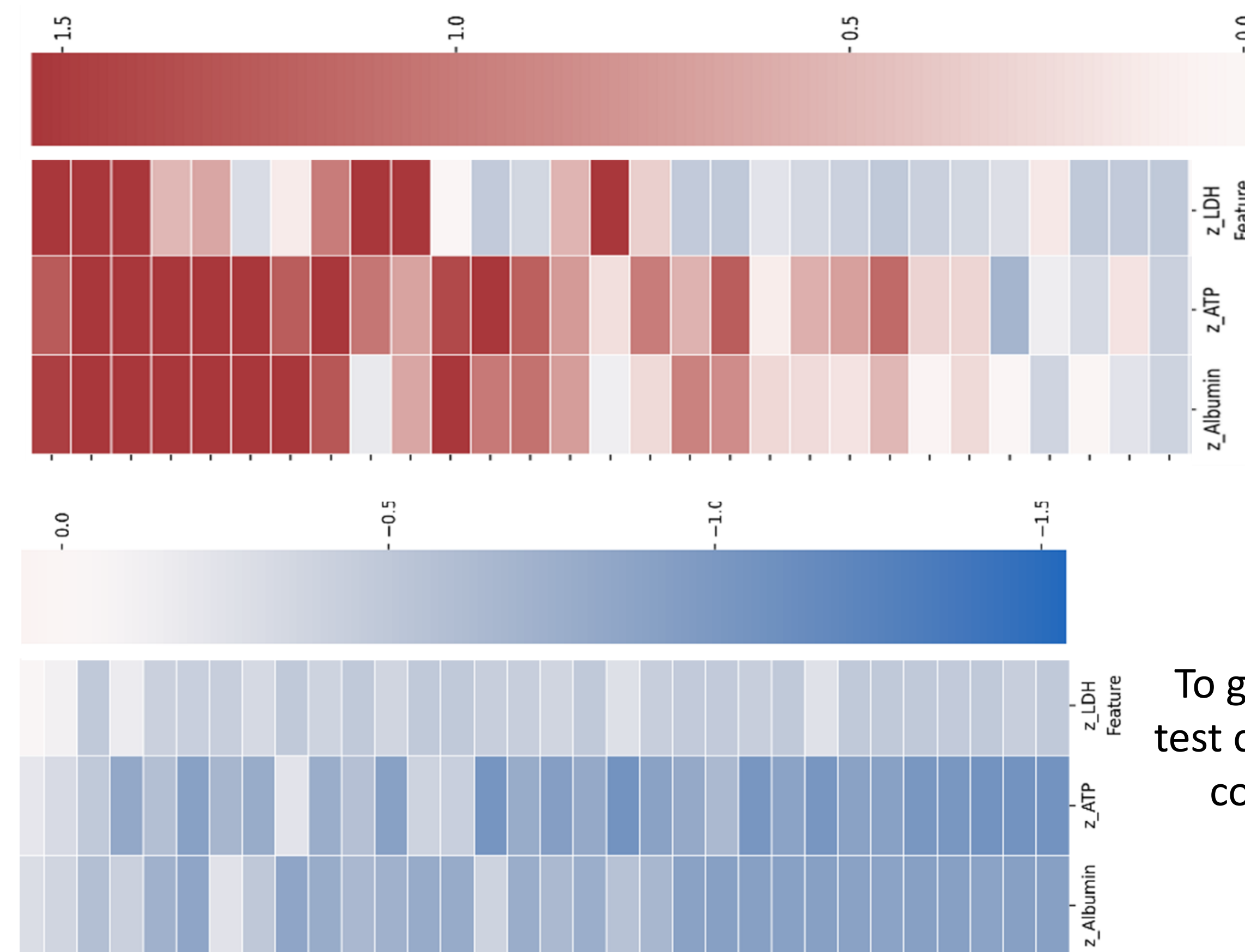
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NAMkind™ Liver Predicts Differential Toxicity Between Structurally Related Small Molecule Compounds



When tested at exposure levels anchored to plasma Cmax, structurally related compounds can separate into lower-signal profiles (blue) versus higher-signal profiles (red) across ATP and Albumin.

Ranking of Test Compounds Through Mapping Against A Clinical Reference Panel



Z-Score Heatmap

To guide prioritization and triage, test compounds are mapped to our continually expanding clinical reference panel.