Evaluation of differentiated cryopreserved HepaRG cells as a model for hepatic clearance and UGT activity

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Workflow & results

Prediction of hepatic clearance is a cornerstone of drug discovery and development activities and has been the subject of considerable investigation and development over the last two decades. Isolated hepatocytes as well as cryopreserved hepatocytes used today represent a good model of liver metabolism because they are able to perform the full range of known in vivo biotransformation, including phase I and phase II metabolism. Cytochrome P450 (CYP) enzymes are often involved in phase I reactions, while UDP-glucuronosyltransferases (UGTs) catalyze the most important phase II metabolic reaction, the glucuronidation.

Introduction

The aim of this study was to evaluate if differentiated cryopreserved HepaRG cells perform both phase I and phase II metabolism and compare the results with cryopreserved human hepatocytes.

Conclusions

In conclusion, the HepaRG cells had the same metabolic capacity as the hepatocytes for most of the drugs evaluated in this study and both phase I and phase II metabolic reactions were detected.