



MAINTAIN CYP ACTIVITY & INDUCIBILITY

INTRODUCTION

A relevant liver *in vitro* model should display CYP inducibility that mimics *in vivo* metabolic responsiveness to known modulators. This response of CYPs to induction is a critical parameter for predicting adverse drug reactions.

Materials required

- BIOMIMESYS® *Liver*
- Cryopreserved human hepatocytes
- HCM BulletKit (Lonza)
- Rifampicin, Omeprazole (inducers)
- Salicylamide (phase 2 enzymes inhibitor)
- Testosterone, Bupropion, Phenacetin (substrate)
- DNA quantitation kit, fluorescence assay using bisBenzimide (Sigma Aldrich)
- LC-MS/MS

Matrix properties

Translucent and porous

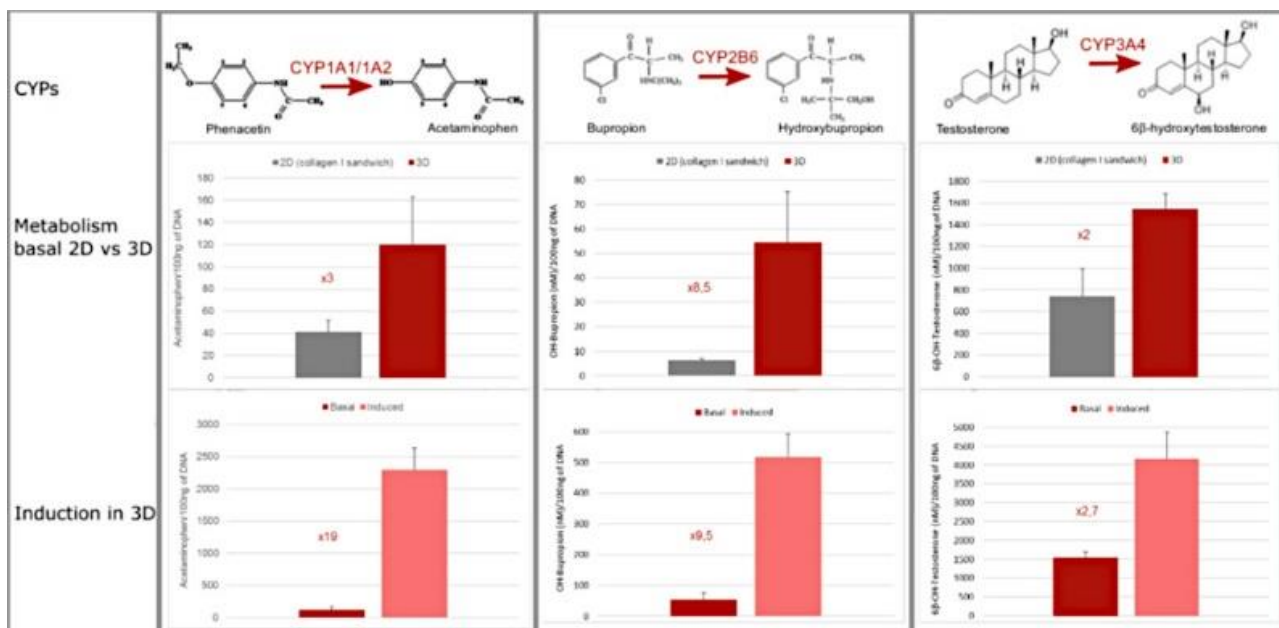
Method

- Expose hepatocytes to CYP-inducers for 48h with daily medium exchange
- Add specific substrates for 24h
- Measure the DNA quantity and quantify the metabolites by LC-MS/MS at day 6 for 2D culture (collagen I sandwich) and day 10 for 3D culture



RESULTS

Measurement of basal and induced activities of CYP1A1/1A2, CYP2B6 and CYP3A4 in cryopreserved human hepatocytes (n=3), with BIOMIMESYS® Liver



CONCLUSION

Basal and induced CYP1A1/A2, CYP2B6, CYP3A4 activities are higher in cryopreserved human hepatocytes using BIOMIMESYS® Liver compared to 2D culture conditions. BIOMIMESYS® Liver is a robust 3D culture system for drug-induced liver injury (DILI) studies.

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