Comparison of Different Cell Models in High Content Screening to Investigate Metabolism-Mediated Hepatotoxicity

**Introduction**
HepaRG is the most frequent reason for the withdrawal of an approved drug from the market, and it also accounts for up to 50% of cases of acute liver failure. Assays detecting mechanisms of drug metabolism-mediated hepatotoxicity allow early detection of drug-induced injuries.

A number of different cell models are currently available to investigate hepatotoxicity such as HepaRG and HepG2. HepaRG cells are derived from hepatocyte carcinoma, and have shown to have many of the metabolic properties of human liver. However, HepG2 cells are derived from Hepatocellular carcinoma and do not show the same properties as HepaRG cells.

**Method**
HepaRG or HepG2 cells were plated at 8x10^6 cells/well. Cells were then loaded with the relevant dye/antibody for each cell health marker. The plates were then scanned using a high throughput screening platform (HTS).

**Results and Discussion**
A number of different cell models are currently available to investigate hepatotoxicity such as HepaRG and HepG2. Using HepaRG and HepG2 cells in parallel will allow the characterization of the metabolic and toxic effects associated with drug metabolism.

**Conclusions**
HepaRG cells do not show a greater sensitivity to compounds expected to form toxic metabolites as shown by the HepaRG assay.

**References**