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演題: ヒト肝細胞キメラマウス由来新鮮肝細胞の輸送条件下における肝機能評価

発表者: 山崎 ちひろ (株式会社フェニックスバイオ)

日時: 11月13日 (金) 18:00 - 18:40

会場: Room I (タワーホール船堀 1F 展示ホール)

Title

Effect of storage conditions on the hepatic functions of cultured human hepatocytes isolated from chimeric mice with humanized livers (PXB-mice®)

Abstract

[Background]

Fresh human (h)-hepatocytes are regarded as the best *in vitro* model for xenobiotic metabolism and hepatotoxicity studies. However, an “on demand” supply of fresh h-hepatocytes from the same donor is not possible. Chimeric mice with humanized livers (PXB-mice®) are considered as a useful animal model for predicting h-type drug metabolism and toxicity, and are a good supply of fresh h-hepatocytes on demand. In a previous study, we showed that several hepatic functions, including CYP3A4 and MRP2 activity, were maintained for >2 weeks in h-hepatocytes isolated from PXB mice (PXB-cells®).

[Purpose]

Here, we aimed to investigate the effect of storage conditions during transportation on the hepatic functions of PXB-cells.

[Methods and Results]

PXB-cells were isolated from PXB-mice transplanted with commercially available cryopreserved h-hepatocytes (2-year-old Hispanic girl) using the collagenase perfusion method. PXB-cells were plated and stored under different temperature conditions (18–37°C) without a controlled CO₂ supply for 24 h. After storage, the cells were cultured under conventional culture conditions (5% CO₂/95% air, at 37°C) for 2 weeks, and their hepatic functions were analyzed. The results indicated that 24-h storage at 18–37°C did not affect the CYP3A4 activity or h-albumin production of PXB-cells after 2 weeks.

[Conclusion]

The results of this study suggest that PXB-cells can maintain their hepatic functions after 24-h transportation under controlled temperature without a CO₂ supply. We conclude that transported PXB-cells should be a useful tool for *in vitro* metabolic and hepatotoxicity studies in laboratories.