

User's Manual and Instructions

Rat Hepatocytes

Catalog Number: Z7030011

Introduction

Rat hepatocytes are epithelial cells freshly isolated from the liver of 50-day-old male Sprague-Dawley rat. Primary culture of Hepatocytes is ideally employed as cell-based platform set up for modern drug screening and for pharmaco-toxicological study purpose. The activity of liver cytochrome P450 induced by a variety of compounds, drugs, steroids, and carcinogens are the major focus for drug assessment and development. The majority of different compounds are metabolized and detoxified in liver by cytochrome P450 enzymes, therefore, hepatocytes provide excellent model for evaluating newly discovered drugs, studying drug-drug interactions on metabolism pathway and minimizing the timeline for therapeutic drug development. Freshly isolated hepatocytes are shipped in collagen-coated plate and covered with collagen gel and culture medium.

Specification and Characterization of Rat Hepatocyte

BioChain's hepatocytes are prepared from primary isolates, plated in collagen coated T-75 flasks, and delivered next day. Each flask contains $\sim 9 \times 10^6$ cells. Hepatocytes plated on collagen coated multi-well plates are available upon request. Rat hepatocytes are well-characterized and quality-controlled by different assays such as albumin staining, albumin qRT-PCR analysis, cytochrome P450 activity (CYP1A1/1B1 assay).



Figure 1. Morphology of rat hepatocyte cultured on collagen coated plates, 24 hr culture, 200X

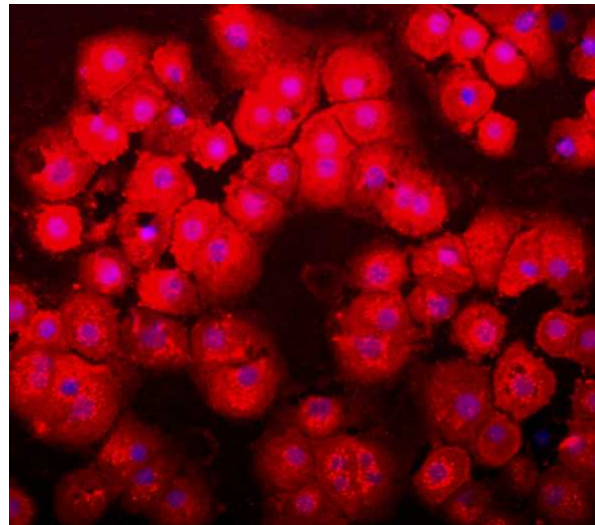
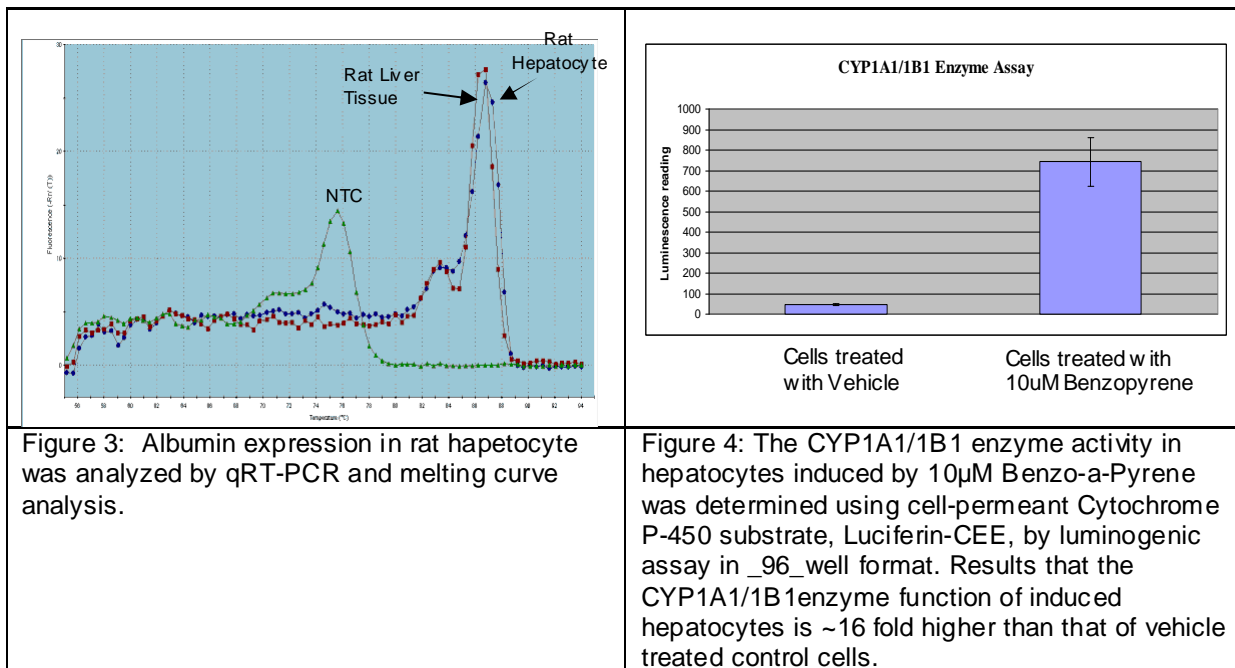


Figure 2. Immunostaining of rat hepatocyte with anti-albumin rabbit polyclonal antibody (red). Cell nuclei were stained blue (DAPI). 400x



Applications

Rat hepatocytes could be used and applied in research and pharmaceutical drug discoveries field such as

- Rat hepatocytes proliferation and apoptosis evaluation regulated by different growth factors and cytokines.
- Drug screening and discoveries.
- Drug toxicities evaluation
- Short- and long-term pharmacotoxicological research, drug metabolism and direct hepatotoxicity tests.

Shipping

Hepatocytes are plated in collagen-coated T75 flasks and shipped at ambient temperature. Hepatocytes require prompt handling upon arrival.

Instructions for culturing Rat Hepatocyte

I. Preparation of Rat Hepatocyte Culture medium

We recommend the use of BioChain's Hepatocyte Culture medium (Cat# Z7030012) for culturing our rat hepatocyte medium

1. Thaw hepatocyte culture medium supplement (Cat# Z7030011-2) at room temperature.
2. Prepare hepatocyte culture medium by adding the entire volume (5 ml) of hepatocyte culture medium supplement to the bottle (500 ml) of hepatocyte basal medium (Cat# Z7030012-1). BioChain's hepatocyte culture medium is serum-free medium. It does not contain antibiotics, but antibiotics may be added to the medium if contamination is a concern.
3. Prior to use, warm up a portion of the hepatocyte culture medium in a 37°C water bath.

II. Handling Hepatocytes

1. Upon arrival, wipe the outside of flasks with 70% ethanol.
2. Incubate hepatocytes at 37°C with 5% CO₂ and 95% air in a humidified incubator for 2 hr for recovery.
3. Warm hepatocyte culture medium in a 37°C water bath.
4. Change to fresh hepatocyte culture medium.

5. Rat hepatocytes are ready for experiments.

Related Products

Hepatocyte Culture medium (Cat# Z7030012).

Hepatocyte Basal Medium (Cat# Z7030012-1)

Hepatocyte Culture medium Supplement (Cat# Z7030012-2)

References

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- 7 Price, P.J. Preparation and use of rat-tail Collagen. *TCA Manual* 1:43-44 (1975).
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