

# Isolation and cultivation of rat liver epithelial cells

*Commonly used acronym: rLEC*

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## SCOPE OF THE METHOD

<b>Alternative method relates to</b>	Human health
<b>Alternative method is situated in</b>	Basic Research
<b>Type of alternative method</b>	In vitro - Ex vivo
<b>This method makes use of</b>	Animal derived cells / tissues / organs
<b>Species from which cells/tissues/organs are derived</b>	Rattus norvegicus
<b>Type of cells/tissues/organs</b>	rat liver epithelial cells

## DESCRIPTION

### Method keywords

liver

epithelial cells

isolation

### Scientific area keywords

liver research

liver cells

## **Method description**

Rat liver epithelial cells (rLEC) can be isolated from 8-day old male Sprague-Dawley rats. Briefly, small fragments of neonatal rat livers are incubated for 15 minutes with 4-(2-hydroxyethyl)-1-piperazine-ethanesulfonic acid (HEPES) buffered trypsin solution [0.25 % (v/v)] and washed twice with calcium- and magnesium-free phosphate-buffered saline (PBS) before plating. Elimination of contaminating fibroblasts is accomplished by taking advantage of their faster attachment to plastic culture dishes (plate-and-wait method). Growth medium consisted of Williams' E medium without glutamine, 10 % (v/v) fetal bovine serum (FBS), 0.68 mM L-glutamine, 50 µg/mL streptomycin sulphate, 7.33 IU/mL benzyl penicillin, 50 µg/mL kanamycin monosulphate and 10 µg/mL sodium ampicillin. Cell cultures are incubated at 37 °C in a 5 % CO<sub>2</sub> and 95 % air humidified atmosphere. Growth media is changed completely every 2 days.

## **Lab equipment**

Biosafety cabinet level 1

Cell incubator

Centrifuge

## **Method status**

History of use

Internally validated

Published in peer reviewed journal

## **PROS, CONS & FUTURE POTENTIAL**

### **Advantages**

Robust isolation and cultivation method for rat liver epithelial cells

## **REFERENCES, ASSOCIATED DOCUMENTS AND OTHER INFORMATION**

### **References**

De Kock J, Snykers S, Branson S, Jagtap S, Gaspar JA, Sachinidis A, Vanhaecke T, Rogiers V. (2012) A liver-derived rat epithelial cell line from biliary origin acquires hepatic functions upon sequential exposure to hepatogenic growth factors and

cytokines. Curr Med Chem. 19(26):4523-33

## Associated documents

### PARTNERS AND COLLABORATIONS

#### Organisation

**Name of the organisation** Vrije Universiteit Brussel

**Department** Pharmaceutical and Pharmacological Sciences (FARM)

**Specific Research Group or Service** In Vitro Toxicology and Dermato-cosmetology

**Country** Belgium

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