Isolation and cultivation of rat liver epithelial cells

Commonly used acronym: *rLEC*

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Organisation

Name of the organisation Vrije Universiteit Brussel (VUB)

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Specific Research Group or Service In Vitro Toxicology and Dermato-Cosmetology

Country Belgium

Geographical Area Brussels Region

SCOPE OF THE METHOD

The Method relates to	Human health
The Method is situated in	Basic Research
Type of method	In vitro - Ex vivo
Species from which cells/tissues/organs are derived	Rattus norvegicus

Type of cells/tissues/organs	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 ?broblasts 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 % CO2 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

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