Hepatic differentiation of rat liver epithelial cells

Commonly used acronym: rLEC-Hep

Contact person
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Organisation
Name of the organisation Vrije Universiteit Brussel (VUB)
Department Pharmaceutical and Pharmacological Sciences
Specific Research Group or Service In Vitro Toxicology and Dermato-Cosmetology
Country Belgium
Geographical Area Brussels Region

SCOPE OF THE METHOD

<table>
<thead>
<tr>
<th>The Method relates to</th>
<th>Human health</th>
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</thead>
<tbody>
<tr>
<td>The Method is situated in</td>
<td>Basic Research</td>
</tr>
<tr>
<td>Type of method</td>
<td>In vitro - Ex vivo</td>
</tr>
<tr>
<td>Species from which cells/tissues/organs are derived</td>
<td>Rattus norvegicus</td>
</tr>
<tr>
<td>Type of cells/tissues/organs</td>
<td>rat liver epithelial cells</td>
</tr>
</tbody>
</table>

DESCRIPTION

Method keywords
liver
epithelial cells
Hepatocytes
cellular differentiation

**Scientific area keywords**

liver research
cellular differentiation

**Method description**

Rat liver epithelial cells are cultivated at 100% confluency on 100 µg/mL rat tail collagen type I coated culture dishes in base medium and sequentially exposed to hepatogenic growth factors and cytokines. Base medium consisted of William's E medium without glutamine supplemented with 7.33 IE/mL benzyl penicillin, 50 µg/mL streptomycin sulphate, 1 mg/mL linoleic-acid bovine serum albumin, 0.1 mM L-ascorbic acid, 0.03 mM nicotinamide, 0.25 mM sodium pyruvate and 1.623 mM L-glutamine. The hepatic differentiation procedure is as follows: days 0–2: base medium + 2% (v/v) FBS + 20 ng/mL HGF; days 3–5: base medium + 30 ng/mL HGF + 0.5% (v/v) ITS; day 6–8: base medium + 30 ng/mL HGF + 0.25 % ITS + 20 µg/L dex; days 9–11: base medium + 20 ng/mL HGF + 20 µg/L dex; days 12–14: base medium + 10 ng/mL HGF + 20 µg/L dex + 10 ng/mL OSM and from day 15 onwards: base medium + 20 µg/L dex + 10 ng/mL OSM. Cell cultures are incubated at 33 °C in a 5 % CO2 humidified atmosphere. Media were completely changed every three days, unless otherwise defined.

**Method status**

History of use
Internally validated
Published in peer reviewed journal

**PROS, CONS & FUTURE POTENTIAL**

**Advantages**

Homogenous population of rat hepatocyte-like cells with biotransformation capacity comparable to primary rat hepatocytes.
REFERENCES, ASSOCIATED DOCUMENTS AND OTHER INFORMATION

References