Measurement of urea synthesis in cultured stem cell-derived hepatocyte-like cells

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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

The Method relates to	Human health
The Method is situated in	Basic Research
Type of method	In vitro - Ex vivo
Specify the type of cells/tissues/organs	Human stem cells

DESCRIPTION

Method keywords

Stem cells

Hepatocytes

Hepatotoxicity

urea

Scientific area keywords

hepaticdifferentiation

hepatic toxicity

Hepatotoxicity

Cell culture

cellular programming

Method description

The present standard procedure describes a protocol for measuring the urea concentration in supernatant of human stem cell-derived hepatocyte-like cells. This procedure relies on a chromogenic reagent that forms a colored complex specifically with urea. The latter can be measured and is directly proportional to the urea concentration in the sample.

Lab equipment

Biosafety cabinet;

Multiplate reader;

Thermostated bath.

Method status

History of use

Internally validated

PROS, CONS & FUTURE POTENTIAL

Advantages

The current protocol represents a simple and direct method to quantitatively measure the urea concentration in human stem cell-derived hepatocyte-like cell cultures. This assay has no harmful effect on the cultured cells. Therefore, after incubation of the cells with the substrate (ammonium chloride (NH4Cl)), the cultures can be maintained.

Future & Other applications

Can be applied to other types of *in vitro* systems of hepatocytes.

REFERENCES, ASSOCIATED DOCUMENTS AND OTHER INFORMATION

References

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Associated documents

Urea synthesis.doc

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