Functionality Testing by Measuring Urea Synthesis

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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	parenchymal liver cells, stem cell-derived hepatocyte-like cells

DESCRIPTION

Method keywords

urea
liver

Scientific area keywords

liver research
toxicity
in vitro cell culture
drug development
hepatic in vitro model

Method description

Liver functionality can be monitored by the urea synthesis. In culture medium the measurement of urea synthesis relies on a chromogenic reagent that specifically forms a colored complex with urea. The concentration of this complex between urea, o-phthalaldehyde and N-(1-naphthyl) ethylenediamine can be measured colorimetrically at 520nm and is directly proportional to the urea concentration in the sample.

Lab equipment

Biosafety cabinet ;
Incubator ;
96-well plates ;
Multiplate reader.

Method status

History of use

PROS, CONS & FUTURE POTENTIAL

Advantages

Quick and easy to use.

REFERENCES, ASSOCIATED DOCUMENTS AND OTHER INFORMATION

References

Henkens et al. Modulation of CYP1A1 and CYP2B1 expression upon cell cycle progression in cultures of primary rat hepatocytes. Toxicol In Vitro. 2007 Oct;21(7):1253-7

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