

## Functionality Testing by Measuring Urea Synthesis

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### **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

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, ophthalaldehyde 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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