

### Measurement of Cytochrome P450 Enzyme Induction and Inhibition in human 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	parenchymal liver cells, stem cell-derived hepatocyte- like cells

## DESCRIPTION

#### Method keywords

in vitro hepatic cell line luminescence liver enzyme viability test

#### Scientific area keywords

Toxicology Drug metabolism drug screening in vitro cell culture

#### Method description

By the use of monolayer cultures as an *in vitro* system, the effects of drugs on CYP3A activity can be evaluated. It relies on the use of a luminogenic CYP3A substrate, namely luciferin-6?-pentafluorobenzylether (luciferin- PFBE). Upon biotransformation by CYP3A,

luciferin-PFBE is converted into luciferin, which generates light when combined with a luciferin detection reagent. The normalization of the data relies on the cell number and cell viability and is evaluated by another bioluminescence reaction in which the levels of adenosine- 5?-triphosphate (ATP), the basic energy source of living cells, is measured.

### Lab equipment

Biosafety cabinet; Luminescence plate reader; White opaque; 96-well plates.

## Method status

History of use

# **PROS, CONS & FUTURE POTENTIAL**

## Advantages

Quick and easy to use.

# REFERENCES, ASSOCIATED DOCUMENTS AND OTHER INFORMATION

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