Measurement of the extracellular release of lactate dehydrogenase in cultured primary rat hepatocytes

Commonly used acronym: *LDH assay*

Created on: 05-03-2019 - Last modified on: 28-02-2022

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Organisation

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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
Species from which cells/tissues/organs are derived	Rat
Type of cells/tissues/organs	Primary rat hepatocytes

DESCRIPTION

Method keywords

Hepatotoxicity
Hepatocytes
cytotoxicity
LDH

Scientific area keywords

Toxicology
Hepatotoxicity
Primary hepatocytes
cytotoxicity

Method description

This method assesses general cytotoxicity. Upon disruption of the cell membrane, lactate dehydrogenase (LDH) is released. LDH catalyzes the interconversion of pyruvate and

lactate with concomitant interconversion of reduced (NADH) and oxidized (NAD+) nicotinamide adenine dinucleotide. The principle of the assay described in the current standard operating procedure is based on this reaction. In particular, the consumption of NADH is spectrophotometrically assessed and serves as a measure that is proportional to the LDH activity.

Lab equipment

Spectrophotometer

Method status

History of use

PROS, CONS & FUTURE POTENTIAL

Advantages

Easy-to-apply method

Challenges

Cell membrane damage is a rather late and rough marker of cytotoxicity that mainly indicates necrosis and that may yield false negative results

REFERENCES, ASSOCIATED DOCUMENTS AND OTHER INFORMATION

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