

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

Commonly used acronym: LDH assay

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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 |
| 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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