

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

*Commonly used acronym: LDH assay*

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## SCOPE OF THE METHOD

<b>Alternative method relates to</b>	Human health
<b>Alternative method is situated in</b>	Basic Research
<b>Type of alternative method</b>	In vitro - Ex vivo
<b>This method makes use of</b>	Animal derived cells / tissues / organs
<b>Species from which cells/tissues/organs are derived</b>	Rat
<b>Type of cells/tissues/organs</b>	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<sup>+</sup>) 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**

### **References**

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## Associated documents

## PARTNERS AND COLLABORATIONS

### Organisation

**Name of the organisation** Vrije Universiteit Brussel

**Department** Pharmaceutical and Pharmacological Sciences (FARM)

**Specific Research Group or Service** In Vitro Toxicology and Dermato-cosmetology

**Country** Belgium

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