

## Cytokinesis-block micronucleus method

**Commonly used acronym:** CBMN

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### Contact person

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### Organisation

**Name of the organisation** Université Catholique de Louvain (UCL)

**Department** The Louvain Centre for Toxicology and Applied Pharmacology

**Country** Belgium

**Geographical Area** Brussels Region

## SCOPE OF THE METHOD

<b>The Method relates to</b>	Human health
<b>The Method is situated in</b>	Basic Research
<b>Type of method</b>	In vitro - Ex vivo
<b>Species from which cells/tissues/organs are derived</b>	Rat
<b>Type of cells/tissues/organs</b>	Type II lung epithelial cells (RLE)

## DESCRIPTION

### Method keywords

DNA damage  
chromosomal lesions  
lung epithelial cells  
fluorescence microscope

### Scientific area keywords

genotoxicity  
mutagenicity  
Toxicology  
inhaled particles

### Method description

The cytokinesis-block micronucleus method allows assessing the presence of DNA damage at the chromosome level. It is an essential part of toxicology, because mutation is a crucial event in carcinogenesis. The capacity of inhaled particles to induce

irreversible mutations in type II lung epithelial cells is evaluated in this assay. By exposing type II lung epithelial cells to particles and blocking the cytokinesis, micronuclei can be scored in divided cells and are the reflection of mutations induced by particles.

### **Lab equipment**

Fluorescence microscope

### **Method status**

Validated by an external party (e.g. OECD, EURL ECVAM,...)

## **PROS, CONS & FUTURE POTENTIAL**

### **Advantages**

Great predictivity ;  
Sensitivity ;  
Precision ;  
Simple.

### **Modifications**

Other cell lines can be used

## **REFERENCES, ASSOCIATED DOCUMENTS AND OTHER INFORMATION**

### **References**

Fenech, M., Cytokinesis-block micronucleus cytochrome assay. Nat Protoc, 2007. 2(5): p. 1084-104.

Fenech, M., The in vitro micronucleus technique. Mutat. Res, 2000. 455(1-2): p. 81-95.

### **Associated documents**

[OECD 487.pdf](#)

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