

# Advanced pyrogen/allergen detection through impedance analysis

Created on: 08-02-2022 - Last modified on: 09-02-2022

## Contact person

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## Organisation

**Name of the organisation** CellSine

**Department -**

**Country** Belgium

**Geographical Area** Flemish Region

## SCOPE OF THE METHOD

|   |                             |
|---|-----------------------------|
| <b>The Method relates to</b>                    | Animal health, Human health |
| <b>The Method is situated in</b>                | Basic Research              |
| <b>Type of method</b>                           | In vitro - Ex vivo          |
| <b>Specify the type of cells/tissues/organs</b> | Cells of the immune system  |

## DESCRIPTION

### Method keywords

alternative to rabbit pyrogen test

advanced impedance spectroscopy

### **Scientific area keywords**

allergy

pyrogenicity

### **Method description**

Fever-inducing substances need to be traced in medical packaging material. To do so, in the past, rabbits were often exposed to these substances. Causing enormous amounts of animal suffering. Nowadays this test has been largely replaced by the so-called LAL (Limulus amebocyte lysate) test, which uses the blood of the horseshoe crab. This has however led to severe endangerment of this prehistoric species. It is for this reason that mainly colorimetric methods have been developed to detect secondary messenger molecules that are released after immune cells are exposed to pyrogens. However, these *in vitro* detection methods are expensive and require many hours of preparatory work. In comparison, CellSine's detection method, based on broad-spectrum electrical impedance measurements, is label-free and requires no additional chemicals or pretreatments. Therefore it can be a viable alternative for the LAL test.

### **Lab equipment**

Basic laboratory equipment (biosafety cabinet, mammalian cell incubator, ...)

### **Method status**

Still in development

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

### **Advantages**

- Label-free;
- Real-time;
- Easy assay development;

- Costs.

## REFERENCES, ASSOCIATED DOCUMENTS AND OTHER INFORMATION

### References

Anticancer activity study of chromone and coumarin hybris using electrical impedance spectroscopy  
(Bouhenna et al., 2018)

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**Vlaanderen**  
verbeelding werkt

