Advanced pyrogen/allergen detection through impedance analysis

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Organisation

Name of the organisation CellSine
Department -
Country Belgium
Geographical Area Flemish Region

SCOPE OF THE METHOD

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