Activity study of possible endocrine disruption via the TRb or PPARy2 receptors by using CALUX cell systems

Commonly used acronym: *TRb and PPARy2 CALUX*

Created on: 03-05-2022 - Last modified on: 05-05-2022

Organisation

Name of the organisation Sciensano
Department Chemical and physical health risks
Country Belgium

Partners and collaborations

BDS

SCOPE OF THE METHOD

The Method relates to	Human health
The Method is situated in	Basic Research
Type of method	In vitro - Ex vivo
Specify the type of cells/tissues/organs	U2-OS cells (human osteoblasts), stably transfected with the receptor and a luciferase reporter construct

DESCRIPTION

Method keywords

cell culture
CALUX
reporter gene assays

Scientific area keywords

Endocrine disruptors
obesogens
PPARy
TRb
mixtures
concentration addition

Method description

The CALUX® system (Chemically Actived LUciferase eXpression) of Bio Detection Systems (BDS, Amsterdam, the Netherlands) uses U-2 OS cells (human osteoblast) that are stably transfected with human TRb or human PPARg2 (BDS, Amsterdam) and a luciferase reporter construct under the control of a receptor specific response element.

Through measuring the activity of chemical compounds on these cell lines, we can determine if they can potentially have endocrine activity. The activity of mixture of chemicals can also be determined in these cell systems.

Lab equipment

Cell incubator,
Safety cabinet,
Fluorimeter.

Method status

Published in peer reviewed journal

PROS, CONS & FUTURE POTENTIAL

Advantages

Speed (vs *in vivo* experiments),
Useful for prioritisation.

Challenges

Difficult to extrapolate to the *in vivo* situation because of Absorption, Distribution, Metabolism, and Excretion (ADME).

REFERENCES, ASSOCIATED DOCUMENTS AND OTHER INFORMATION

References

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