

# Activity study of possible endocrine disruption via the TRb or PPAR $\gamma$ 2 receptors by using CALUX cell systems

*Commonly used acronym: TRb and PPAR $\gamma$ 2 CALUX*

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## Organisation

**Name of the organisation** Sciensano

**Department** Chemical and physical health risks

**Country** Belgium

## Partners and collaborations

BDS

## 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>Specify the type of cells/tissues/organs</b> | 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

PPAR $\gamma$

TRb

mixtures

concentration addition

### **Method description**

The CALUX® system (Chemically Activated 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 PPAR $\gamma$ 2 (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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