

# Flow-cytometric determination of neutral lipids

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## **Contact person**

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# Organisation

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Specific Research Group or Service In Vitro Toxicology and Dermato-Cosmetology

**Country** Belgium

Geographical Area Brussels Region

# SCOPE OF THE METHOD

The Method relates to	Human health
The Method is situated in	Translational - Applied Research
Type of method	In vitro - Ex vivo
Specify the type of cells/tissues/organs	Human skin-derived adults stem cells

#### DESCRIPTION

## Method keywords

Flow-cytometry neutral lipids quantitative fluorimetric in vitro

### Scientific area keywords

Steatosis stem cells lipids lipid accumulation

### **Method description**

Using this method you can measure the (relative) lipid load in human skin-derived stem cells differentiated towards hepatic cells. This method could also be applied on other cell types (e.g. HepG2), since it is based on the following publication: "M. T. Donato et al., Chem. Biol. Interact. 181, 417–423 (2009)." Briefly: 1. Aspirate medium from the cell

culture 2. Incubate 10' with TrypLE (200  $\mu$ L/well for 24- multiwell format) 3. Add 500  $\mu$ L pre-warmed PBS (37°C) to every well and harvest the sample 4. Rinse with 500  $\mu$ L PBS 5. Centrifigate according to the cell type 6. Resuspend in 1 mL PBS (containing BODIPY(TM) 1:2500 (see publication above)) on ice 7. 5' before measuring + 1  $\mu$ L Hoechst (+homogenize by pipetting) 8. Dilute 1:10 (PBS (4 °C)) before measuring to limit background signal 9. Measure signal (up to 100.000 events)

## Lab equipment

Flow-cytometer; Cell culture equipment; Biosafety cabinet.

#### Method status

Internally validated

# PROS, CONS & FUTURE POTENTIAL

### **Advantages**

Fast.

### Challenges

Measuring many samples can be time-consuming.

#### **Modifications**

You can use also other cell types.

### **Future & Other applications**

Drug testing (anti-steatotic drugs); Assessing drug-induced liver steatosis (*in vitro*).

## REFERENCES, ASSOCIATED DOCUMENTS AND OTHER INFORMATION

#### References

M. T. Donato et al., Chem. Biol. Interact. 181, 417–423 (2009)

R. M. Rodrigues et al., Stem Cells Dev. 23, 44–55 (2014)

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