

# Differentiation of ovarian stromal cells to steroidogenic theca interna cells

Created on: 20-02-2023 - Last modified on: 20-03-2023

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## Organisation

**Name of the organisation** Université Catholique de Louvain (UCL)

**Department** IREC

**Country** Belgium

## 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

## DESCRIPTION

### Method keywords

theca cells

differentiation

isolation

Ovarian cells

### Scientific area keywords

fertility restoration

artificial ovary

Reproduction

Human ovarian tissue

### **Method description**

We aim to differentiate ovarian cells isolated from postmenopausal ovaries into steroidogenic theca interna cells. For this purpose, cryopreserved ovarian cortex fragments are used to isolate ovarian cells. These cells are cultured on collagen and supplemented with growth factors defined to promote differentiation into theca interna cells. After 8 days of culture, theca interna cells are obtained, characterized by steroidogenic enzymes such as CYP17A1, and by the production of steroidogenic hormones.

### **Lab equipment**

- Tissue chopper;
- Biosafety cabinet;
- Incubator;
- Centrifuge;
- Water bath with shaker

### **Method status**

Published in peer reviewed journal

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

### **Advantages**

*In vitro* differentiation and culture of theca interna cells.

### **Challenges**

Theca cells are obtained after 8 days of culture, however, they lose their characteristics when kept in culture for a longer time period.

### **Modifications**

Yes, the pool of cell types within ovarian cells can be reduced to only those that undergo differentiation.

## REFERENCES, ASSOCIATED DOCUMENTS AND OTHER INFORMATION

### References

P Asiabi, M M Dolmans, J Ambroise, A Camboni, C A Amorim, In vitro differentiation of theca cells from ovarian cells isolated from postmenopausal women, Human Reproduction, Volume 35, Issue 12, December 2020, Pages 2793–2807, <https://doi.org/10.1093/humrep/deaa246>

### Associated documents

[Asiabi et al \(2020\).pdf](#)

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