

# Bone Marrow-Derived Macrophages isolation and differentiation

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## 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>This method makes use of</b>	Animal derived cells / tissues / organs
<b>Species from which cells/tissues/organs are derived</b>	Mus musculus - C57BL/6J
<b>Type of cells/tissues/organs</b>	Bone marrow derived macrophages

## DESCRIPTION

### Method keywords

BMDMs

macrophage polarization

macrophages

isolation

Culturing

### **Scientific area keywords**

Immunometabolism

Immunology

neurodegeneration

neuroinflammation

### **Method description**

Isolation Femoral and tibial bones are isolated from 10-12 weeks old C57BL/6J mice. After cutting the bone's ends, the bone marrow is flushed out using a 23G syringe with PBS into a 50ml falcon tube. After centrifugation cells are re-suspended in FCS (0.5ml/mouse leg). Differentiation 0.5ml of the cells suspension is added to 20ml BMM medium (15% LCM, 10% FCS and 0.5% P/S in RPMI1640) in a 20cm petri dish. After 5 days of culture all medium is replaced by 20ml fresh BMM medium. On day 7 cells can be plate out for experiments.

### **Lab equipment**

- Biosafety cabinet flow hood ;
- 5% CO2 Incubator ;
- Centrifuge ;
- Dissection material.

### **Method status**

History of use

Internally validated

Published in peer reviewed journal

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

### **Advantages**

- High amount of cells per isolation ;
- Possibility of freezing the cells for future use after isolation ;
- Reproducibility.

### **Modifications**

If the cells are confluent at day 5, instead of discard the BMM medium you can place it into a new petridish to increase the amount of cells.

## **REFERENCES, ASSOCIATED DOCUMENTS AND OTHER INFORMATION**

### **References**

Bogie JF, Mailleux J, Wouters E, Jorissen W, Grajchen E, Vanmol J, Wouters K, Hellings N, Van Horsen J, Vanmierlo T, et al. 2017b. Scavenger receptor collectin placenta 1 is a novel receptor involved in the uptake of myelin by phagocytes. Sci Rep 7: 44794.

### **Associated documents**

## **PARTNERS AND COLLABORATIONS**

### **Organisation**

**Name of the organisation** University of Hasselt (UHasselt)

**Department** Biomedisch Onderzoeksinstituut

**Country** Belgium

**Geographical Area** Flemish Region

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