Bone Marrow-Derived Macrophages isolation and differentiation

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Organisation

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SCOPE OF THE METHOD

The Method relates to	Human health
The Method is situated in	Basic Research
Type of method	In vitro - Ex vivo
Species from which cells/tissues/organs are derived	Mus musculus - C57BL/6J
Type of cells/tissues/organs	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.

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