Isolation and cultivation of bone marrow-derived macrophages

Commonly used acronym: *BMDM*

Created on: 10-03-2020 - Last modified on: 10-03-2020

Organisation

Name of the organisation Ghent University (UGent)
Department Internal Medicine and Pediatrics
Country Belgium
Geographical Area Flemish Region

Partners and collaborations

Ghent University hospital (UZ Gent)

SCOPE OF THE METHOD

The Method relates to	Animal health
The Method is situated in	Basic Research
Type of method	In vitro - Ex vivo
Species from which cells/tissues/organs are derived	Mouse
Type of cells/tissues/organs	Bone marrow-derived macrophages

DESCRIPTION

Method keywords

macrophages
bone marrow
isolation
macrophage polarization

Scientific area keywords

Immunology
immunomodulation
Immunometabolism
macrophage polarization

Method description

Mononuclear cells are flushed from the bone marrow using a 25G needle. After centrifugation, the cells are resuspended in 50mL pre-heated DMEM containing 20ng/ml M-CSF. The cells are cultured in 10cm petri dishes for 7 days. At days 2,4 and 6, the medium is renewed after washing away non-adherent cells. On day 7, add 3mL enzyme-free dissociation buffer and suspend cells using a cell scraper. Transfer cells to a 15mL tube, centrifuge, count and seed for experiments.

Lab equipment

Flow cabinet ;
Incubator ;
Centrifuge.

Method status

Published in peer reviewed journal

PROS, CONS & FUTURE POTENTIAL

Advantages

Easy to use ;
Reproducible.

Future & Other applications

Depending on the growth factors in the medium, different cell types can be cultured.

REFERENCES, ASSOCIATED DOCUMENTS AND OTHER INFORMATION

References

Lefere S, Van de Velde F, Hoorens A, Raevens S, Van Campenhout S, Vandierendonck A, Neyt S, Vandeghinste B, Vanhove C, Debbaut C, Verhelst X, van Dorpe J, Van Steenkiste C, Casteleyn C, Lapauw B, Van Vlierberghe H, Geerts A, Devisscher L. Angiopoietin-2 promotes pathological angiogenesis and is a novel therapeutic target in murine non-alcoholic fatty liver disease. Hepatology 2019 Mar;69(3):1087-1104.
Raevens S, Geerts A, Paridaens A, Lefere S, Verhelst X, Hoorens A, Van Dorpe J, Maes T, Bracke KR, Casteleyn C, Jonckx B, Horvatits T, Fuhrmann V, Van Vlierberghe H, Van Steenkiste C, Devisscher L, Colle I. Placental growth factor inhibition targets pulmonary angiogenesis and represents a novel therapy for hepatopulmonary syndrome in mice. Hepatology 2018 Aug;68(2):634-651.

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