Mouse Macrophage (MMa-bm)

Catalog Number: M1920-57

Cell Specification

Macrophages are cells differentiated from circulating bone marrow-derived monocytes. In the bone marrow and subsequestly in the blood and tissues, precursors of macrophages undergo a series of functional and morphologic maturation steps that culminate in the mature tissue macrophages [1]. Macrophages phagocytise invading microorganisms and also scavenge dead and damaged cells and cellular debris [2]. Macrophages can be identified by specific expression of a number of proteins including CD14, CD11b, F4/80 (mice)/EMR1 (human), MAC-1/MAC-3 and CD68 by flow cytometory or immunocytochemical staining [3].

MMa-bm from ScienCell Research Laboratories are isolated from adult CD57BL/6 mouse bone marrow. Cells are harvested after purification and delivered frozen. Each vial contains >1 x 10^6 cells in 1 ml volume. MMa-bm are characterized by immunofluorescence with antibody specific to F4/80. MMa-bm are negative for mycoplasma, bacteria, yeast and fungi. MMa-bm are guaranteed to further culture in the conditions provided by ScienCell Research Laboratories.

Recommended Medium

It is recommended to use Macrophage Medium (MaM, Cat. No. 1921) for the culturing of MMa-bm *in vitro*.

Product Use

MMa-bm are for research use only. They are not approved for human or animal use, or for application in *in vitro* diagnostic procedures.

Storage

Transfer cells directly and immediately from dry ice to liquid nitrogen upon receiving and keep the cells in liquid nitrogen until cell culture is needed for experiments.

Shipping

Dry ice.

Reference

[1]. Cline MJ and Sumner MA. (1972) Bone Marrow Macrophage Precursors. I. Some Functional Characteristics of the Early Cells of the Mouse Macrophage Series. *Blood*. 40: 62-69.

[2]. Wynn TA and Barron L. (2010) Macrophages: master regulators of inflammation and fibrosis. *Semin Liver Dis*. 30: 245-57.

[3]. Gordon S and Taylor RP. (2005) Monocyte and macrophage heterogeneity. *Nature Reviews Immunology*. 5: 953-964.

Instruction for culturing cells

Caution: Cryopreserved cells are very delicate. Thaw the vial in a 37ºC water bath and return them to culture as quickly as possible with minimal handling!

Set up culture after receiving the order:

1. Macrophages are not expected to further expand in culture. It is recommended to use either cell culture-grade or bacterial-grade plastics for the culturing of macrophages which show better cell attachment.
2. Prepare complete medium: decontaminate the external surfaces of medium bottle and medium supplement tubes with 70% ethanol and transfer them to a sterile field. Aseptically transfer supplement to the basal medium with a pipette. Rinse the tube with medium to recover the entire volume.
3. Add complete medium to the culture vessel. Leave the vessel in the sterile field and proceed to thaw the cryopreserved cells.
4. Place the vial in a 37ºC water bath, hold and rotate the vial gently until the contents completely thaw. Remove the vial from the water bath promptly, wipe it down with 70% ethanol and transfer it to the sterile field. Remove the cap carefully without touching the interior threads with fingers. Gently resuspend the contents of the vial using 1 ml eppendorf pipette.
5. Dispense the contents of the vial into the culture vessel.
   Note: Dilution and centrifugation of cells after thawing are not recommended since these actions are more harmful to the cells than the effect of residual DMSO in the culture.
6. Return the culture vessel to the incubator.
7. For the best result, do not disturb the culture for at least 16 hours after the culture has been initiated. Change the growth medium the next day to remove the residual DMSO and unattached cells, then every other day thereafter. A health culture will display polygonal shaped, sheets of contiguous cells and the cell number will be double after two to three days in culture.

Caution: Handling animal derived products is potentially biohazardous. Always wear gloves and safety glasses when working these materials. Never mouth pipette. We recommend following the universal procedures for handling products of human origin as the minimum precaution against contamination [1].

[1]. Grizzle WE and Polt S. (1988) Guidelines to avoid personal contamination by infective agents in research laboratories that use human tissues. *J Tissue Culture Methods*. 11:191-9.