Rat Microglia-T25 flask (RM-25)

Catalog #R1900-25

Cell Specification

Microglia, one of the glial cell types in the central nervous system (CNS), is an important integral component of the neuro-glial cell network [1]. They have been observed in the brain parenchyma from the early stage of development to the mature state. Microglia play an important role in brain immune surveillance. They can present antigens in the molecular context of MHC class II expression to CD-4 positive T cells, and are capable of Fc-mediated phagocytosis, and share many common antigens with hemopoietic and tissue macrophages [2]. Upon activation, they act as brain macrophages to clear tissue debris, damaged cells, or microbes, when programmed cell death occurs during brain development or when the CNS is injured. Furthermore, there is evidence that microglia are involved in a variety of physiological and pathological processes in the brain through interaction with neurons, other glial cells, and production of biologically active substances such as growth factors and cytokines[3].

RM-25 from ScienCell Research Laboratories are isolated from postnatal day 2 rat brain. After purification, RM-25 are shipped as fresh cells in a T25 flask placed in a cold box containing gel ice blocks. Each flask contains >10,000 cells per cm^2. RM-25 are characterized by immunofluorescence with antibodies to OX-42 (CD 11b/c) and F4/80. RM-25 are negative for mycoplasma, bacteria, yeast, and fungi. RM-25 are guaranteed to further culture under the conditions provided by ScienCell Research Laboratories; however, *RM-25 are not recommended for expanding or long-term cultures since the cells do not proliferate in regular culture*.

Recommended Medium

It is recommended to use Microglia Medium (MM, Cat. #1901) for culturing RM-25 *in vitro*.

Product Use

RM-25 are for research use only. They are not approved for human or animal use, or for application in *in vitro* diagnostic procedures.

Storage

Upon receiving, directly and immediately transfer the flask from the cold box to a 37ºC incubator and keep the cells at 37ºC until they are needed for experiments.

Shipping

Gel ice.

References

[1] Lee SC, Liu W, Brosnan CF, Dickson DW. (1992) "Characterization of primary human fetal dissociated central nervous system cultures with an emphasis on microgia." *Laboratory Investigation*. 67: 465-76.

[2] Fedoroff S, Zhai R, Novak JP. (1997) "Microglia and astroglia have a common progenitor cell." *J Neurosci Res*. 50: 477-86.

[3] Stoll G, Jander S. (1999) "The role of microglia and macrophages in the pathophysiology of the CNS." *Prog Neurobiol*. 58: 233-47.

Instructions for culturing cells

Initiating the culture:

1. 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 supplement tube with medium to recover the entire volume.
2. Refresh cell culture medium in the flask.
3. Return the culture vessel to the incubator.
4. Refresh culture medium the next day to remove unattached cells.
5. If necessary, refresh media every other day thereafter; however, we do not recommend culturing microglia for an extended period.

It is not recommended that microglia be subcultured beyond their initial plating.

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

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