

Risk Assessment

BV-2 Microglial Mouse Brain Cell Line

Background

The BV-2 microglial cell line originated from C57/BL6 murine. The cells have been immortalized using the v-raf/v-myc carrying J2 retrovirus resulting in a stable cell line with unique characteristics. The BV2 cells are able to retain the morphological and functional characteristics of microglia which are the resident immune cells of the central nervous system. The use of this cell line allows us to not rely on animal models and thus offers a promising alternative by providing a continuous and reproducible source of microglia.

Risk Considerations

(1) These primary cells are not known to harbor an agent recognized to cause disease in healthy adult humans. Handle as a potentially biohazardous material under at least Biosafety Level 1 containment.

(2) Appropriate safety procedures be used when handling all primary cells and cell lines, especially those derived from human or other primate material. Detailed discussions of laboratory safety procedures are provided in *Laboratory Safety: Principles and Practice*, 2nd ed. (ASM Press, Washington, DC) (Fleming et al., 1995) and Caputo, J.L. Biosafety procedures in cell culture. (1988) *J. Tissue Culture Methods* 11:223.

Exposure risk

Although the risk of exposure of BV-2 to works in the lab are negligible as these cells require very specific growth conditions (e.g. temperature, humidity, growth serum, cell density), care must be given to prevent contact with skin as these cells are highly proliferative.

Good standard laboratory practices of appropriate lab protective equipment, containment and appropriate disinfection/disposal will prevent any accidental external exposure.

Personal Protective Equipment (PPE)

Proper laboratory PPE, including lab coats, eye protection, and gloves, should be worn at all times in the Laboratory when handling BV-2 cell line.

Any breach of the skin (scratch, cut, wound) needs to be protected from contact with biological agents. Cover open wounds, cuts, scratches, and grazes with waterproof dressings and gloves. If you exhibit any open wounds (broken skin) in areas that cannot be covered by dressings or clothing, re-evaluate the work in process. Suggestions for mitigating the exposure in the case of broken skin that cannot be covered include, for example where the wound is on the face, work with a full-face shield; work in the BSC, or have someone else do the work.

Decontamination/Disposal Procedures

General Level 1 good laboratory practices of decontamination of all work surfaces daily (eg. 70% ethanol) and appropriate chemical disinfection (>10% bleach/sodium hypochlorite) of all liquid cultures and laboratory glassware will successfully remove viable cells.

Summary

While these cells are not known to harbor recognized agents that cause human diseases, it is best to use caution when handling any cell line.

Tentative Assessment: BIOSAFETY LEVEL 1