

Risk Assessment Mouse Embryonic Fibroblast Cells

Background

The mouse embryonic fibroblast cells (MEFs) are fibroblast cells. These cells are cultured as adherent cells. This particular cell line was derived in lab by Dylan Siriwardena.

Risk Considerations

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.

Exposure Risk

There is negligible risk of exposure of MEFs to workers in the lab as these cells require very specific growth conditions (e.g. temperature, humidity, growth serum, cell density). 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 and gloves, should be worn at all times in the laboratory. Eye protection should be implemented when handling large volumes of liquid or using samples with infectious agents. 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 and appropriate chemical disinfection (eg. 70% ethanol). Also, treatment of all liquid cultures with a final 1 % sodium hypochlorite for a minimum of 30 minutes (or use disinfectant and contact time that is based on experimental validation of efficacy for your specific bio agent) before disposal

into the sink will successfully remove viable cells. Autoclaving at 121 degrees Celsius for at least 20 minutes for solid waste and laboratory glassware will also 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 them.

Tentative Assessment: BIOSAFETY LEVEL 1