Risk Assessment
Hep G2

Background

HepG2 is a human cell line derived from hepatocellular carcinoma from a 15 yr male.

Risk Considerations

(1) These 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 risks of exposure to these cells are negligible, these cells do require very specific growth conditions (e.g. temperature, humidity, growth serum, cell density), care should be given to prevent contact with the cells. 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. 1% hypochlorite or 70% ethanol) of all liquid cultures and laboratory glassware will successfully kill 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 human cells. We recommend that all human cells be accorded the same level of biosafety consideration as cells known to carry viruses as it is potential possible.

Tentative Assessment: BIOSAFETY LEVEL 2