



Risk Assessment – VI-RA-012- PBMC Stimulation

Scope

Regulation of the immune system is complex and balanced by multiple pro- and anti-inflammatory cytokines. Naïve CD4 T-cells differentiate under the influence of antigen presentation and specific cytokines to Th1, Th2, Th17, or Treg phenotypes. However, these CD4 subtypes are not fixed, but rather conversion is possible amongst these phenotypes. The secretion of inflammatory cytokines as well as T-cell cytokines can be used to monitor potential agents of toxicity. Test articles are used on human PBMC to monitor secretion of inflammatory agents.

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| Carried out by: | Tiphaine Bouriez-Jones | Date carried out: | May 2015 | Review Due: | May 2018 | |
| Hazard (Cause and consequence) | Affected Groups | Existing controls | | | Risk | Further actions |
| Infection from exposure to pathogens - Via direct contact with the pathogen (i.e. skin adsorption from splash) - Via spill of material - Via incorrect disposal of waste | Staff Students and visitors | CL3 biological agents Only trained users who have shown evidence of their experience to the CL3 Safety Officer will have access to the CL3 suite out of hours. Each user is trained to adhere to the CL3 Code of Practice, they will follow the precautions involved with handling and storing pathogens. Every user must double glove, wear a leak-resistant disposable gown and wear safety spectacles whilst working in the suites. The use of sharps is forbidden in the CL3 suites. Out of hours workers must at least have a buddy system in place or work in pairs. Users are familiar with emergency procedures and a spill drill is implemented as a check on measures. A telephone available in each CL3 suite, with up-to-date list of emergency contact details next to it. | | | Medium | Bi-yearly checks on the BSC within CL3 Yearly checks on BSC in CL2 |



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| | | <p>Waste is autoclaved within the suite, samples will be packaged in tertiary container if they need to be taken outside of the CL3 suite.</p> <p>No engineer is allowed to work out of hours in the CL3 suite.</p> <p>CL2 biological agents Users are trained to follow good microbiological practice. They must wear blue labcoat, nitrile gloves and safety spectacles at all time whilst working in CL2.</p> <p>Procedures in case of spill or exposure policies are explained at induction and the policies are displayed in the CL2 laboratories.</p> | | |
| Being trapped in the CL3 suite out of hours (door release mechanism no longer functioning) | Staff Students and visitors | Emergency release of the door mechanism present on each door. | Low | Yearly maintenance service contract |
| Entering the suites under duress | Staff Students and visitors | There is a duress code which can be entered instead of the normal code which will raise the alarm directly to Security Services without the knowledge of the persons entering the suites. | Low | Tested yearly by Facilities |
| Loss of containment | Staff Students and visitors | <p>An audible alarm is triggered in case of loss of containment to alert users.</p> <p>All users are familiar with the emergency procedure in case of loss of containment: securing their work, leaving the facility without delay and alerting Facility as soon as possible to resolve the issue.</p> | Low | Pressure monitored weekly, yearly maintenance contract. |
| Injury due to misuse or faulty equipment | Staff Students and visitors | All users are trained in the correct operation of instruments. Specialised equipment such as centrifuges and incubators are under maintenance service contract. | Low | Incubators and centrifuges serviced yearly |



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| Exposure to chemicals (Ethanol, Industrialised Methylated Spirit, Virkon, Histopaque) | Staff, students and visitors | <p>Via Inhalation: Where possible stock will only be available in solution. Virkon is available as powder due to the difficulty of dissolving and attaining the appropriate concentration, users must be careful when dispensing Virkon and always cover the lid of the stock pot.</p> <p>Via skin adsorption: User must wear gloves and labcoat at all time.</p> <p>Via instillation (eye): User must wear safety spectacles at all time.</p> <p>See specific COSHH risk assessment for each chemical.</p> | Medium | Checks on LeV |
| Exposure to Trypan Blue Health hazard: H350 May cause cancer | Staff, students and visitors | <p>Chemical stock are available in solution only.</p> <p>Via skin adsorption: User must wear gloves and labcoat at all time.</p> <p>Only plastic slides will be used to reduce the risk of cut.</p> <p>Via instillation (eye): User must wear safety spectacles at all time.</p> <p>See specific COSHH risk assessment.</p> | Medium | None |

It is the users responsibility to ensure what controls are needed to ensure that the health of themselves and others around them. It is imperative that you **DO NOT** start any work until you are absolutely sure of the appropriate precautions that need to be employed. If you are unsure seek advice from your line/laboratory manager or your departmental safety officer (DSO).