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| **LEICA 1100 Cryostat** | | | |
| **Purpose** | To provide working guidelines for the operation of the Leica 1100 cryostat | | |
| **Policy Statements** | This procedure applies to Histology Technical staff and Pathology Assistant maintaining cryostat | | |
| **Principle** | The cryostat is designed for the rapid freezing and sectioning of tissue samples. | | |
| **Materials** | **Reagents** | | **Supplies** |
|  | • Sani-Cloth wipes  • 100% alcohol | | * Biohazard Sharps * PPE * Leica 1100 cryostat |
| **Specimen** | Fresh, unfixed tissue | | |
| Records/Forms Required | Preventative Maintenance Log | | |
| Related Policies and Procedures | HI 1.12 Frozen Sections  HI 1.17 Handling & Disposal of Infectious Tissue and Chemical Reagent Waste  HI.103 Quality Control in Anatomic Pathology | | |
| **Special Safety Precautions** | Use appropriate PPE during frozen sections.  Lock the handwheel while clamping the specimen chuck, changing microtome blade and while not in use.  Dispose of used microtome blades and other sharps in appropriate Biohazard sharps containers. | | |
| **Quality Control** | Temperature monitoring is recorded in Histology.  Yearly preventative maintenance and additional service or repairs are performed and documented by BioMed and North Central Instruments. | | |
| **Procedure** |  | | |
|  | **Step** | **Action** | |
| **Routine cleaning** | 1. | Trimmings of tissue that accumulate in the chamber are removed and disposed of in Red Biohazard trash after each case. Cleaning of the interior of the chamber is accomplished by wiping surfaces with 100% alcohol. Cleaning is recorded on the Daily PM form in Histology. | |
| **Cutting Infectious Tissue (Includes HIV/AIDS and TB):** | |  | |
| **Protective Clothing:** | 1. | Wear double gloves, N95 mask, safety eyewear and gown. | |
|  | 2. | Remove outer layer of double gloves, withdraw slide from fixative with clean  forceps, and stain. | |
| **Cleaning after cutting infectious cases** | 3. | When technical procedure is completed, put on clean double gloves and place tissue directly into 10% formalin to fix thoroughly before it is handled again. | |
|  | 4. | When all cutting is completed, remove disposable blade and discard in appropriate  BIOHAZARD SHARPS container. With protective clothing in place, remove the knife holder from the microtome. Retrieve all tissue shavings from the waste tray. Dispose directly into a Red Biohazard Trash. Then wipe clean with Sani-cloths and 100% alcohol. Remove outer layer of double gloves, also disposing into the same bag. Then close the bag securely and dispose into the Red Biohazard trash bin. Wipe all surfaces of the chamber with 100% alcohol and dry well. | |
|  | 5. | \*\*If complete decontamination is desired, the cryostat must be shut off long enough for the microtome area to reach ambient temperature. Wipe all exposed surfaces inside and outside the cryostat chamber with Sani- Cloth wipes. Then wipe all surfaces with 100% alcohol. Let the surface area air dry with the cover open to dissipate any fumes. Do NOT use Bleach in the cryostat it will damage the stainless steel. | |
|  | 6. | Turn the cryostat back on and allow to cool completely before using (-18 to -25 C). | |
| **Troubleshooting** |  | | |
| **Issues** | BioMed or North Central Instruments should be notified immediately if any issues are noted. | | |
| **Repairs** | Replacement of the fuses or other repairs should be performed by the BioMed department or by North Central Instruments. | | |
| **Thin/thick sections** | Make sure that chuck holder is all the way back in cryostat. Check and readjust clearance angles, clamping of the chuck holder, and the clamp of the blade holder. | | |
| **Compressed sections** | The specimen/ OCT may be too warm  Microtome blade may be dull. Replace.  Clearance angle should be set at approximately 5; check and adjust as necessary | | |
| **Brittle sections** | Specimen too cold. Warm slightly by wiping surface with thumb. | | |
| **References** | Leica 1100 Cryostat User Guide | | |

**Historical Record**

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| Version | Revised by | Effective Date | Summary of Revisions |
| 1 |  |  | Initial version. |
| 2 | A. Dubbelde | 6/27/19 | Update format, add version, and remove use of liquid nitrogen and cutting procedure. |
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