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| **Special Collections for Kidney Biopsies** | | | | | | |
| **Purpose** | This procedure provides instructions for special collection of kidney biopsies which includes tissue procurement, fixatives, accessioning, and send out testing. These biopsies are scheduled in advance and will be performed in interventional radiology or the operating room. Pathology assistance is required to assess specimen adequacy and to divide the tissue for special studies. Tissue submitted for light microscopy and immunofluorescence (IF) study are processed and interpreted at Children's Minnesota. Tissue submitted for electron microscopy (EM) is processed at Hennepin County Medical Center (HCMC) as "technical only". EM professional interpretation is performed at Children's Minnesota, compared with light microscopy and immunofluorescence findings, and results are issued as a single integrated biopsy report. | | | | | |
| **Materials** | **Reagents** | | | **Supplies** | **Equipment** | |
| **Renal Biopsy Kit (HCMC) -**  **3 color coded and labeled vials**  Histology Refrigerator, grossing room | • Formalin, 10%  HCMC Kit or CHMN container  • Michel's solution for Immunofluorescence (IF)  - (yellow cap) - 1 year exp.  \*If crystallizes call for replacement  • Electron microscopy (EM) fixative (2.5% glutaraldehyde)  - (green cap)  \*Colorless fixative can be used. Faint yellow is degradation and should not be used.  Call for additional kits: HCMC Histology  (612) 873-3079 | | | ● Biopsy Collection Cart  Saline-10ml vial  Petri Dish  Small disposable (sterile)  forceps  Sterile blade  Wooden sticks | * + Dissection Scope   + Light source | |
| **Sample** | **Kidney needle core biopsy** | | | | | |
| Sendouts -HCMC | \* Send the EM specimen to the HCMC Histology lab. HCMC Histology will route the glutaraldehyde specimen to the EM lab for testing.  \*When a renal biopsy is obtained, please call HCMC EM Lab, (612) 873-2175 to alert their laboratory of the pending specimen. The information needed when calling is: institution name, patient name, physician name (specifically the nephrologist and pathologist), time/ date the kit will arrive at HCMC and other relevant information, such as rapid process requested or Technical Only.  NOTE: If an IF specimen is sent with EM, inform the EM lab that an IF specimen is being sent along with the EM specimen.  \* Label the specimen container with the patient identification. Do Not Place Labels on the exterior of the Renal Transport Kit.  \* *Complete the HCMC requisition form (included in the kit) with patient demographics, clinical information, requested tests and specimen information. Please make sure to enter the date of service.*  \* For billing, please indicate the billing choice: **bill the patient through insurance**.  \* A copy of the patient's insurance information (face sheet) as well as the patient demographics MUST accompany each specimen, regardless of billing preference.  \* For transport, call Quick Silver (651) 484-1111 and request a pick up at your site for delivery to:  HCMC EM/Neuromuscular Lab  Parkside Professional BLD  825 South 8th ST., Suite LL-05  Minneapolis, MN 55404  Request a 45 minute delivery service. HCMC will cover the cost.  ***NOTE****: When Ultra IHC instrument is down, IF specimen is sent to HCMC. Both EM and IF specimens can be sent to EM lab. HCMC EM lab will triage the IF specimen to Histology lab.*  *\* IF slides are available for same day return if specimen is received before 12:00.*  *\*\*Return of IF slides-the slides should be sent back directly to Histology-RM 32-B600.* | | | | | |
| HCMC Histology Lab Info: | Lab Hours:  Monday through Friday, 6:00am to 5:00 pm  Saturday 6:00am to 12:00pm  Please direct questions to (612) 873-3079 or 612-873-2175  After hours: Renal Pathologist pager (612) 223-6602 | | | | | |
| Scheduling | The nurse's station, operating room or physician's office will contact the Histology lab, giving schedule information in advance to include patient name, date/time and place of collection. The day of the biopsy, histology will contact the department where the biopsy is being performed to verify the time and alerting them to contact Histology when the patient is in the room and prepared for the procedure. Pathology provides the collection cart and the dissecting scope. Histology staff and/or the pathologist will bring the dissecting scope and cart to the site of collection. The pathologist provides immediate evaluation of specimen adequacy and documents the diagnosis similar to an intraoperative consultation on the requisition provided by surgery staff- Intraoperative Consultation form for Fresh Tissue.  *NOTE: After the evaluation of specimen adequacy, bring the specimen to the lab for triage. IF is done on cryostat sections, so submit the specimen for IF fresh.* | | | | | |
| Processing | **Kidney Biopsies:**  The pathologist is responsible for dividing the tissue appropriately for special studies at time of gross and submitting the EM to HCMC for technical only service.  Histology staff logs the specimen into the Copath surgical database accessioned as a "Kidney Biopsy, R/L". Accession as a single part with the EM and IF as special collections (EM and IF should not be designated as B and C.)  - Formalin 10% fixed specimen is submitted for routine histology at Children's MN.  - IF specimen is submitted fresh for IF testing at Children's MN  - Glutaraldehyde specimen is sent for EM testing (technical only) at HCMC.    \*\*A procedure in Copath should be entered at the time of accessioning with default billing for HCMC.  The kidney biopsy processed at Children's should be fixed in 10% Formalin, wrapped in  Histo-wrap and then processed on a short run (GI protocol/process).  \*\*Cut 12 serial section slides at 3 microns (3 sections per slide).  Label as follows: (built in Copath-kidney biopsy protocol)  Slide # 1- H&E Slide # 12- H&E Slide# 23- Negative  2- Blank 13- H&E-IF 24- H&E-IF  3- PAS 14- IgG-IF  4- Jones Silver 15- IgA-IF  5- Blank 16- IgM-IF  6- H&E 17- C3-IF  7- Blank 18- C1q-IF  8- PAS 19- Kappa-IF  9- Trichrome 20- Lambada-IF  10- Jones sliver 21- Fibrinogen-IF  11- Blank 22- Albumin-IF | | | | | |
| Technical Only Studies  -slide/specimen  return | **Return of IF and EM pathology materials:**  1. IF slides will be returned same-day or next-day for interpretation in the form of a covered box or tray of slides. Slides received from HCMC should be labeled with the CHMN accession number, placed in a slide folder and put in the designated area in the Histology refrigerator (stains room). The pathologist should be notified immediately, or the slides may be handed directly to the pathologist for interpretation.  \*\*Note: IF slides must remain cold and covered (protected from light) in order to maximize the strength of immunofluorescence signal prior to interpretation.  2. EM will be returned for interpretation in the form of a CD and 2 slides through the lab/ pathology secretary's office within 3-4 days after procedure. The slides and CD should be labeled with the CHMN accession number and delivered to the pathologist.  **Storage of IF and EM pathology materials:**  1. IF slides should be photographed by the pathologist and images stored on the shared drive as a permanent record of the study. H&E stained frozen section slides should be stored with other slides from the case. IF antibody slides should be stored in the Histology refrigerator in Minneapolis for 3 months.  2. EM semi-thin section slides should be stored with other slides from the case. The ultrastructural images should be transferred from the CD to the shared secure image folder corresponding to the case number. The CD may then be broken and discarded. | | | | | |
| **Quality Control** | **Collection Quality Control:**   1. Communication between the clinician and pathology staff is of greatest importance in optimizing tissue processing to meet the diagnostic needs. 2. The division of the tissue specimen must be carried out in the laboratory. Saline should be applied to the tissue to prevent drying prior to collection of special studies | | | | | |
| **Special Safety Precautions** | Please refer to standard safety precautions when handling the specimen, the vials and/or containers of fixative and transport media for HCMC. Follow established Hazardous Waste collection and disposal procedures. | | | | | |
| **References** | 1. Bancroft, J.D.: Theory and Practice of Histological Techniques. C. 1982 by Churchill  Livingstone, pp, 586-587  2. Sheehan, D.C. and Hrapchak, B.B.: Theory and Practice of Histotechnology, c. 1980 by C.V.  Mosby Co. p. 77.  3. Hennepin County Medical Center, Histology-Pathology Department; Electron Microscopy  Laboratory; and Immunofluorescence Laboratory; 716 S. 7th Street, Minneapolis, MN 55415 | | | | | |
| **Authorization** | **Designee** | | **Signature** | | | **Date** |
| Medical Director | | Dennis Drehner DO | | | 3/11/2009 |
| Pathology Assistant | | Melissa Turner, PA | | | 3/12/2009 |
| Medical Director | | Peter Helseth, MD | | | 5/1/2012 |
| Anatomic Pathology Medical Director | | Megan K. Dishop, MD | | | 6/3/2015 |
|  |  | | Megan K. Dishop, MD | | | 6/28/17 |
|  |  | | Megan K. Dishop, MD | | | 11/8/17 |
|  |  | | | | | |
| **Annual Review** | **Designee** | **Signature** | | | | **Date** |
| Technical Specialist | Dave Slinger | | | | 4/16/2009 |
|  | Dave Slinger | | | | 4/15/2010 |
|  | Dave Slinger | | | | 2/11/2011 |
| Pathology Assistant | Melissa Turner, PA | | | | 4/19/2012 |
|  | Melissa Turner, PA | | | | 6/25/2015 |
|  |  | Revisions: M. Turner, PA | | | | 10/2016 |
|  | Histology Supervisor | Prabha Chintapalli | | | | 6/20/17 |
|  |  | Prabha Chintapalli | | | | revised:11/8/17 |