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KAPP-Sen TMC: Kidney donor selection and wedge biopsy preparation

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Juliana Alcoforado Diniz¹, Alejandro Peña², Barbara U. Okafor³, Elizabeth L. Stoecker³, Stefan G. Tullius³, Paul Robson^{1,4,5}, Nicolas Musi⁶

¹The Jackson Laboratory for Genomic Medicine, Farmington, CT, USA;

²University of Texas Health Science Center at San Antonio, San Antonio, Texas, United States;

³Brigham and Women's Hospital, Harvard Medical School, Boston, Massachusetts, Boston, MA, USA;

⁴Department of Genetics and Genome Sciences, University of Connecticut School of Medicine, Farmington, CT, USA;

⁵Institute for Systems Genomics, University of Connecticut, Farmington, CT, USA;

⁶Cedars-Sinai Medical Center, Los Angeles, CA, United States

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KAPP-Sen TMC



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Protocol status: Working

We use this protocol and it's working

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Abstract

This protocol outlines the procedure for obtaining and processing wedge biopsies from donor nephrectomies. After the kidney is removed from the donor, wedge biopsy is taken from the upper pole area in a controlled open approach. These biopsies are preferred over needle biopsies due to lower risk of complications. The samples are initially fixated in 10% neutral buffered formalin (NBF) at room temperature for 24 hours, then transferred to 70% cold ethanol and refrigerated for further paraffin embedding.

Donor selection criteria

- 1 Inclusion criteria:
 1. Both sexes
 2. Age > 18 years
 3. All ethnicities
- 2 Exclusion criteria:
 1. BMI > 32 kg/m²
 2. GFR < 60 ml/min/1.73 m²
 3. Hypertension with end-organ damage
 4. Active malignancy
 5. Chronic pulmonary, hepatic, infectious, gastrointestinal, endocrine, metabolic, neurologic, or inflammatory disease
 6. Chronic use of systemic steroids
 7. Chronic use of anticoagulants
 8. Use of agents with senolytic activity

Collection and preservation of the specimen

- 3 Tissue from donor nephrectomy is processed at the back of the operating room, after the kidney has been removed from the donor but before it has been implanted into the recipient.

Note

The study team prefers wedge biopsies compared to needle biopsies. Needle biopsies are usually used in a percutaneous approach, and there is a higher risk of av fistulas linked to this approach. The biopsies are taken as wedge biopsies, usually from the upper pole area.

Safety information

The study team will not take biopsies at the kidney hilum.

- 4 A small wedge biopsy is taken after perfusing the kidney on the back table. The wedge biopsy in an open approach (as the kidney is on the back table) that allows for an entirely



controlled scenario. The wedge biopsy is usually 1 cm long, 0.4-0.5 cm wide, and 0.1-0.2 cm deep.

5 Place the wedge biopsy directly in a tube containing 10% neutral buffered formalin (NBF) for fixation.

6 Option 1, if the specimen is collected during Thursday-Friday:
Store the sample in 10%NBF at room temperature for 24 hours. Transfer sample to cold ethanol 70% and keep in the fridge protected from light. Ship the tube to JAX-GM in cold packs overnight.

Option 2, if the specimen is collected during Monday-Wednesday:
Ship to JAX-GM at room temperature. At JAX-GM, ensuring that the sample was in 10%NBF fixative for at least 24 hours, transfer the sample to cold ethanol 70% and keep in the fridge protected from light until shipment.

7 Ship the tube in cold packs overnight to JAX-BH for cassette placement and paraffin embedding. The total time in ethanol may vary from 4 to 7 days.