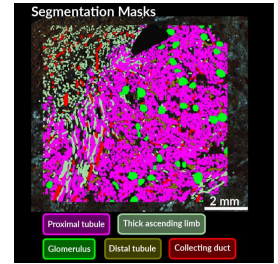


Jun 19, 2023

Kidney Functional Tissue Unit (FTU) Segmentation

DOI

<https://dx.doi.org/10.17504/protocols.io.kxygx3mkog8j/v1>



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Protocol Citation: Nathan Heath Patterson, ellie.l.pingry , Katerina Djambazova, Melissa Farrow, Raf Van De Plas, Jeff Spraggins 2023. Kidney Functional Tissue Unit (FTU) Segmentation. **protocols.io**

<https://dx.doi.org/10.17504/protocols.io.kxygx3mkog8j/v1>

**Manuscript citation:**

Patterson, N. H.; Neumann, E. K.; Sharman, K.; Allen, J.; Harris, R.; Fogo, A. B.; De Caestecker, M.; Caprioli, R. M.; Van De Plas, R.; Spraggins, J. M. Autofluorescence Microscopy as a Label-Free Tool for Renal Histology and Glomerular Segmentation. <https://doi.org/10.1101/2021.07.16.452703>.

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Protocol status: Working

We use this protocol and it's working

Created: June 16, 2023

Last Modified: October 18, 2023

Protocol Integer ID: 83532

Keywords: kidney functional tissue unit, functional tissue unit, segmentation model to autofluorescence, segmentation of glomeruli, microscopy image, distal tubule, ftus, kidney, ftu, autofluorescence, proximal tubule, glomeruli, tissue, segmentation, segmentation model

Abstract

This protocol explains how to apply a segmentation model to autofluorescence microscopy images to find kidney functional tissue units (FTUs). Currently the model allows for segmentation of glomeruli, proximal tubules, thick ascending limb, distal tubules, and collecting ducts.

Materials

For performance, a workstation with at least 32 GB of memory is advised and a GPU with 12 GB memory is required for any GPU-based prediction.



Apply kidney FTU segmentation to autofluorescence images

- 1 Configure the segmentation prediction by creating the dataset **.yaml file**. Add the path to the saved model and images in the configuration file.
- 2 Create the python environment needed to run wsimap. See instructions at the [wsimap GitHub](#).
- 3 Run the model using the command line from the wsimap directory like so:

```
python scripts/config/instance-predict-from-config-newmodels-multi.py "/path/to/configuration-file-from-step2.yaml"
```
- 4 Collect .geojson segmentations in output folder specified in .yaml file from Step 2. These can be visualized in QuPath.

Protocol references

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