

Dec 15, 2021

# Visualizing lower urinary tract afferent projections in the lumbosacral spinal cord in rats

John-Paul Fuller-Jackson<sup>1</sup>, Peregrine B Osborne<sup>1</sup>, Janet R Keast<sup>1</sup><sup>1</sup>University of Melbourne

1

[dx.doi.org/10.17504/protocols.io.b2ueqete](https://dx.doi.org/10.17504/protocols.io.b2ueqete)

SPARC

Tech. support email: [info@neuinfo.org](mailto:info@neuinfo.org)John-Paul Fuller-Jackson  
University of Melbourne

This collection includes the protocols required to map the lower urinary tract afferent projections to the lumbosacral spinal cord of male and female Sprague-Dawley rats. Afferents can be visualized using 3D reconstruction of alternating sections in TissueMaker (MBF Bioscience), or through the immunolabelling and clearing method, iDISCO. The following protocols are performed, regardless of endpoint:

STAGE 1: Use of cholera toxin subunit B to label neural projections to lower urinary tract organs.

STAGE 2: Intracardiac perfusion with fixative for anatomical studies.

The next set of protocols pertain to the 3D reconstruction of spinal cord from alternating sections.

STAGE 3: Immunohistochemical labelling of lower urinary tract afferents in spinal cord.

STAGE 4: Quantitation of lower urinary tract afferents in 3D reconstruction of lumbosacral spinal cord sections

For the visualization of lower urinary tract afferents in the intact spinal cord, skip Stages 3 and 4, and instead use Stage 5:

STAGE 5: Immunolabelling and clearing of intact spinal cord for visualization of lower urinary tract afferents

DOI

[dx.doi.org/10.17504/protocols.io.b2ueqete](https://dx.doi.org/10.17504/protocols.io.b2ueqete)

John-Paul Fuller-Jackson, Peregrine B Osborne, Janet R Keast 2021. Visualizing lower urinary tract afferent projections in the lumbosacral spinal cord in rats.

**protocols.io**

<https://dx.doi.org/10.17504/protocols.io.b2ueqete>



NIH-SPARC

Grant ID: OT2OD023872

neuroscience, retrograde tracing, immunohistochemistry, clearing, iDISCO, 3D reconstruction, neuroanatomy

collection ,

Dec 14, 2021

Dec 15, 2021

55910

This collection includes the protocols required to map the lower urinary tract afferent projections to the lumbosacral spinal cord of male and female Sprague-Dawley rats. Afferents can be visualized using 3D reconstruction of alternating sections in TissueMaker (MBF Bioscience), or through the immunolabelling and clearing method, iDISCO. The following protocols are performed, regardless of endpoint:

STAGE 1: Use of cholera toxin subunit B to label neural projections to lower urinary tract organs.

STAGE 2: Intracardiac perfusion with fixative for anatomical studies.

The next set of protocols pertain to the 3D reconstruction of spinal cord from alternating sections.

STAGE 3: Immunohistochemical labelling of lower urinary tract afferents in spinal cord.


STAGE 4: Quantitation of lower urinary tract afferents in 3D reconstruction of lumbosacral spinal cord sections


For the visualization of lower urinary tract afferents in the intact spinal cord, skip Stages 3 and 4, and instead use Stage 5:


STAGE 5: Immunolabelling and clearing of intact spinal cord for visualization of lower


## urinary tract afferents


### FILES

- 

📄 Use of cholera toxin subunit B to label neural projections to lower urinary tract organs  
**Version 1**  
by John-Paul Fuller-Jackson, University of Melbourne
- 

📄 Intracardiac perfusion with fixative for anatomical studies  
**Version 1**  
by Janet Keast, University of Melbourne
- 

📄 Immunohistochemical labelling of lower urinary tract afferents in spinal cord  
**Version 1**  
by John-Paul Fuller-Jackson, University of Melbourne
- 

📄 Quantitation of lower urinary tract afferents in 3D reconstruction of lumbosacral spinal cord sections  
**Version 1**  
by John-Paul Fuller-Jackson, University of Melbourne
- 

📄 Immunolabelling and clearing of intact spinal cord for visualization of lower urinary tract afferents  
**Version 1**  
by John-Paul Fuller-Jackson, University of Melbourne