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DESI imaging mass spectrometry on liver tissue

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protocol .

Human BioMolecular Atlas Program (HuBMAP) Method Development Community
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Acquire DESI imaging mass spectrometry data on liver tissue sections at 40µm spatial resolution - to assess distribution of lipids and metabolites within the tissue.

Presha Rajbhandari, Brent Stockwell, bs 2022. DESI imaging mass spectrometry on liver tissue. **protocols.io** https://protocols.io/view/desi-imaging-mass-spectrometry-on-liver-tissue-b8evrte6

DESI, imaging mass spectrometry

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Major Mix IMS/Tof Calibration Kit (Waters, SKU:186008113)
Leucine Enkephalin (Waters, SKU:186006013)

1 Perform mass calibration of the instrument using Sodium formate and ion mobility using CCS Major Mix using electrospray ionization source.

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Synapt G2-Si
Mass Spectrometer
Waters **176003191**

2 Prepare spray solvent: 98:2 methanol:water with 0.1% formic acid and 20pg/µl leucine-enkephalin as lockmass

3 Fill the syringe and start the flow at 1.5µl/min

4 Set the DESI sprayer angle of 75°, nebulizing gas (N2) pressure of 0.3 PSLM

5 Dry the sample slide with tissue section in a vacuum desiccator for 10 minutes

6 Set the sprayer distance from the slide and the inlet tube and optimize signal intensity on a spare tissue section

7 Mark the corners of the slide with a colored marker pen and scan the slide

8 Place the slides on the DESI slide holder

9 Open HDI Imaging software (Waters Corp.) and import the slide image

10 Select the instrument type, slide holder in use, and mark the slide corners to define image coordinates

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11 Define the m/z range, polarity and analyzer mode

12 Define the region of interest to image, pixel size and scan rate and export the experiment file

13 Load the samples on Masslynx software and start acquisition using appropriate data acquisition parameters on MS tune page

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