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DESI imaging mass spectrometry on liver tissue

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Protocol status: Working

We use this protocol and it's working

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Abstract

Acquire DESI imaging mass spectrometry data on liver tissue sections at 40µm spatial resolution - to assess distribution of lipids and metabolites within the tissue.

Materials

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.

Equipment

Synapt G2-Si

NAME

Mass Spectrometer

TYPE

Waters

BRAND

176003191

SKU

- 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
- 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