

In-situ Primary Metabolite Localization on Rat Brain Section by Chemical Mass Spectrometry Imaging

F. Benabdellah, D. Touboul, A. Brunelle, O. Lapr v te

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We describe here the detection and identification of 13 primary metabolites (AMP, ADP, ATP, UDP-GlcNAc, ...) directly from rat brain sections by chemical mass spectrometry imaging. Matrix-assisted laser desorption/ionization tandem mass spectrometry (MALDI-MS/MS) was combined with 9-aminoacridine as a powerful matrix. We also demonstrate that a new robotic sprayer allows us to homogeneously coat the surface with the matrix, enabling the acquisition of chemical images at a 50 microm resolution, leading us to precisely and simultaneously localize each metabolite over the tissue surface. These experiments open a new field of investigation for chemical mass spectrometry imaging and are of great interest for both chemists and biologists.

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