

SUPPLEMENTARY MATERIAL

Figure S1. Desorption spectra from sections of rat brain tissue recorded in the negative ion mode. The left column are recorded with EASI and the right column are recorded with DESI using paper surface. The upper row (A) and (B) are of the gray matter, and the lower row (C) and (D) are of the white matter.



Figure S2. Desorption spectra from sections of rat brain tissue recorded in the positive ion mode. The left column are recorded with EASI and the right column are recorded with DESI using paper surface. The upper row (A) and (B) are of the gray matter, and the lower row (C) and (D) are of the white matter.



Figure S3. Desorption images of select lipid ions from gray matter rat brain tissue recorded with 200 μ m spatial resolution in the negative ion mode by EASI-MS. (A) arachidonic acid (20:4) (*m*/*z* 303.2); (B) PE (18:0/22:6) (*m*/*z* 790.5) and (C) plasmenyl-PE (18:0/22:6) (*m*/*z* 774.6).



Figure S4. Desorption images of select lipid ions from white matter rat brain tissue recorded with 200 μ m spatial resolution in the positive ion mode by EASI-MS. (A) *m/z* 683.4, (B) *m/z* 659.5 and (C) *m/z* 750.5.