

Imaging mass spectrometry: hype or hope?

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Imaging mass spectrometry is currently receiving a significant amount of attention in the mass spectrometric community. It offers the potential of direct examination of biomolecular patterns from cells and tissue. This makes it a seemingly ideal tool for biomedical diagnostics and molecular histology. It is able to generate beautiful molecular images from a large variety of surfaces, ranging from cancer tissue sections to polished cross sections from old-master paintings. What are the parameters that define and control the implications, challenges, opportunities, and (im)possibilities associated with the application of imaging MS to biomedical tissue studies. Is this just another technological hype or does it really offer the hope to gain new insights in molecular processes in living tissue? In this critical insight this question is addressed through the discussion of a number of aspects of MS imaging technology and sample preparation that strongly determine the outcome of imaging MS experiments.

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