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Membrane composition analysis by imaging mass spectrometry

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Membranes on solid supports offer an ideal format for imaging. Secondary ion mass spectrometry (SIMS) can be used to obtain composition information on membrane-associated components. Using the NanoSIMS50, images of composition variations in membrane domains can be obtained with a lateral resolution better than 100 nm. By suitable calibration, these variations in composition can be translated into a quantitative analysis of the membrane composition. Progress towards imaging small phase-separated lipid domains, membrane-associated proteins and natural biological membranes will be described.

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