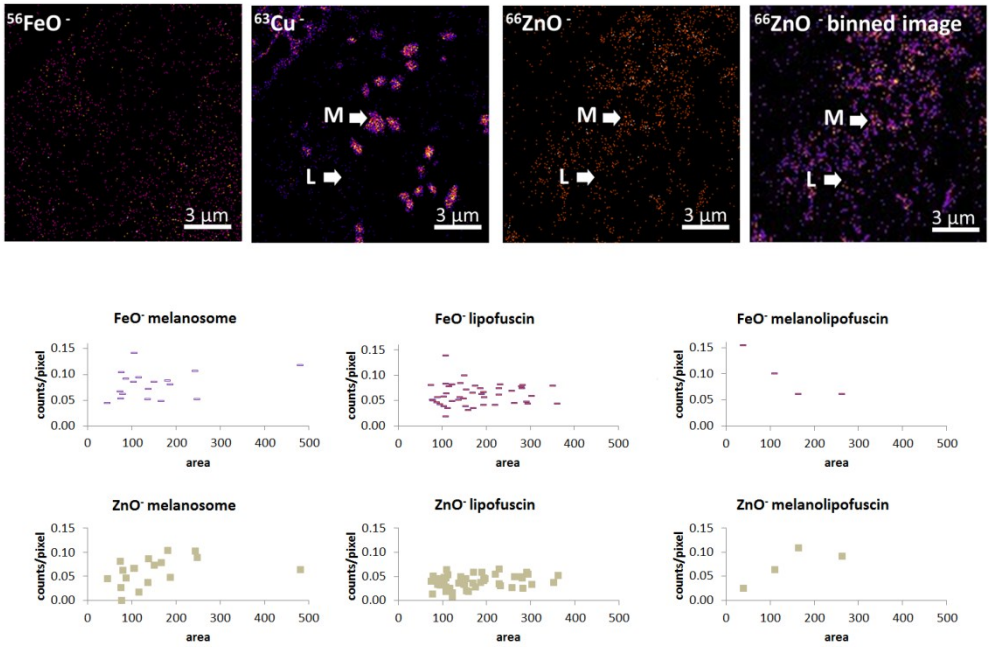
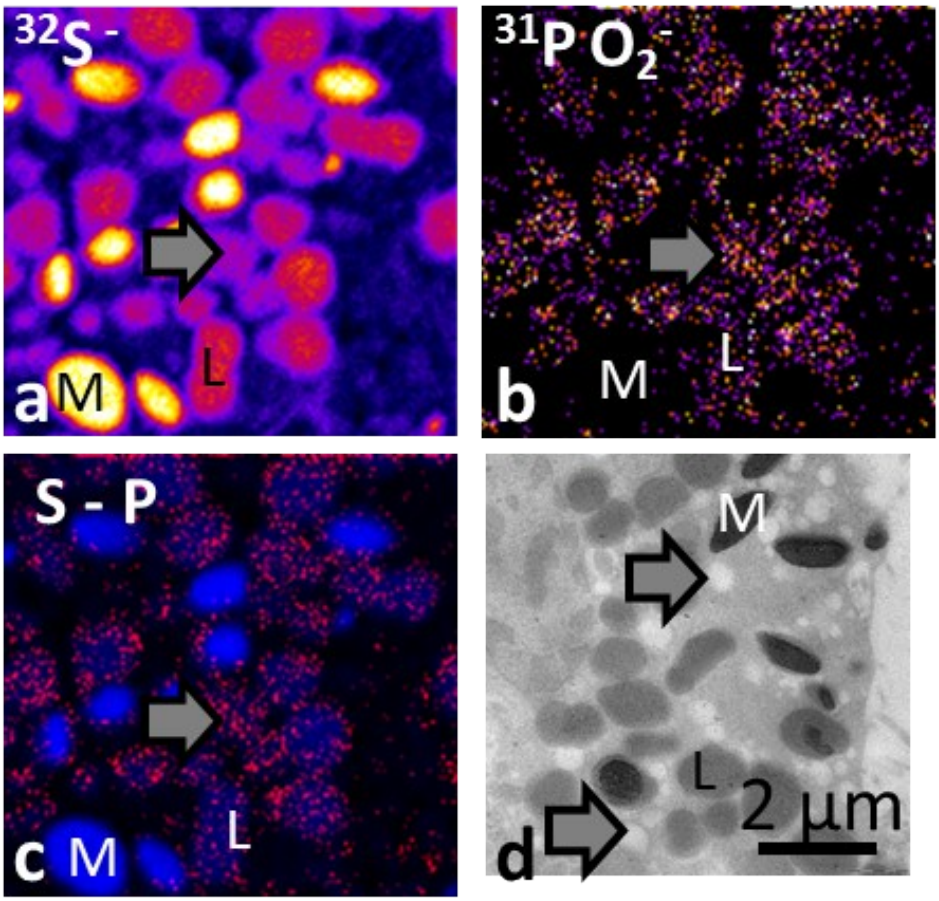
Electronic Supplementary Material (ESI) for Metallomics.

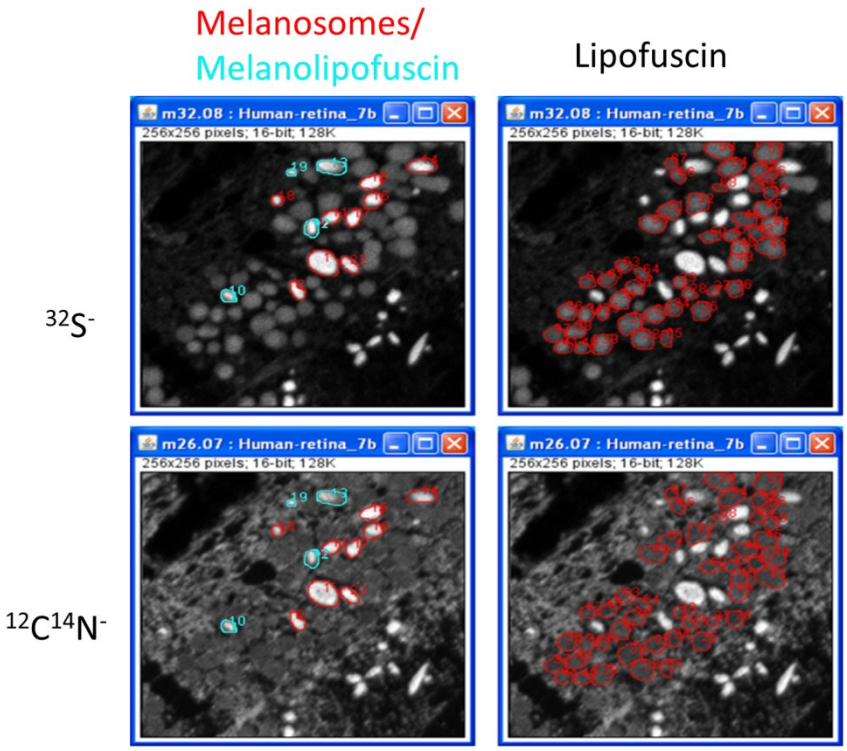
Supplementary Figures



Suppl. Figure 1: Nano-SIMS maps of FeO^-, Cu^- and ZnO^- and respective counts per pixel values for the trace elements Zn and Fe, obtained with the Cs^+ source. As the counts/pixel values are below the detection limit of about 1-2 cts/pixel, the maps are rather noisy and the data are not included in the main text. In contrast, the counts/pixel values for the Cu^- map (displayed here again for comparison), which was above the detection limit, can be obtained in Figure 8 in the main text. Note that although mapping shows a noisy signal for ZnO^-, binning and single spot spectroscopic analysis can be performed and yield proper signals.



Suppl. Figure 2: Differentiating lipofuscin granules from lysosome-like vesicles in SIMS maps of the human RPE: (a) S map, (b) P map, (c) P-S false color overlay image, (d) EM image. The grey arrow points to a yet unidentified structure that is defined by lower S and higher P content as compared to lipofuscin. It is supposed to be similar to the vesicle like structures in (d).



Suppl. Figure 3: **Exemplary depiction of how regions of interest were selected for melanosomes, melanolipofuscin and lipofuscin granules using sulfur and CN maps, respectively**. Once selected, the area appears in all ion maps of the same measurement and can be used for calculation of counts/pixel values for statistical analysis.