

Supporting Info to

**Extravasation of Pt-based Chemotherapeutics – Bioimaging of their
Distribution in Resectates by Laser Ablation Inductively Coupled Plasma
Mass Spectrometry (LA-ICP-MS)**

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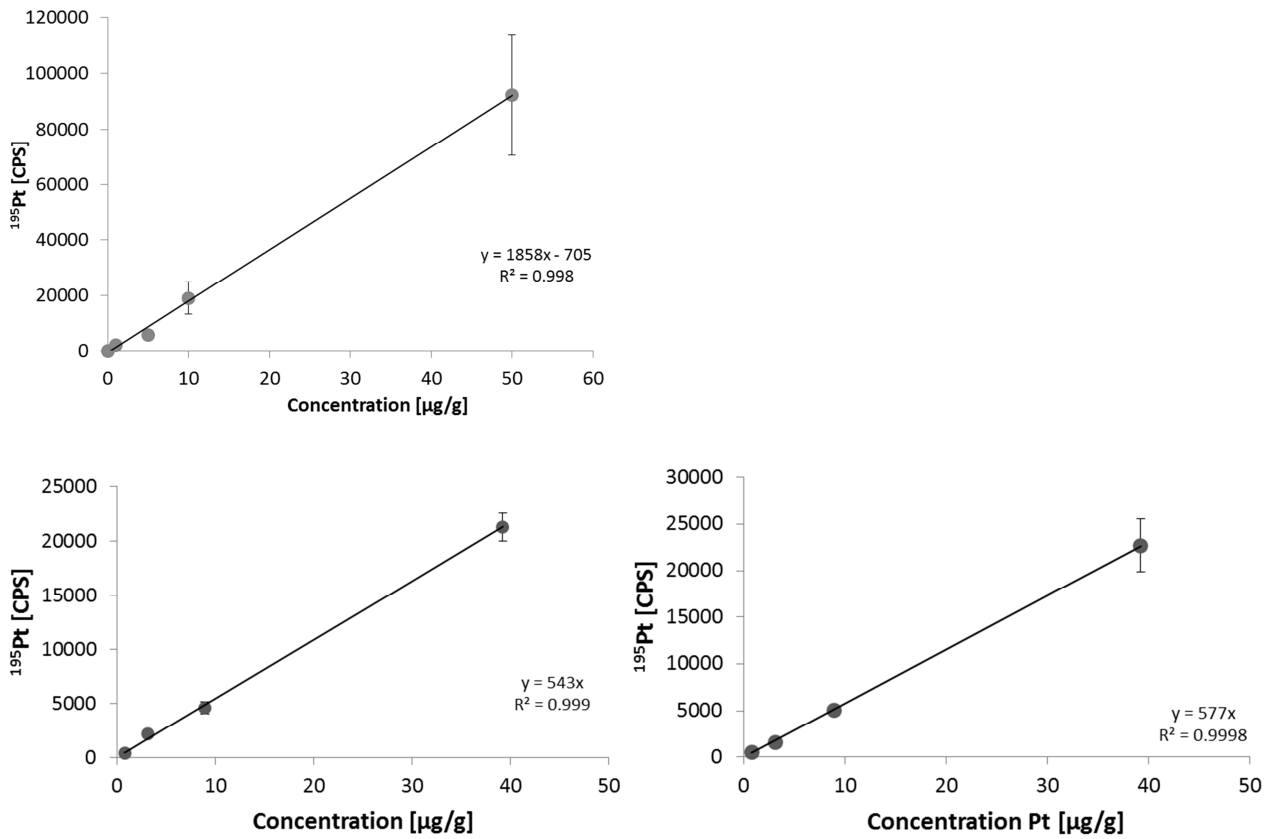


Figure S1: Calibration for quantitative LA-ICP-MS, valid for patient 1 (sample G5, top) and patient 3 (nerve tissue, bottom left and necrotic tissue, bottom right). In order to evaluate fluctuations in the ablation process, which we expect to impact the spatially resolved quantification to a greater extent in lower concentrations, we decided to prepare more standards of lower levels.¹

Table S1: Conditions used for microwave-assisted acid digestion of samples and standards

Step	t [min]	Max. E [W]	T [°C]
1	2	700	85
2	5	700	135
3	4	1000	180
4	12	1000	180
Ventilation	10	0	

Table S2: Comparison between theoretical Pt concentrations in spiked liver homogenates and experimentally determined values upon microwave digestion/ICP-MS. Homogenation was conducted in multiple steps: aliquots were removed from the starting mixture and further homogenized in smaller portions and stored in Eppendorf tubes. To account for a bias, the same tube was used for experimental determination of the Pt-concentration and for preparation of cryosections.

Concentration [µg/g]	
Pt (theoretical)	Pt (experimental)
0.98	0.79 ± 0.05
4.96	3.17 ± 0.70
9.70	8.93 ± 0.10
45.53	39.24 ± 0.92

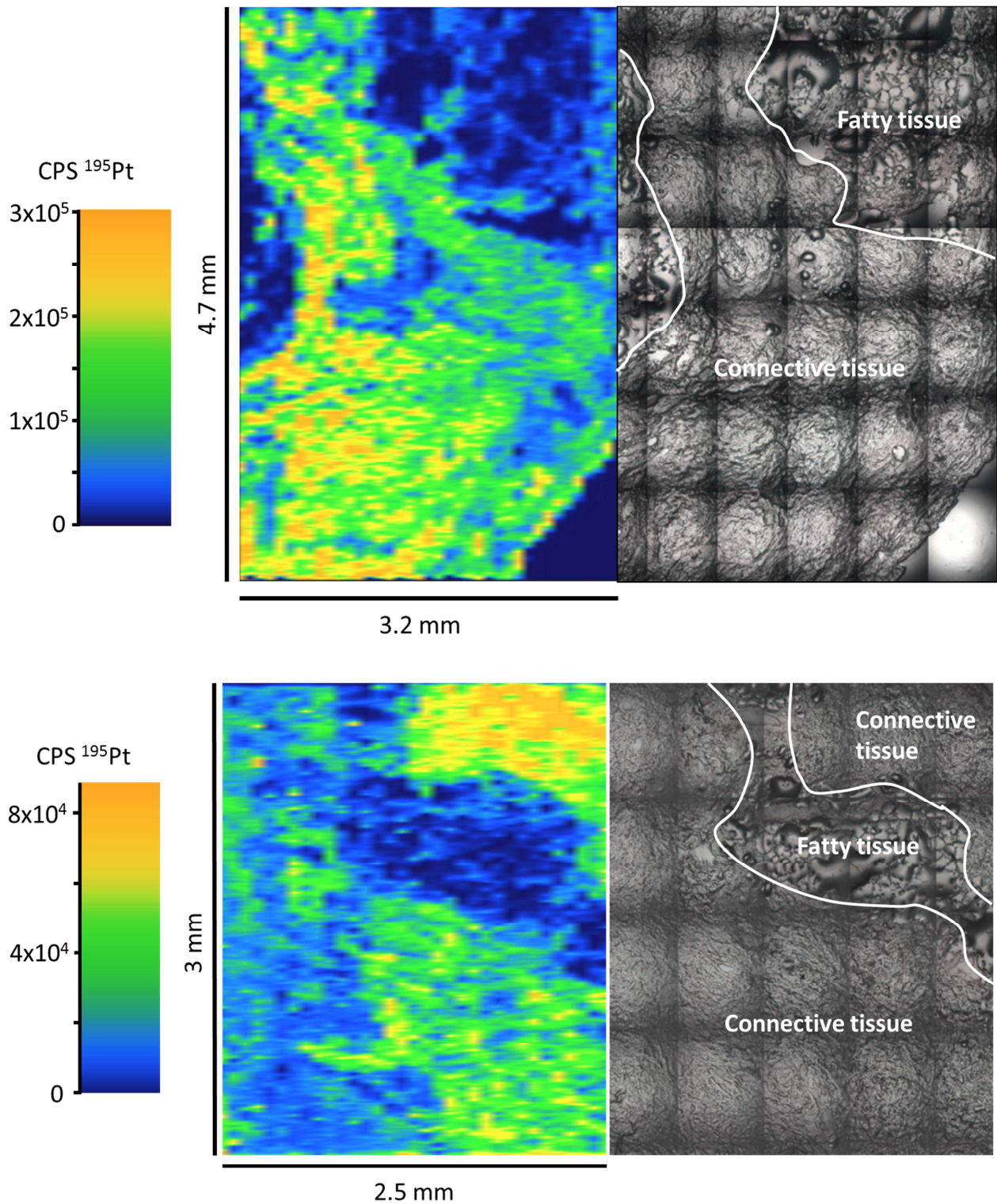


Figure S2: Patient 1, Sample G2 (top) and G3 (bottom). Greyscale images were recorded prior to ablation, ^{195}Pt was recorded and the raw-counts (counts per second, CPS) are shown. Connective tissue (greenish and orange) exhibits higher concentrations than fatty tissue (blue).

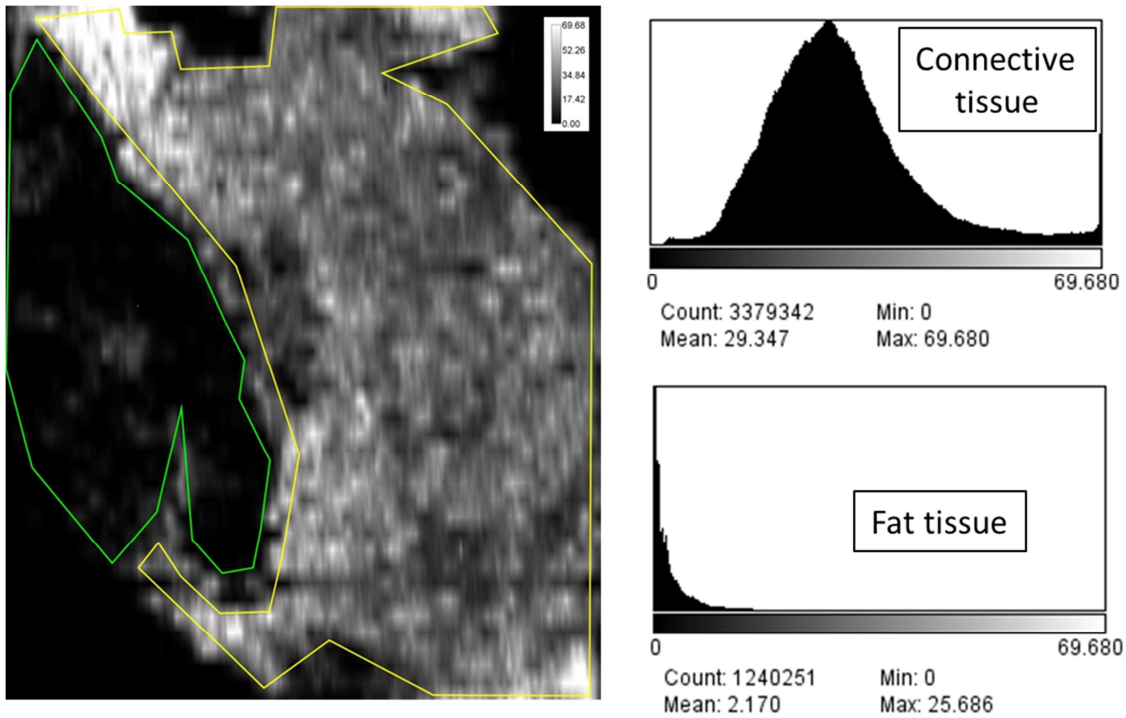


Figure S3: Greyscale image used for quantification via ImageJ of Sample G1 (patient 1). The green area corresponds to fat tissue, the yellow one to connective tissue. The corresponding histograms are given on the right: connective tissue (top) and fat tissue (bottom).

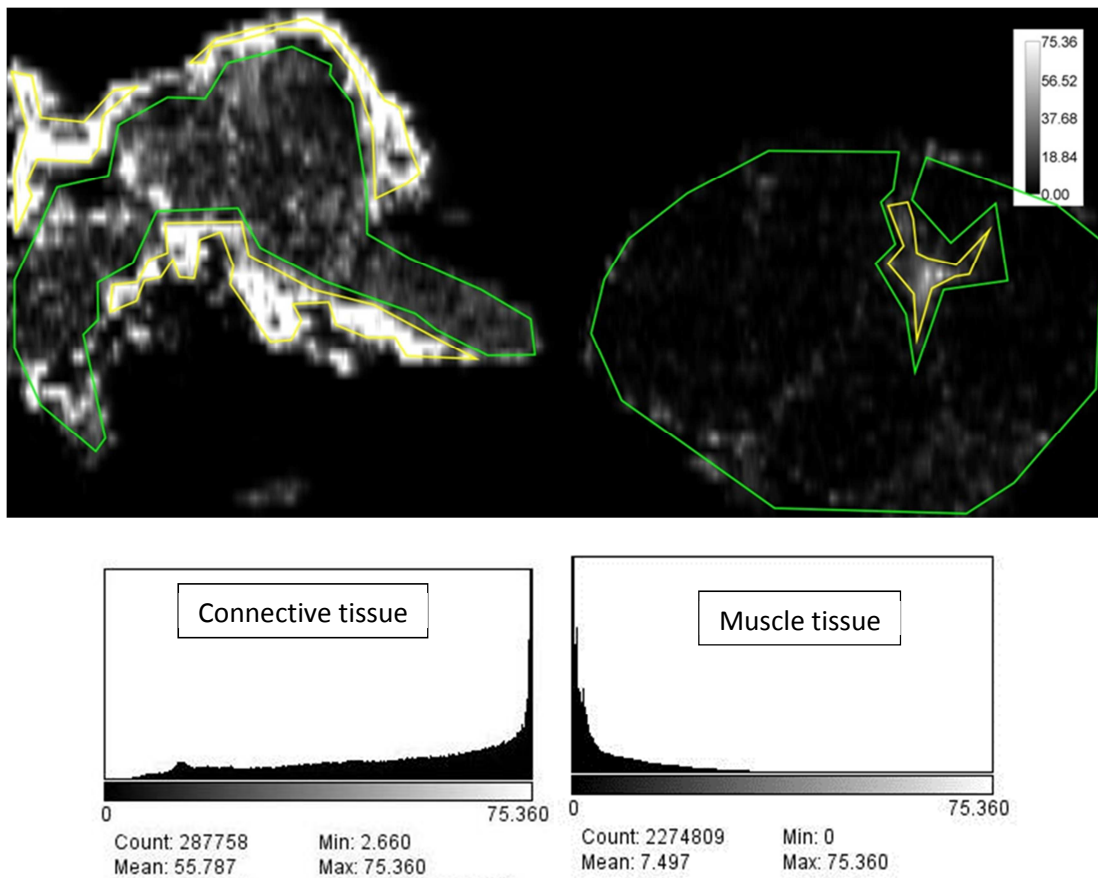


Figure S4: Greyscale image used for quantification via ImageJ of Sample G5 (patient 1). The green area corresponds to muscle tissue, the yellow area delineates connective tissue. The corresponding histograms represent Pt distributions in connective tissue (left) and muscle tissue (right).

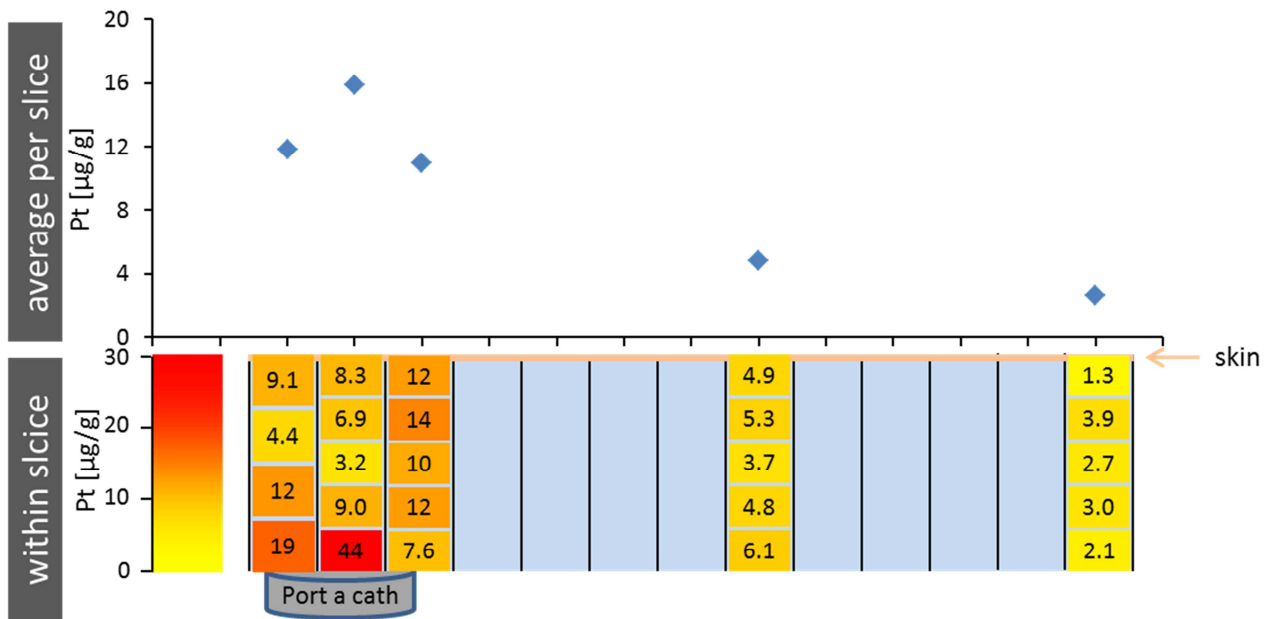


Figure S5: Concentration of Pt determined by microwave assisted digestion following quantification by ICP-MS. Fatty tissue of patient 2 was divided into small pieces and analyzed individually; the corresponding concentration per sample (in $\mu\text{g/g}$) is given in the scheme. Additionally, the absolute values were converted to a color scheme to simulate “imaging-like data” for the ease of interpretation (bottom). Average Pt concentrations for each stripe (i.e. from the skin to the fascia of the muscle) were calculated (top) revealing highest concentrations of Pt close to the port-a-cath.

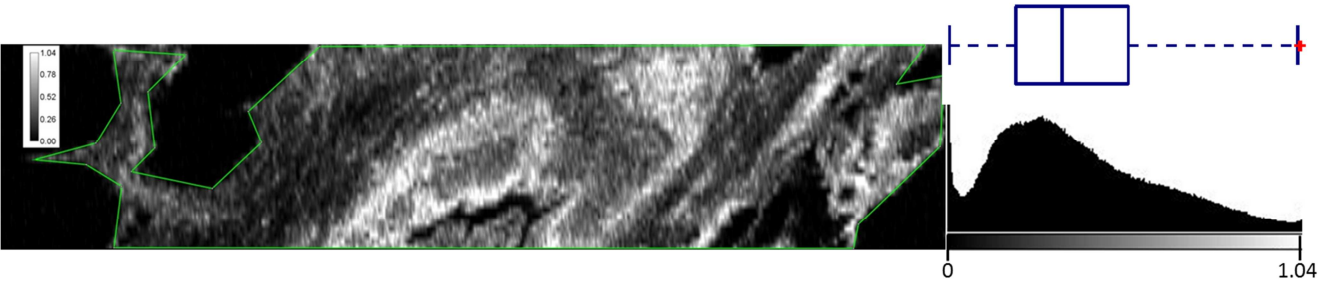


Figure S6: Greyscale image of the Pt distribution in the necrotic area of a peripheral extravasation of cisplatin corresponding to Figure 4 in the main paper. The area used for averaging by ImageJ is encircled in green (left) and the corresponding histogram states the distribution of the concentration (right). Median ($0.33 \mu\text{g/g}$), first ($0.2 \mu\text{g/g}$) and third quartile ($0.53 \mu\text{g/g}$) of the distribution are assigned in boxplot on top of the histogram.

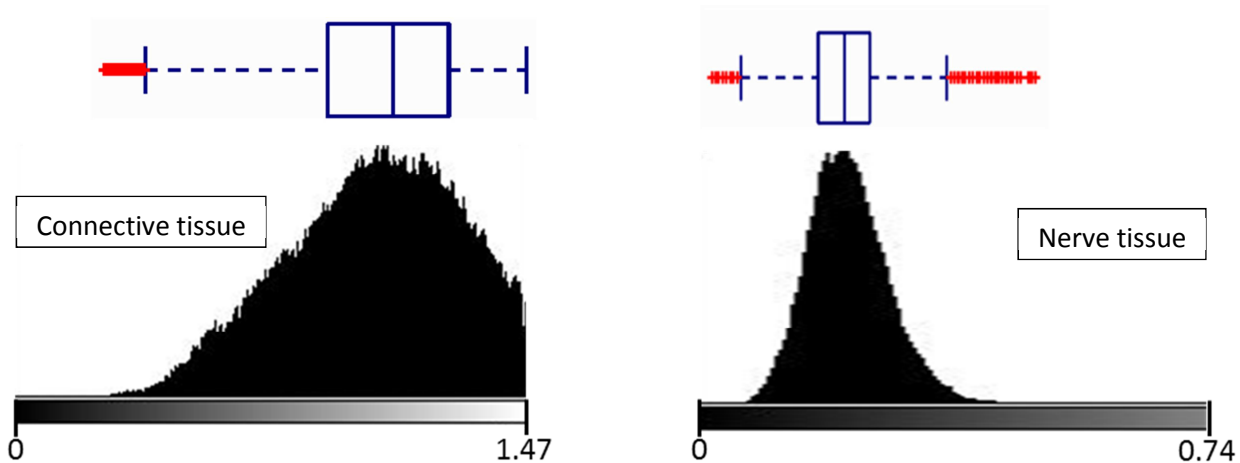
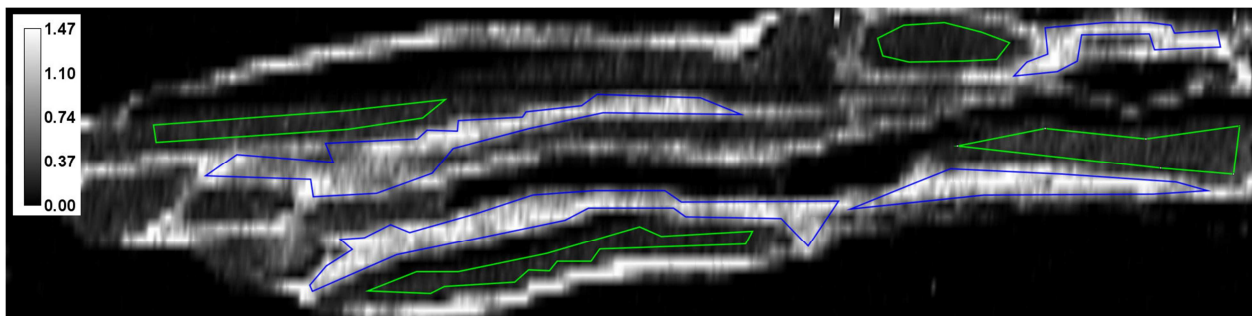


Figure S7: Greyscale image of the Pt distribution in a peripheral nerve, corresponding to Figure 5 in the main paper. The areas of nerve tissue (green) and connective tissue (blue) used for averaging by ImageJ as well as the resulting histograms (bottom) and corresponding boxplots.

References:

1. A. E. Egger, S. Theiner, C. Kornauth, P. Heffeter, W. Berger, B. K. Keppler and C. G. Hartinger, *Metallomics*, 2014, 6, 1616-1625.