Supporting Information

Biosafety and biokinetics of noble metals: the impact of their chemical nature

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Figure S1. A) Quantification of spontaneous tail coiling at 24hpf in embryos treated with increasing doses of Au, Ag and Pt-NAs. B) Quantification of hatching rate at 2 dpf in embryos treated with increasing doses of Au, Ag and Pt-NAs. C) Bright field images of embryos at 72hpf. Red arrow points to an example of cardiac edema. Scale bar: 100 μ m. D) Examples of wt heart and no-looped heart morphology at 72hpf. Red dashed segments follow the orientation of the cardiac valve. A=atrium; V=ventricle. Scale bar= 50 μ m. E) Graphs presenting the survival rate overtime of embryos treated with increasing doses of Au, Ag and Pt-NAs. Statistics: for A and B =fisher test, t student test; for E Log-rank (Mantel-Cox) test. All treatments resulted not statistically significant.

Figure S2



Figure S2. Body weight (A), food intake (B), and water intake (C) of the animal models after iv injection of AuNAs. No significant changes were observed in all measured parameters.

Figure S3



Figure S3. Body weight (A), food intake (B), and water intake (C) of the animal models after iv injection of AgNAs. No significant changes were observed in all measured parameters.





Figure S4. Body weight (A), food intake (B), and water intake (C) of the animal models after iv injection of PtNAs. No significant changes were observed in all measured parameters.





Figure S5. DLS measurements on *sg*NAs in blood-mimicking solution over 8 hours under shaking at 4 °C and 37 °C.





Figure S6. Gold biodistribution (%ID/g) in the main organs determined by ICP-MS at the four timepoints: 2, 6, 10, and 21 days after AuNAs iv injection (N=3). In order to better appreciate the trends, some organs are reported with a different scale in the bottom panel.





Figure S7. Silver biodistribution (%ID/g) in the main organs determined by ICP-MS at the four timepoints: 2, 6, 10, and 21 days after AgNAs iv injection (N=3). In order to better appreciate the trends, some organs are reported with a different scale in the bottom panel.



Figure S8. Gold (top), silver (centre) and platinum (bottom) detected every day by ICP-MS in urines and faeces. It is interesting to notice that while gold and platinum are preferentially found in urines, silver is mostly collected in faeces.





Figure S9. Platinum biodistribution (%ID/g) in the main organs determined by ICP-MS at the four time-points: 2, 6, 10, and 21 days after PtNAs iv injection (N=3). In order to better appreciate the trends, some organs are reported with a different scale in the bottom panel.