Electronic Supplementary Material (ESI) for Journal of Materials Chemistry B.

Zinc Selective Oxytocin Based Biosensor

Supporting information

Evgeniy Mervinetsky[1,2#], Israel Alshanski[1,2#], Kiran Kumar Tadi[1,2], Arezoo Dianat[3], Jörg Buchwald[3], Rafael Gutierrez*[,3], Gianaurelio Cuniberti[3,4,5], Mattan Hurevich*[,1,2], and Shlomo Yitzchaik*[,1,2]

[1]Institute of Chemistry and [2]The Center for Nanoscience and Nanotechnology, The Hebrew University of Jerusalem, Jerusalem 91904, Israel.

[3]Institute for Materials Science and Max Bergmann Center of Biomaterials, TU Dresden, 01069 Dresden, Germany.
[4] Dresden Center for Computational Materials Science,
[5] Center for Advancing Electronics Dresden, TU Dresden, 01062 Dresden, Germany

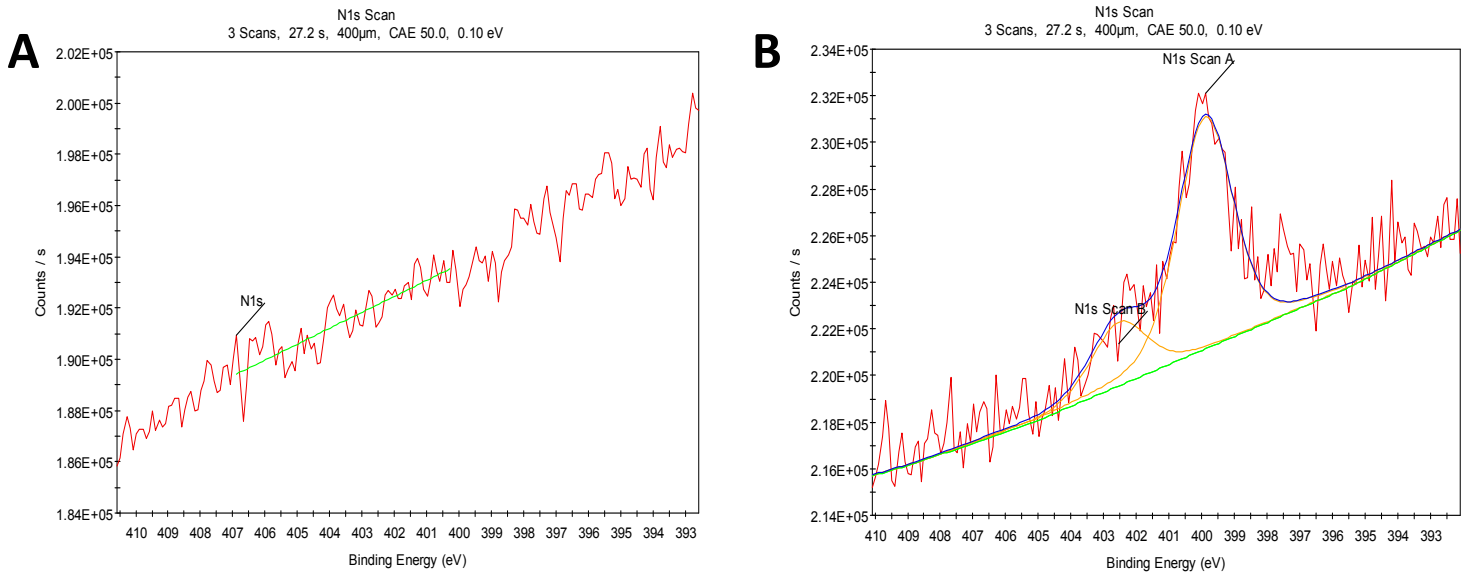

Figure S1: XPS analysis of N 1s on bare Au (A) and Au-LPA-OT (B) samples.

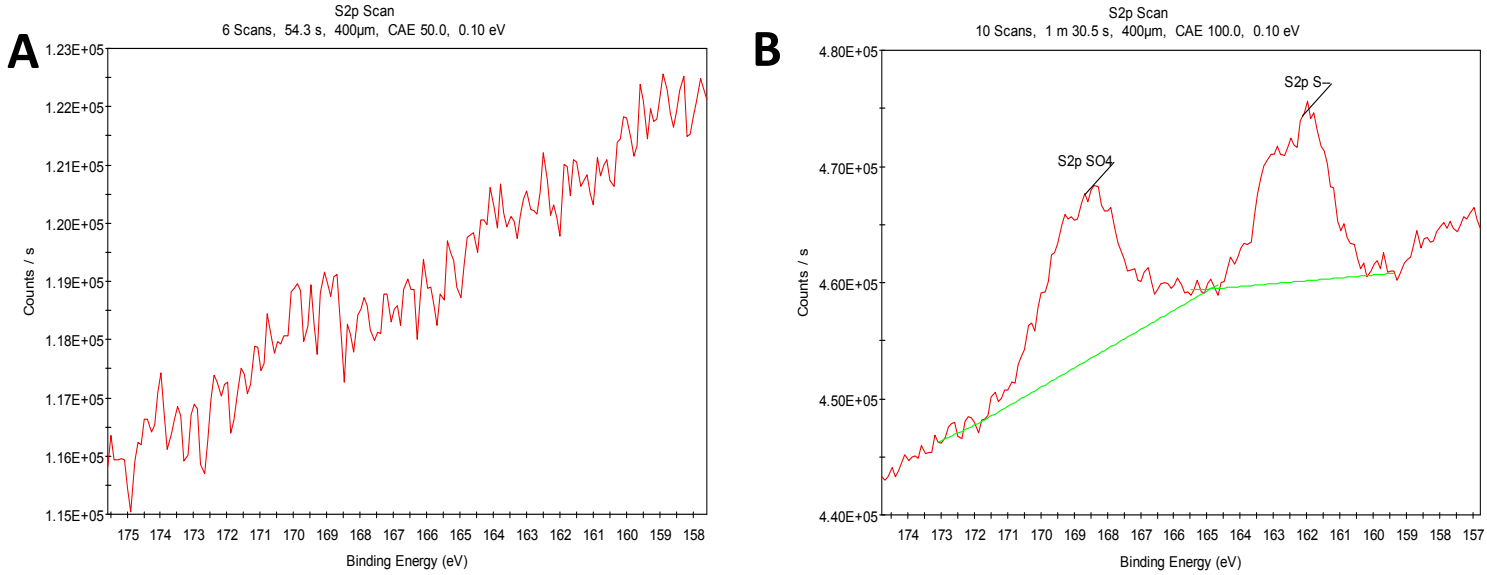

Figure S2: XPS analysis of S 2p on bare Au (A) and Au-LPA (B) samples.

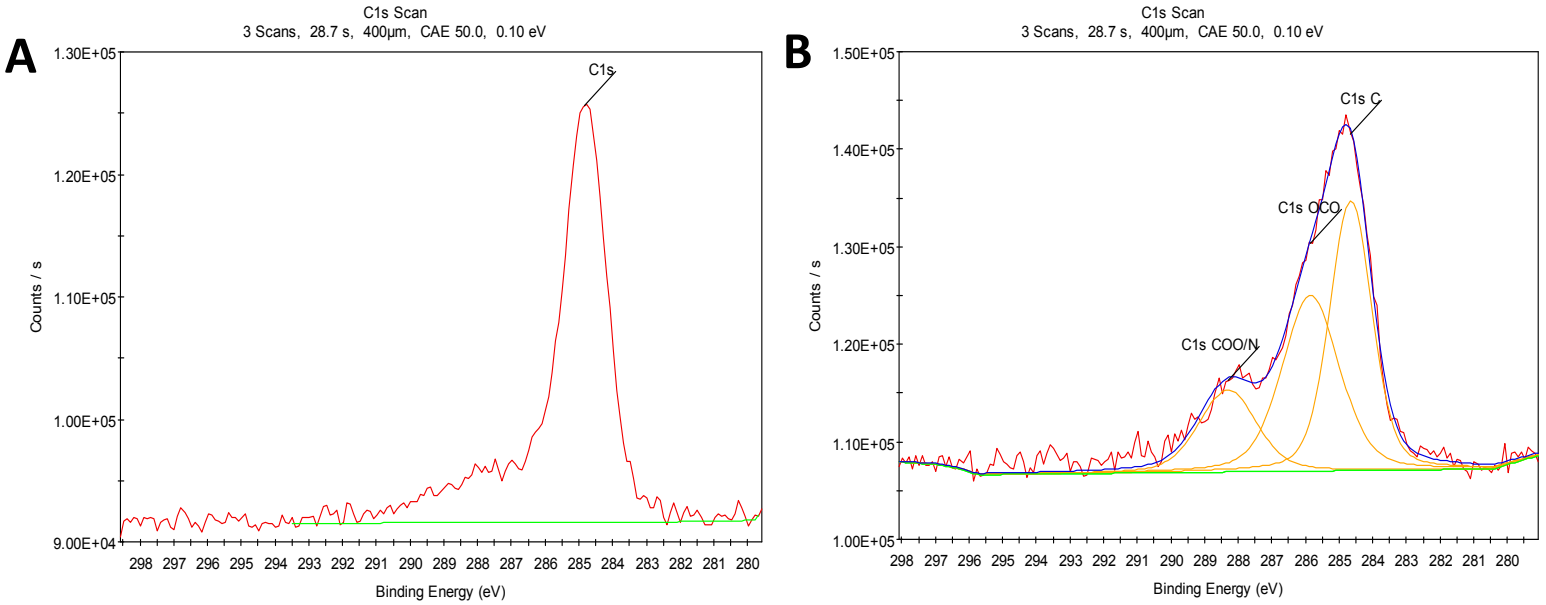

Figure S3: XPS analysis of C1s on bare Au (A) and Au-LPA-OT (B) samples

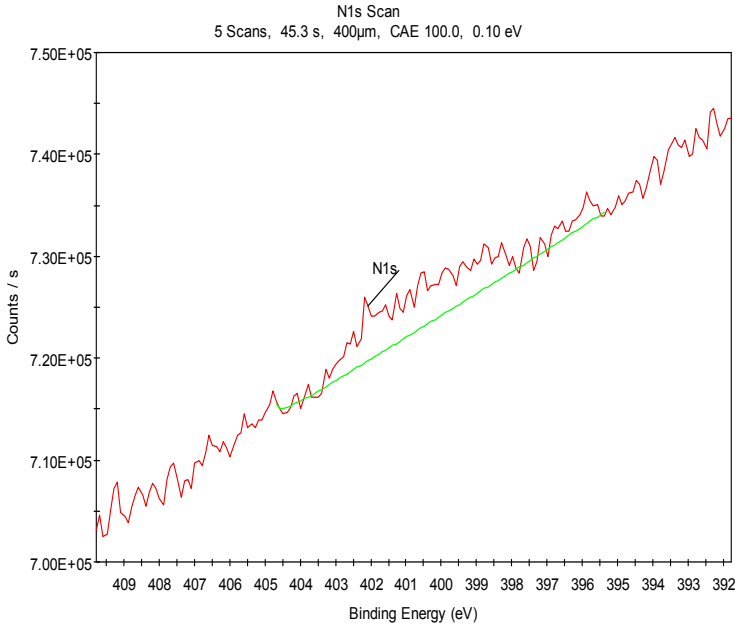

Figure S4: XPS analysis of N1s on Au-LPA sample

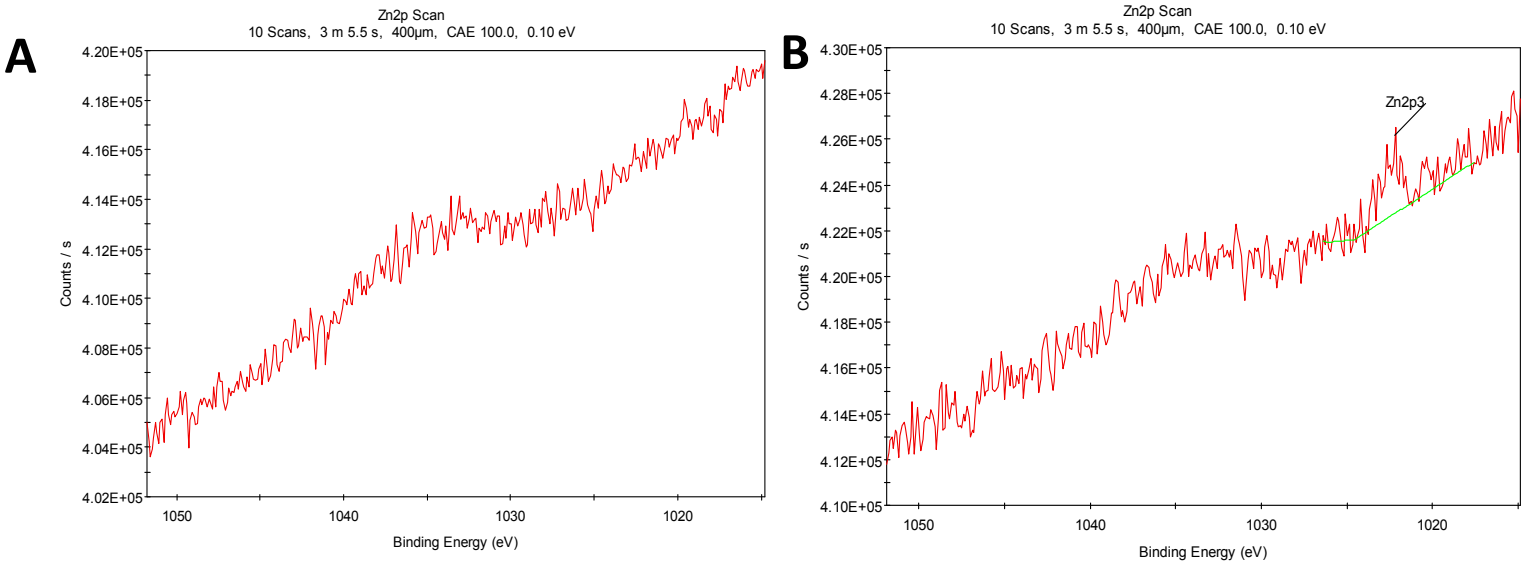

Figure S5: XPS analysis of Zn2p on Au-LPA-OT sensor before (A) and after (B) exposure for Zn^{2+} solution

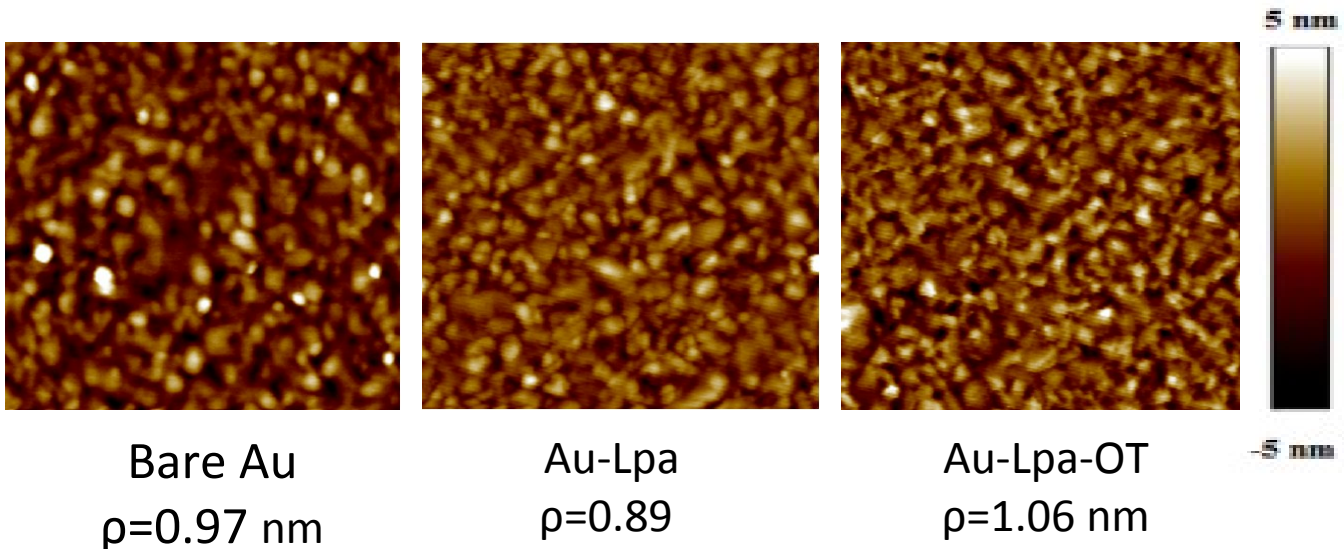

Figure S6: AFM analysis of Bare Au (left) Au-LPA (center) and Au-LPA-OT (right) samples. Each sample is 3 µm*3 µm area

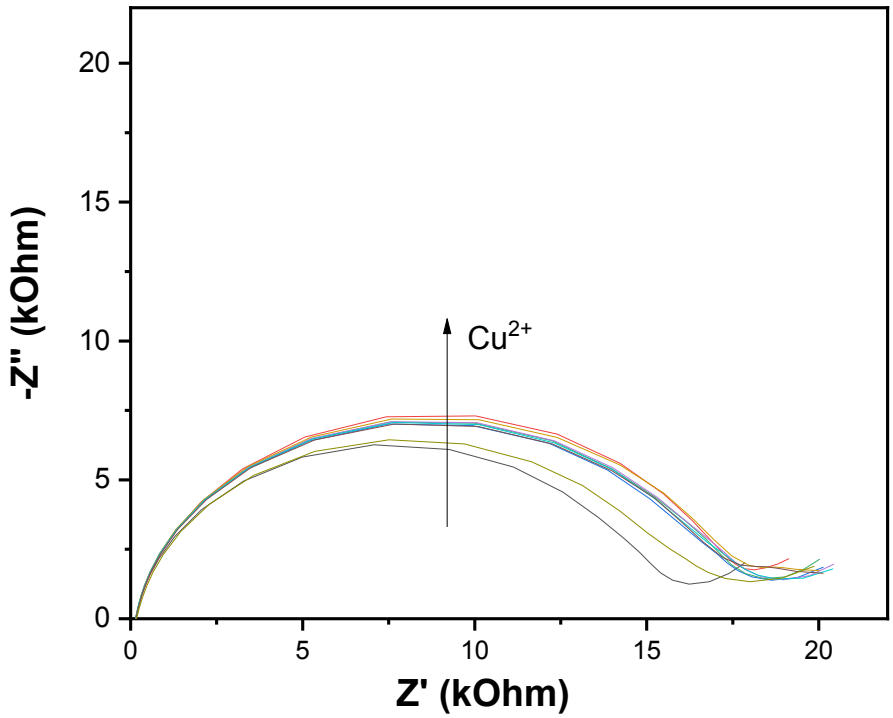

Figure S7: EIS analysis of Au-LPA-OT modified WE with exposure to increasing concentration of Cu^{2+} solution (from 1pM to 10 µM). The Rct doesn't significantly changes with exposure Au-OT electrode to higher Cu^{2+} concentration. The frequencies range set from 100 kHz to 0.1 Hz with E_{we}=0.21 V according Ag/AgCl reference electrode. All EIS scans were done in EIS solution of 5.0 mM $K_3[Fe(CN)_6]$, 5.0 mM $K_4[Fe(CN)_6]$ (RedOx species); and 0.1 M of KCl as supporting electrolyte in 50 mM AAB solution.

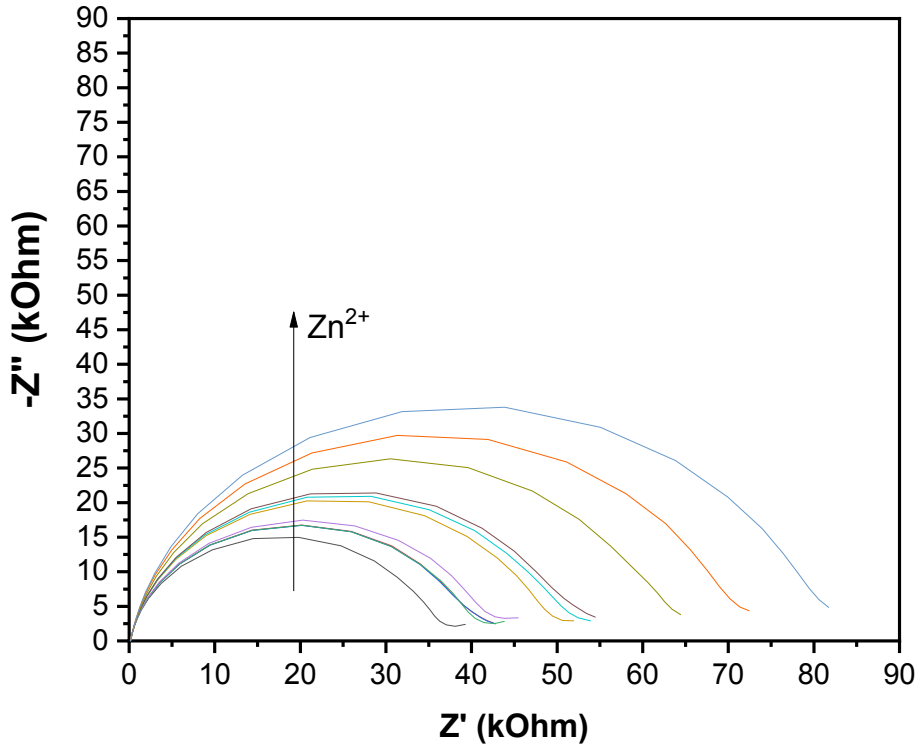

Figure S8: EIS analysis of Au-LPA-OT modified WE with exposure to increasing concentration of Zn^{2+} solution (from 1pM to 10 μM). The Rct increased with exposure Au-OT electrode to higher Cu^{2+} concentration. The frequencies range set from 100 kHz to 0.1 Hz with E_{we}=0.21 V according Ag/AgCl reference electrode. All EIS scans were done in EIS solution of 5.0 mM $K_3[Fe(CN)_6]$, 5.0 mM $K_4[Fe(CN)_6]$ (RedOx species); and 0.1 M of KCl as supporting electrolyte in 50 mM AAB solution.

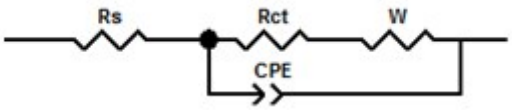

Figure S9: Equivalent circuit for EIS fitting. Q represents a constant phase element, which describes a non-ideal capacitor.