Supporting Information

pH-induced transformation of captopril-capped Au_{25} to brighter Au_{23} nanoclusters

Magdalena Waszkielewicz[a], Joanna Olesiak-Banska[a*], Clothilde Comby-Zerbino[b], Franck Bertorelle[b], Xavier Dagany[b], Ashu K. Bansal [c], Muhammad T.Sajjad[c], Ifor D.W. Samuel[c], Zeljka Sanader[f], Miroslawa Rozycka [d], Magdalena Wojtas[d], Katarzyna Matczyszyn[a], Vlasta Bonacic-Koutecky[e,g], Rodolphe Antoine[b], Andrzej Ozyhar[d], Marek Samoc[a]

a. Advanced Materials Engineering and Modelling Group, Faculty of Chemistry, Wroclaw University of Science and Technology, Wybrzeze Wyspianskiego 27, 50-370 Wroclaw, Poland
b. Univ Lyon, Université Claude Bernard Lyon 1, CNRS, Institut Lumière Matière, UMR 5306 F-69622, Lyon, France
c. Organic Semiconductor Centre, SUPA, School of Physics and Astronomy, University of St. Andrews, St. Andrews, KY16 9SS, United Kingdom
d. Department of Biochemistry, Wroclaw University of Science and Technology, Wybrzeze Wyspianskiego 27, 50-370 Wroclaw, Poland
e. Center of Excellence for Science and Technology-Integration of Mediterranean region (STIM) at Interdisciplinary Center for Advanced Sciences and Technology (ICAST), University of Split, Meštrovićevo šetalište 45, HR-21000 Split, Republic of Croatia
f. Faculty of Science, University of Split, Rudera Boskovica 33, HR-21000 Split, Republic of Croatia
g. Department of Chemistry, Humboldt Universitat zu Berlin, Brook-Taylor-Strasse 2, 12489 Berlin, Germany.
* e-mail: joanna.olesiak-banska@pwr.edu.pl

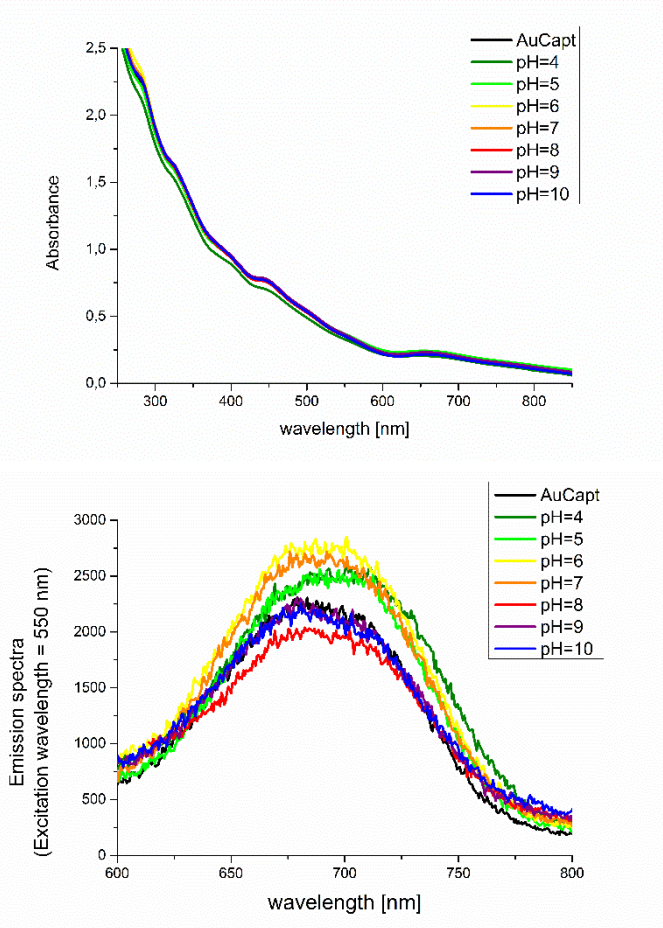

Figure S1. Absorption and emission spectra of AuCapt in a range of pH.

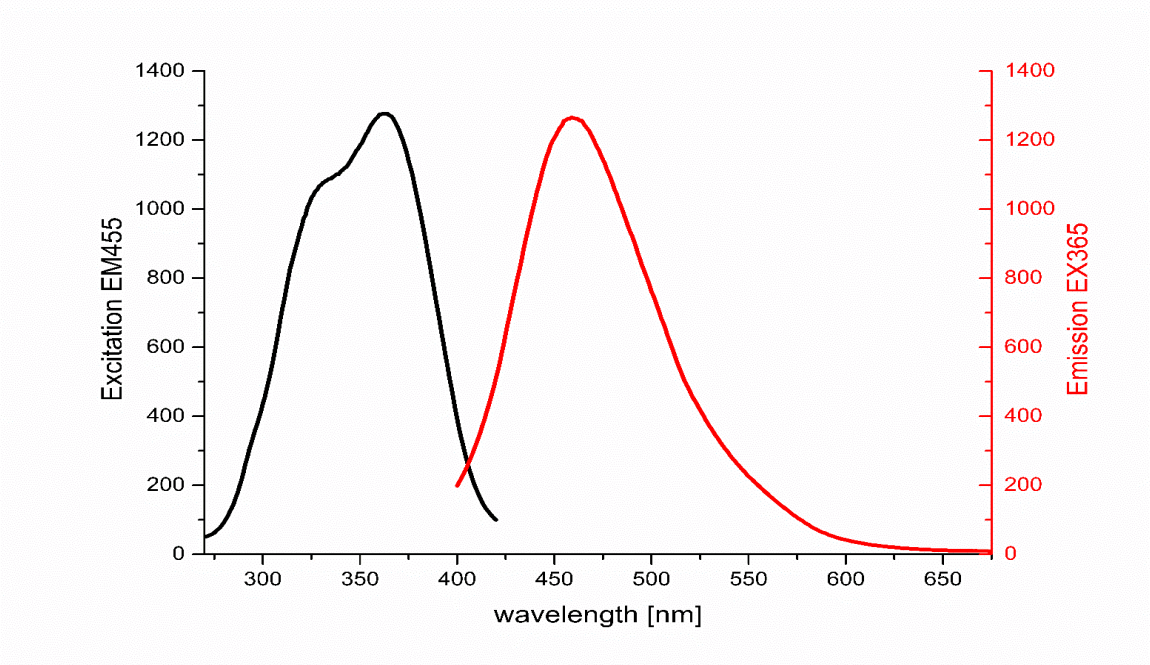

Figure S2. Excitation and emission spectra of Au(I)Capt polymer.

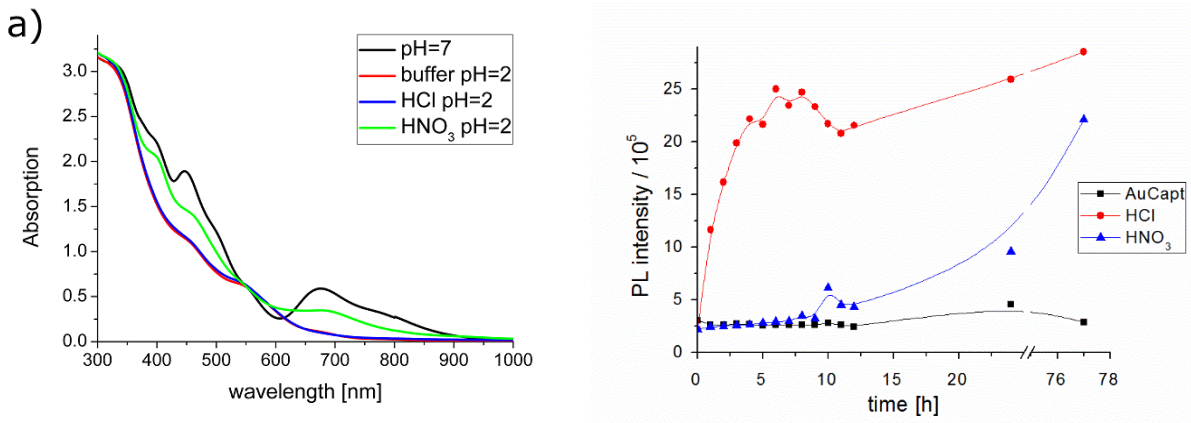

Figure S3. (a) Absorption spectra of AuCapt in buffer solutions (pH = 7 black line, pH = 2 red line) and in HCl and HNO_3 of pH = 2 (blue and green line, respectively). The measurements were taken 24 hours after addition of acid / buffer. (b) PL changes in time for AuCapt in pH = 7, AuCapt in HCl and HNO_3 solutions

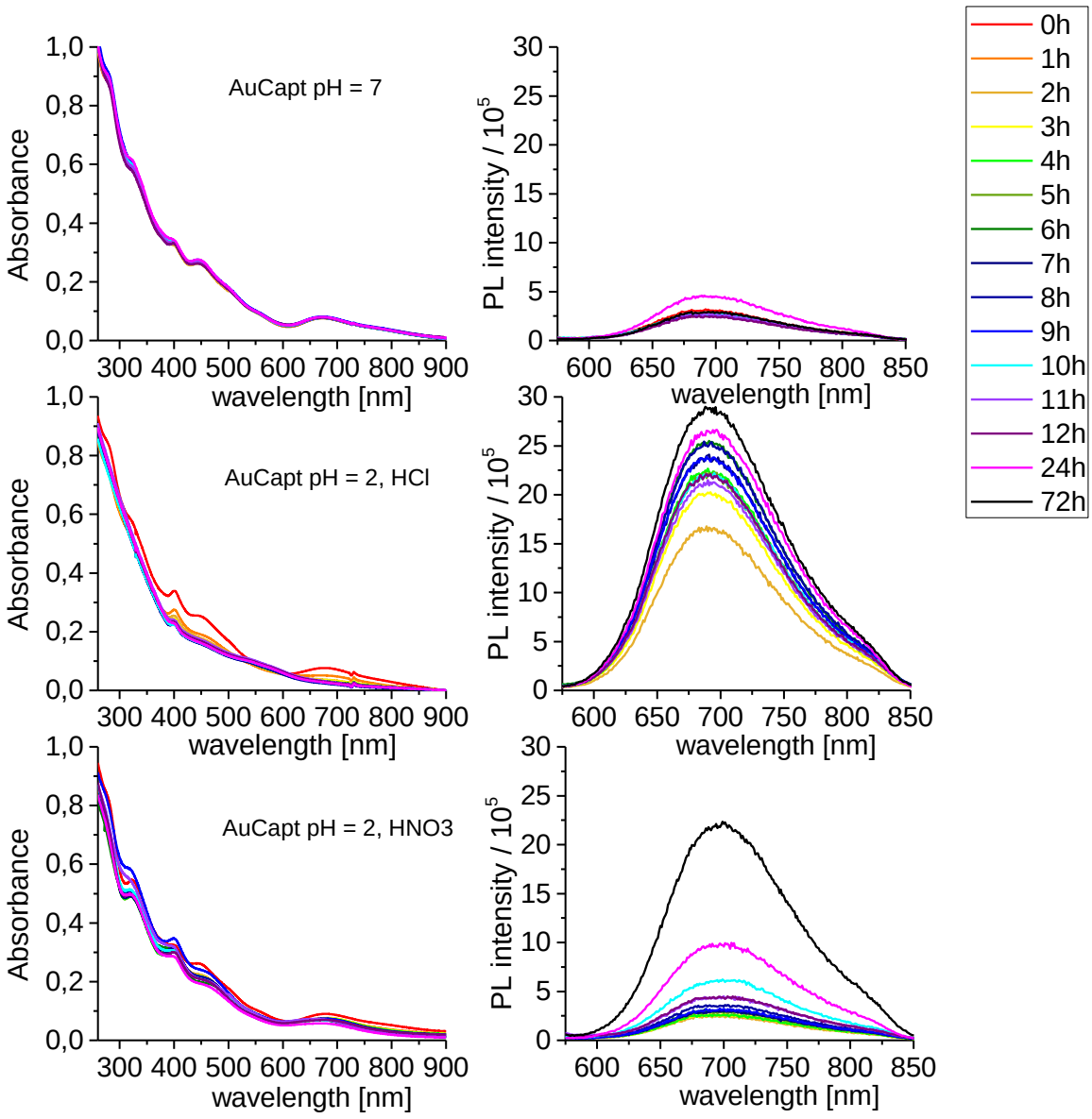

Figure S4. Development of new nanoclusters in solutions of $Au_{25}Capt_{18}$ in acids of pH=2. The first column corresponds to absorption and the second to emission with excitation at 550nm.

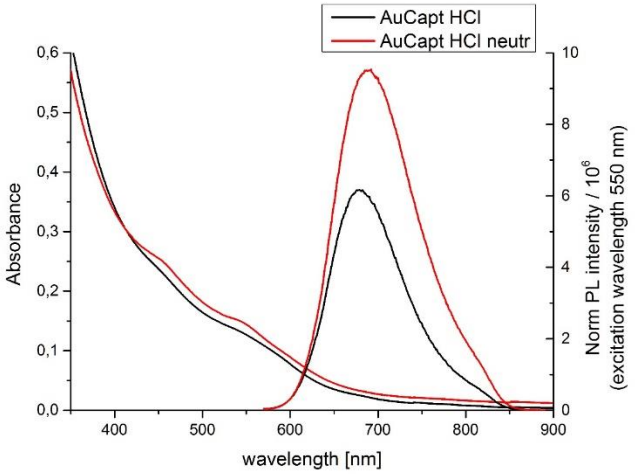

Figure S5. Absorption and emission spectra of AuCapt treated with HCl (black lines) and after neutralization with NaOH (red lines).

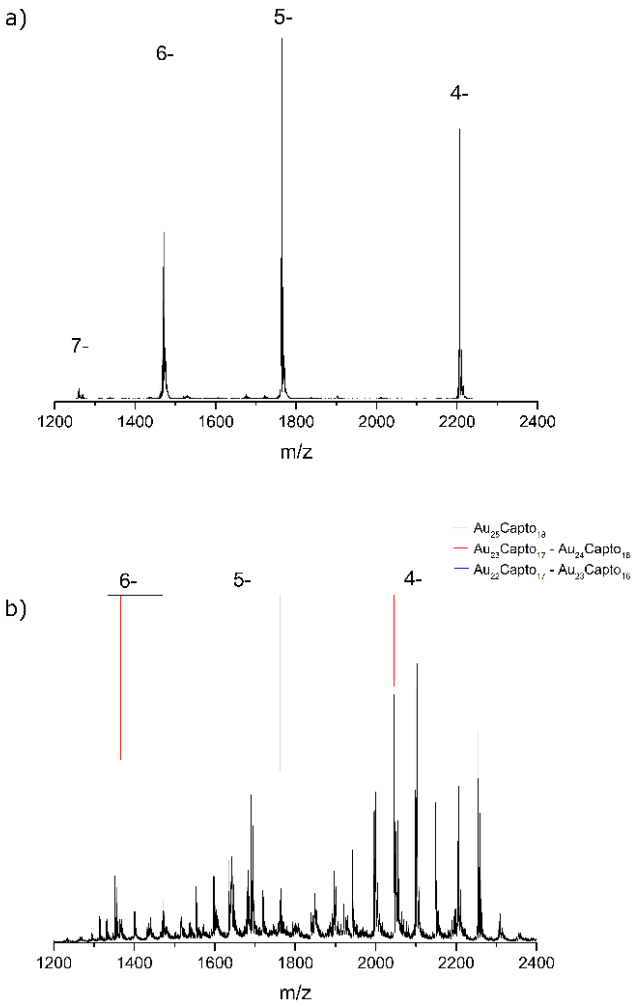

Fig. S6. Electrospray Ionisation Mass Spectrometry. ESI-MS spectra and size assignment of AuCapt NCs before (a) and after pH=2 treatment (b).

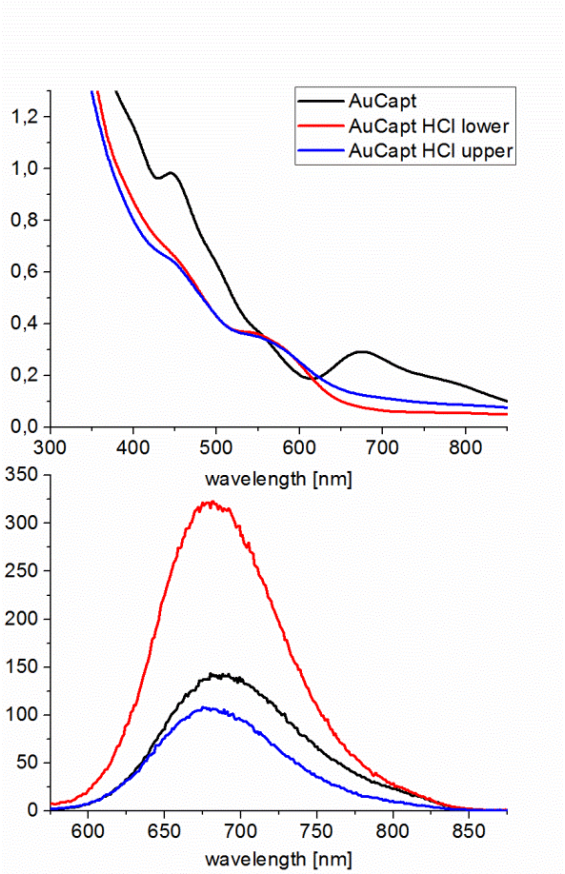

Figure S7. (top) absorption (bottom) emission spectra of separated fractions of AuCapt (black – AuCapt before pH = 2 treatment, red – lower fraction obtained In electrophoresis, blue – upper fraction obtained in electrophoresis).

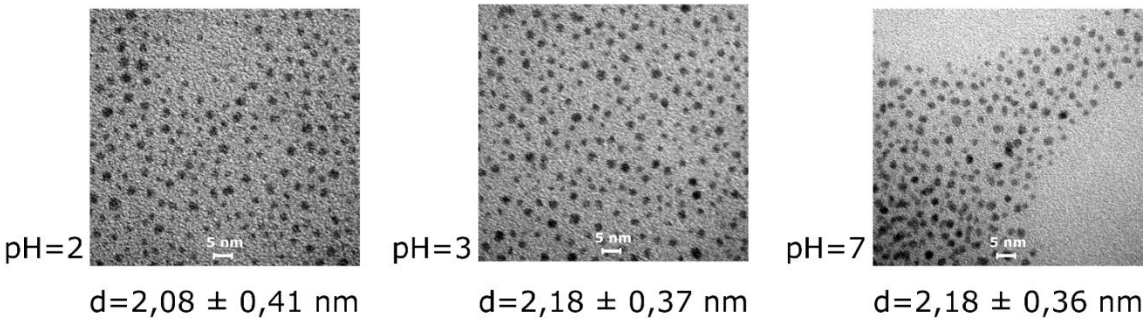

Figure S8. TEM images of AuCapt nanoclusters in pH = 2, 3 and 7.

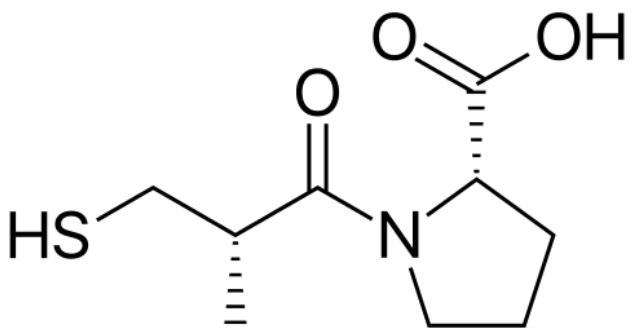

Figure S9. Captopril structure.