

Electronic Supplementary information:

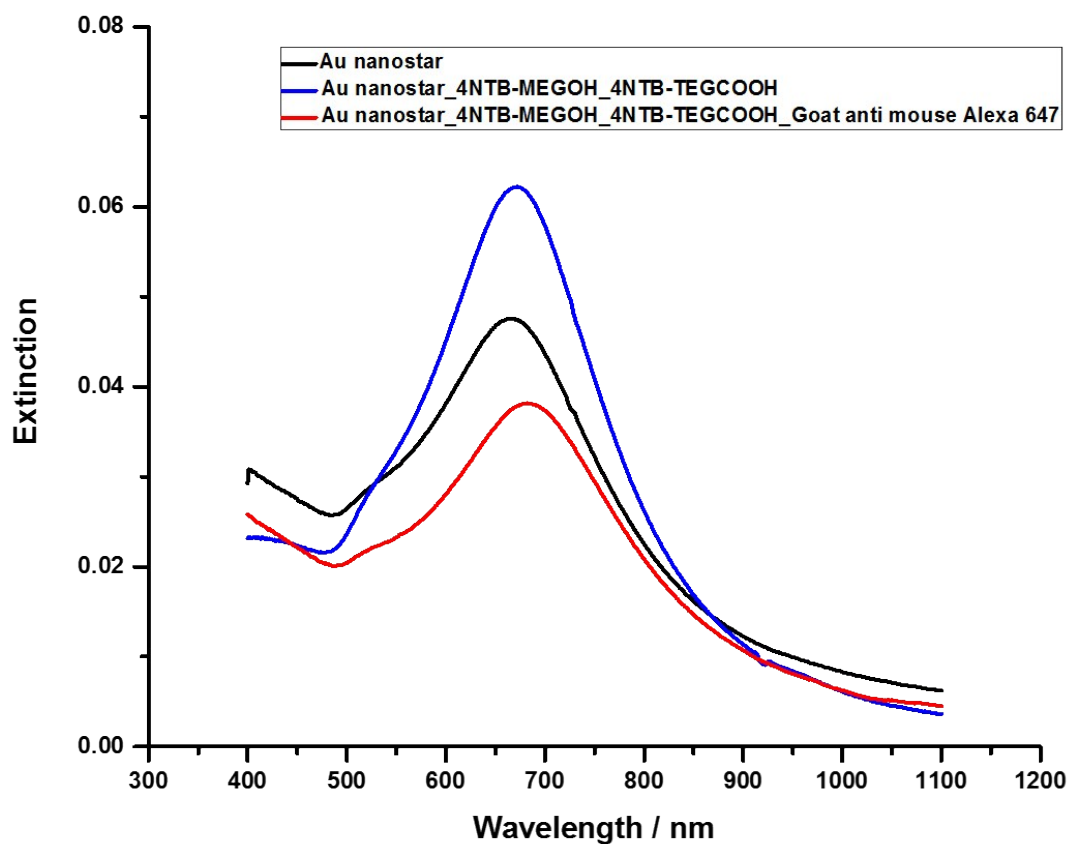
## iSERS Microscopy Guided by Wide Field Immunofluorescence: Analysis of HER2 Expression on Normal and Breast Cancer FFPE Tissue Sections

Xin-Ping Wang<sup>a</sup>, Yuying Zhang<sup>a</sup>, Matthias König<sup>a</sup>, Evanthia Papadopoulou<sup>a</sup>, Bernd Walkenfort<sup>a</sup>, Sabine Kasimir-Bauer<sup>b</sup>, Agnes Bankfalvi<sup>c</sup>, Sebastian Schlücker<sup>a\*</sup>

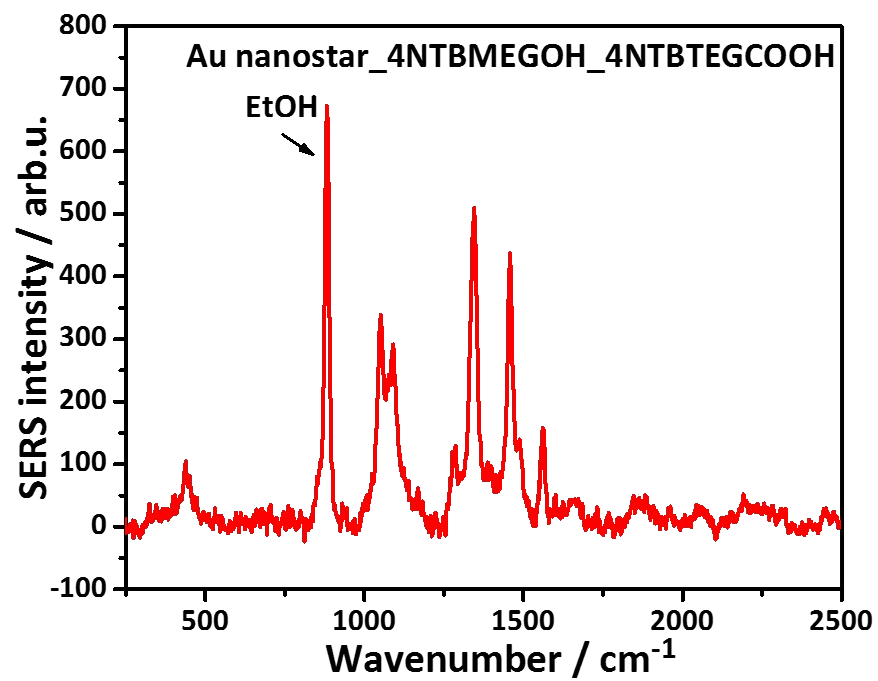
<sup>a</sup> Physical Chemistry, Department of Chemistry and Center for Nanointegration Duisburg-Essen (CENIDE), University of Duisburg-Essen, Universitystr. 5, Essen 45141, Germany. (email: [sebastian.schluecker@uni-due.de](mailto:sebastian.schluecker@uni-due.de)).

<sup>b</sup> Department of Gynecology and Obstetrics, University Hospital Essen, University of Duisburg-Essen, Hufelandstrasse 55, D-45122 Essen, Germany

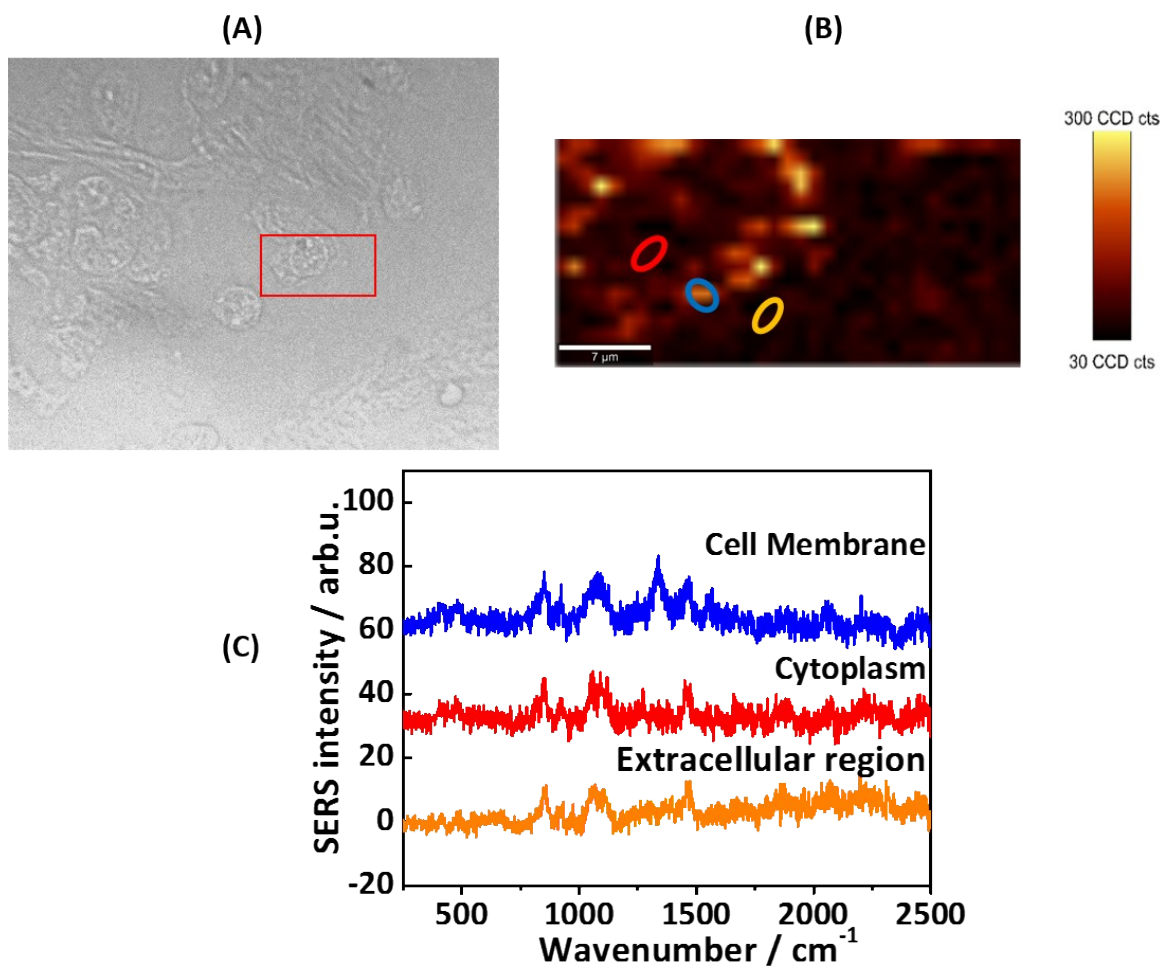
<sup>c</sup> Institute of Pathology, University Hospital Essen, Hufelandstrasse 55, D-45122 Essen, Germany.



**Fig. S1** Extinction spectra of Au nanostars at different stages of molecular functionalization (Raman reporter) and bioconjugation (antibody).



**Fig. S2** SERS spectrum of hydrophilically stabilized (4NTBMEGOH/4NTBTEGCOOH) Au nanostars. The most dominant Raman peak at about 1340  $\text{cm}^{-1}$  in the SERS spectrum is assigned to the symmetric nitro stretching vibration of the Raman reporter 4NTB. The suspension medium is ethanol.



**Fig. S3** Raman imaging of the same sample as in Fig. 4 (main text of the manuscript) after 51 days. (A) Bright field image. (B) SERS-false color image. (C) Normalized SERS spectra recorded from three different locations on the tissue section.