

Supporting Information

For

Enhanced Selectivity by Passivation: Molecular Imprints for Viruses with Exceptional Binding Properties

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ζ-Potential Measurements

The ζ-potential of bare and functionalized (1.5 μmol / mg SP) SPs was measured using Zetasizer Nano from Malvern. Measurements were performed in triplicates.

Table S-1. ζ-Potential of bare and functionalized SPs.

Bare SP	Amino-Functionalized	Glutaraldehyde-Functionalized
-57.17 ± 0.31 mV	32.97 ± 0.25 mV	16.37 ± 0.21 mV

Virus Study via Quantitative PCR

Viral titers were quantified by quantitative polymerase chain reaction (qPCR). To monitor the immobilization of the virus at the functionalized SPs, reaction samples were collected at regular time intervals, and then the remaining amount of virus in the supernatant was quantified via qPCR. Hereby, it was shown (Figure S-1) that after an incubation time of 45 min the remaining target concentration was close to zero and remained constant. Hence, an immobilization time of one hour was determined as appropriate. A more detailed description of this approach is reported elsewhere.¹

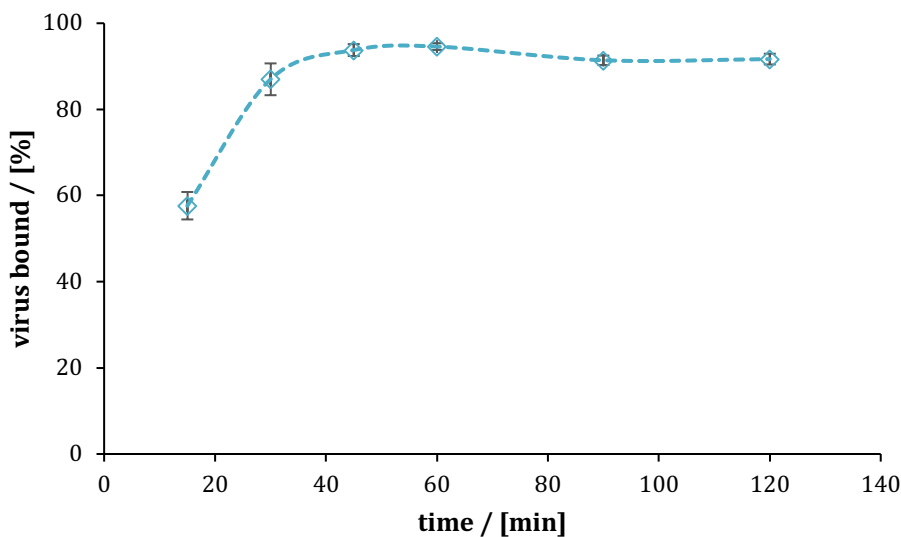


Figure S-1. Amount AdV bound at functionalized SPs prior to the imprinting. | Samples were detected using qPCR and the results were normalized as percentage of the initially added adenovirus amount. Experiments were performed in triplicate.

Determination and Controlling of Polymer Layer Thickness

The second step during the imprinting procedure comprises a thin-layer polymer growth at the surface of the silica particles. To confirm and control the thickness of this layer, focused ion beam (FIB) milled cross-sections of the synthesized particles were imaged via electron microscopy. As Figure S-2 exemplarily shows, the layer-thickness amounts to 20-50 nm.

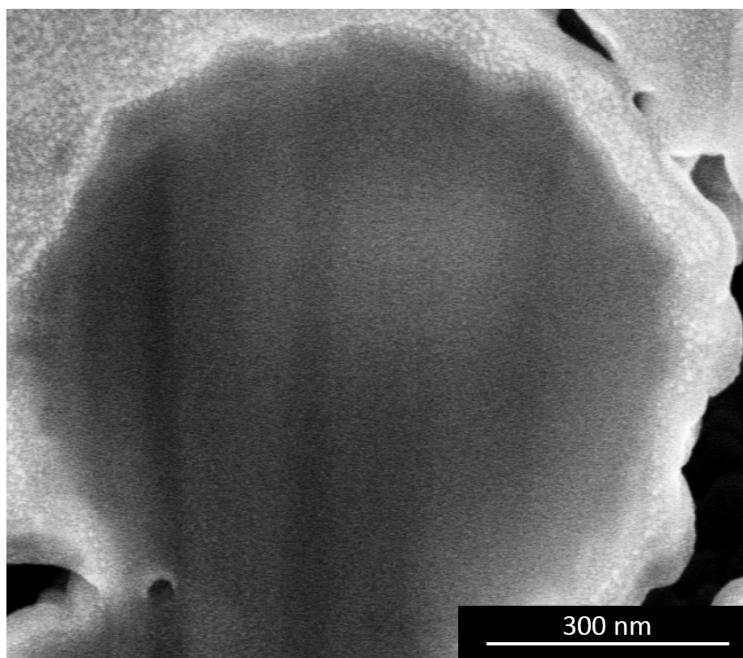


Figure S-2. Secondary electron images of the FIB cross-sections from a virus imprinted particle.

REFERENCES

- (1) Gast, M.; Kühner, S.; Sobek, H.; Mizaikoff, B. *Analyst* **2018**, accepted.