Electronic Supplementary Information File

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                                        CDR1
  1 DVQLQESGGG SVQAGGSLRL SCAASG---Y TIGPYCMGWF RQAPGKEREG   cAbLys3
    QVQLVESGGA LVQPGGSLRL SCAASG---F PVNRYSMRWY RQAPGKEREW   α-GFP
    QVQLVESGGG SVQAGGSLRL SCTASGGSEY SYSTFSLGWF RQAPGQEREA   BCII10

        CDR2
 51 VAAINMGGGI TYYADSVKGR FTISQDNAKN TVYLLMNSLE PEDTAIYYCA   cAbLys3
    VAGMSSAGDR SSYEDSVKGR FTISRDDARN TVYLQMNSLK PEDTAVYYCN   α-GFP
    VAAIASMGGL TYYADSVKGR FTISRDNAKN TVTLQMNNLK PEDTAIYYCA   BCII10

                CDR3
101 ADSTIYASYY ECGHGLSTGG YGYDSWGQGT QVTVSS   cAbLys3
    VNV------- ---------- -GFEYWGQGT QVTVSS   α-GFP
    AVRGYFMRL- -------PSS HNFRYWGQGT QVTVSS   BCII10
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Fig. S1: Sequence alignment of Nb cAbLys3, α-GFP and BCII10. The acidic and basic amino acid residues are shown in red and blue, respectively. The complementarity-determining regions (CDRs) are indicated by black bars above the sequence alignment. The alignment was generated with MAFFT.

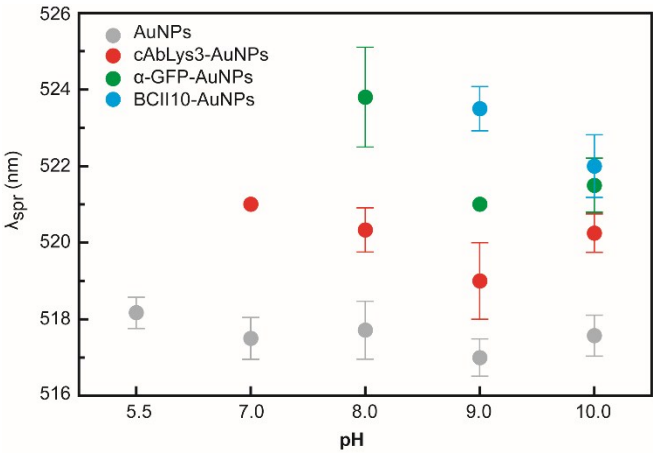

Fig. S2: UV-VIS absorption peak wavelength values of Nbs cAbLys3, α-GFP and BCII10 at distinct pH values. All measurements were performed in triplicate. The color codes for cAbLys3, α-GFP and BCII10 are red, green and blue, resp.

Table S1: SAXS data collection and scattering-derived parameters.

	AuNPs	cAbLys3-AuNPs
Data collection parameters		
Beam line	in-house BioSAXS2000 (Rigaku)	in-house BioSAXS2000 (Rigaku)
Wavelength (Å)	1.54	1.54
q range ($Å^{-1}$)*	0.009 - 0.688	0.009 - 0.688
Concentration (nps ml^{-1}) (mode)	$2x10^{10}$, 10^{10}, $5x10^{9}$, $2.5x10^{9}$ (batch)	$2x10^{10}$, 10^{10}, $5x10^{9}$, $2.5x10^{9}$ (batch)
Exposure time (min)/no. of frames	30/3	30/3
Temperature (°C)	20	20
Structural parameters		
I(0) [from Guinier]	453.29 ± 3.04	398.95 ± 3.47
R_g (Å) [from Guinier]	68.34 ± 0.55	67.47 ± 0.75
I(0) [from *p(r)*]	446.10 ± 1.73	398.00 ± 2.34
R_g (Å) [from *p(r)*]	66.61 ± 0.24	66.84 ± 0.34
I(0) [from GPA]	454.38 ± 0.64	400.83 ± 1.62
R_g (Å) [from GPA]	68.53 ± 0.07	68.10 ± 0.21

	AuNPs	cAbLys3-AuNPs
D_{max} (Å)	217.36	228.45
Porod volume estimate, V_p (Å^3)	1908020	2202830
Elongation ratio	1.09	1.11
Software employed		
Data processing and analysis	PRIMUS, GNOM	PRIMUS, GNOM

Abbreviations: *I(0)*, extrapolated scattering intensity at zero angle; R_g, radius of gyration calculated using either Guinier approximation (from Guinier), the indirect Fourier transform package GNOM [from *p(r)*], or Guinier peak analysis [from GPA]; D_{max}, maximal particle dimension; V_p, Porod volume.

*Momentum transfer $|q| = 4\pi\sin(\theta)/\lambda$