Electronic Supplementary Material (ESI) for Nanoscale.

Supplementary Information for

Size and surface chemistry of nanoparticles lead to a variant behavior in the dynamics of human carbonic anhydrase unfolding

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Table S1: Hydrodynamic Diameter, PDI and Zeta Potential of PS-COOH and Si particles in 10 mM TRIS pH 8.4

Particle Type	Diameter/nm	PDI	ζ-Potential
PS-COOH	26±0.5	0.11	-36±2
	49±5	0.01	-45±1
	94±2	0.01	-48±1
Si	23±0.1	0.1	-33±2
	34±0.6	0.07	-37±2
	90±1	0.12	-50±1

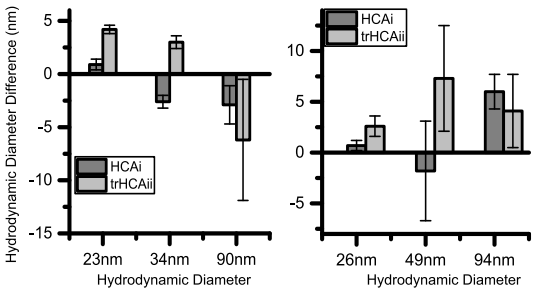

Figure S1: Hydrodynamic diameter difference between protein:nanoparticle complex and nanoparticle control for Left) Silica and Right) PS-COOH nanoparticles

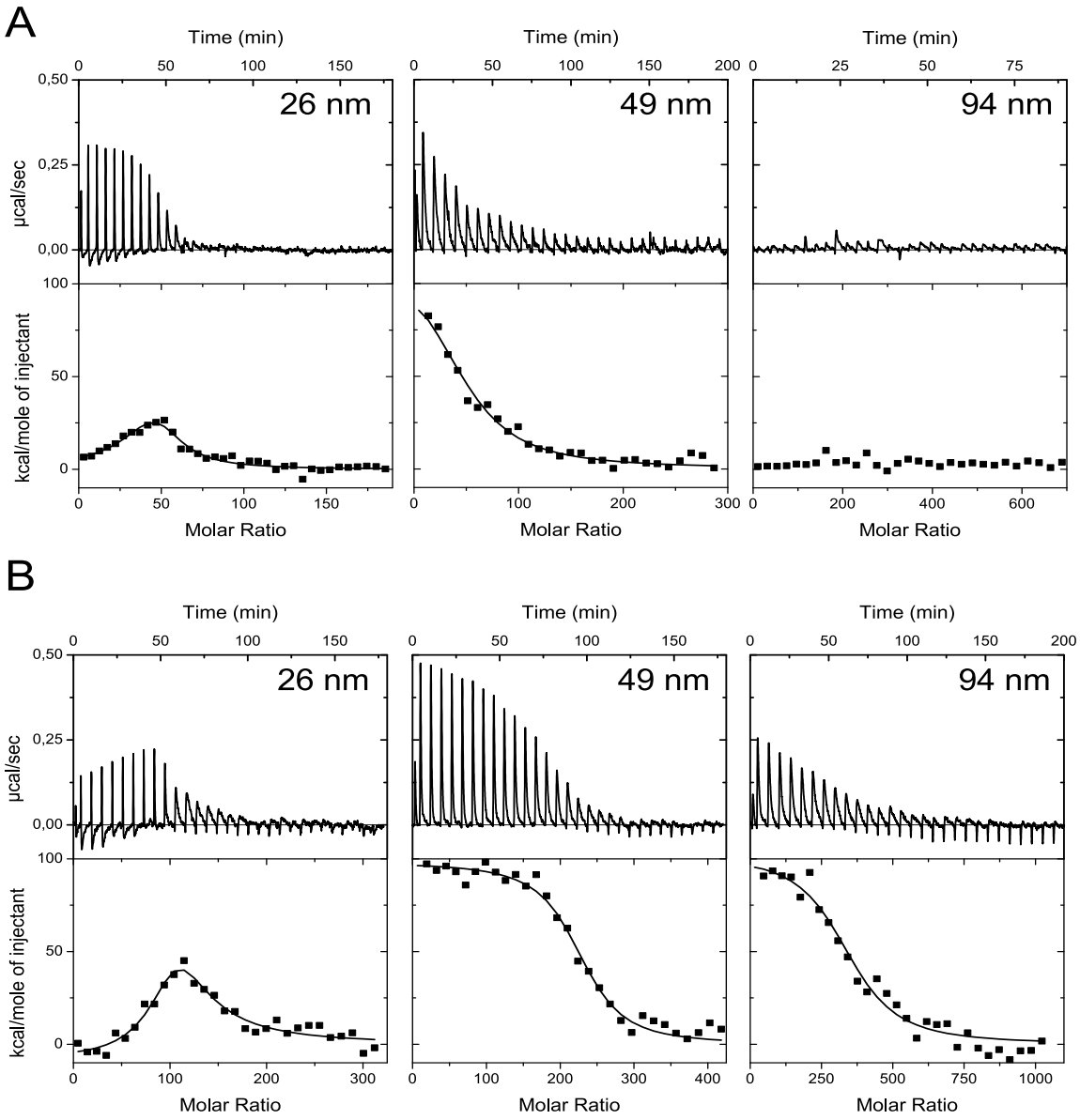

Figure S2: ITC data for the titrations of a) HCAi b)trHCAii into PS-COOH nanoparticles of different sizes in in 10 mM Tris pH 8.4 buffer at 30°C. Each panel shows the raw data on top and the integrated heats in the bottom.

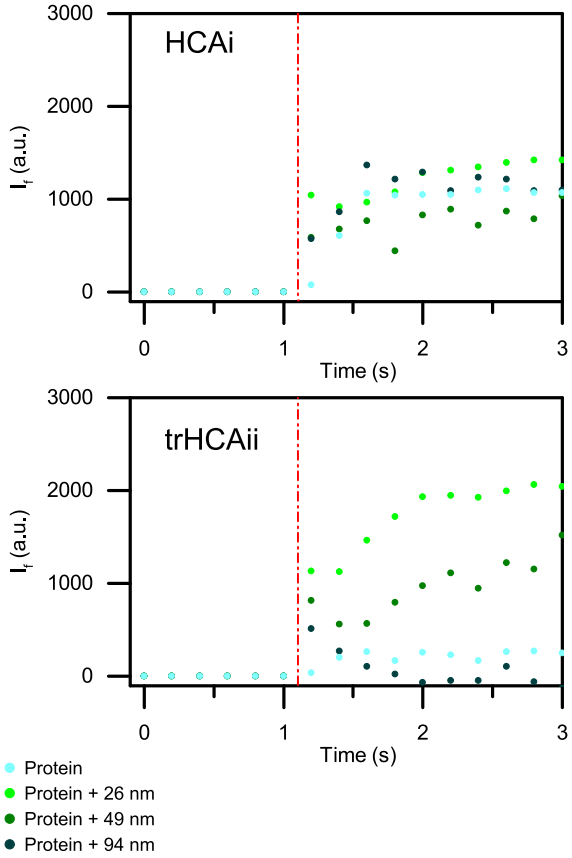

Figure S3: ANS fluorescence in first 3 seconds of the experiment as shown in Fig. 3 in the main text. Red dashed line is the injection point at 1.1 s.

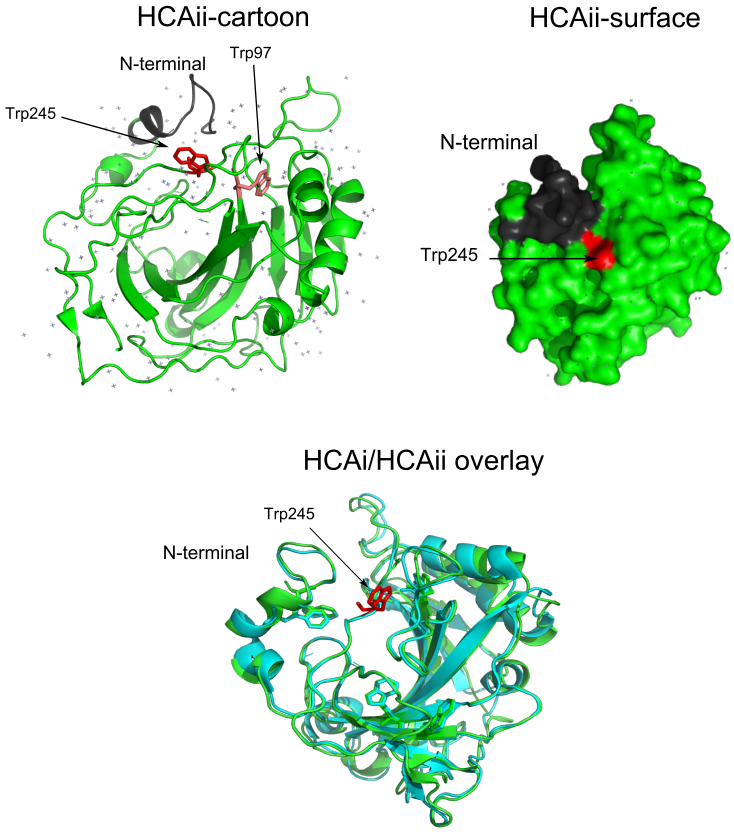

Figure S4: Structural representations of the proteins used in the study. Cyan: HCAi (pdbID: 2cab) and green: HCAii (pdbID: 1ca2). Truncated N-terminal of HCAii is represented by gray color.