

Supplementary Materials: Effect of the Length-to-Width Aspect Ratio of a Cuboid Packed-Bed Device on Efficiency of Chromatographic Separation

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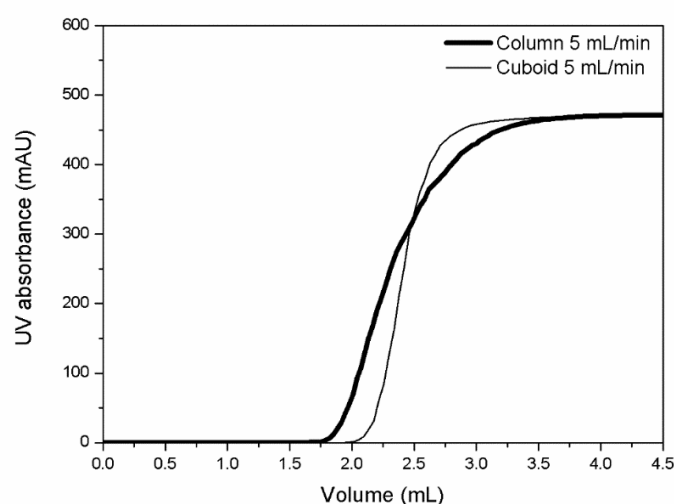


Figure S1. Unbound lysozyme break through curves obtained with the best cuboid packed-bed device and its equivalent column (media: Capto Q anion exchange, bed volume: 5 mL, buffer: 50 mM Tris-HCl, pH 8.0, sample: 1 mg/mL lysozyme, flow rate: 5 mL/min, $v_s=150$ cm/h).

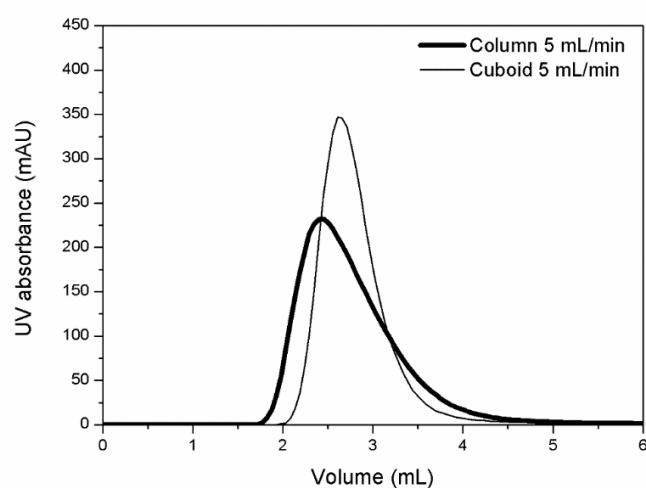


Figure S2. Lysozyme flow through peaks obtained with the best cuboid packed-bed device and its equivalent column (media: Capto Q anion exchange, bed volume: 5 mL, buffer: 50 mM Tris-HCl, pH 8.0, sample: 1 mg/mL lysozyme, loop: 0.5 mL, flow rate: 5 mL/min, $v_s=150$ cm/h)

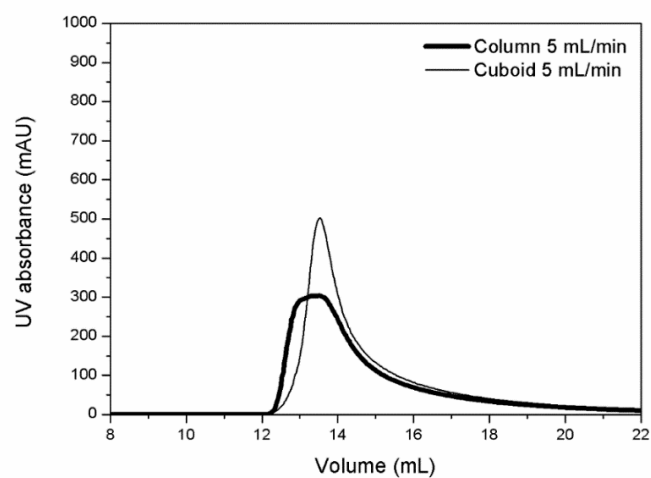


Figure S3. Eluted BSA peaks obtained with the best cuboid packed-bed device and its equivalent column (media: Capto Q anion exchange, bed volume: 5 mL, binding buffer: 50 mM Tris-HCl, pH 8.0, eluting buffer: 50 mM Tris-HCl, 1 M NaCl, pH 8.0, sample: 2 mg/mL BSA, loop: 5 mL, flow rate: 5 mL/min, $v_s=150$ cm/h)

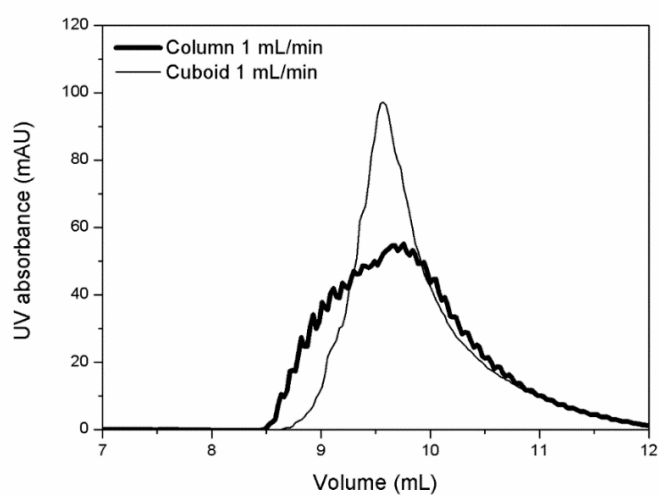


Figure S4. Eluted BSA peaks obtained with the best cuboid packed-bed device and its equivalent column (media: Capto Q anion exchange, bed volume: 5 mL, binding buffer: 50 mM Tris-HCl, pH 8.0, eluting buffer: 50 mM Tris-HCl, 1 M NaCl, pH 8.0, sample: 2 mg/mL BSA, loop: 0.5 mL, flow rate: 1 mL/min, $v_s=30$ cm/h)

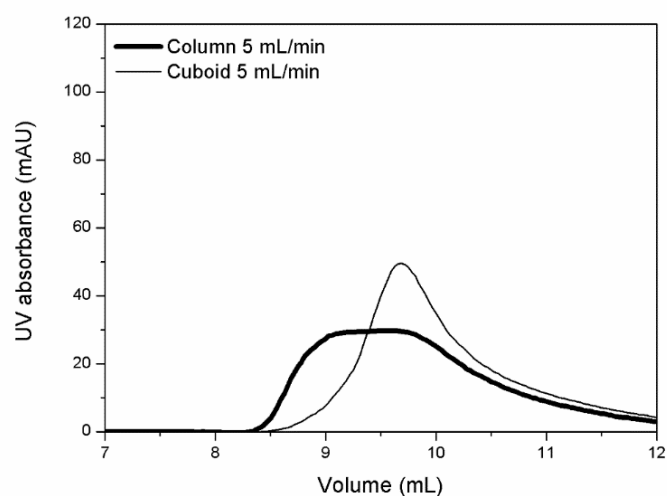


Figure S5. Eluted BSA peaks obtained with the best cuboid packed-bed device and its equivalent column (media: Capto Q anion exchange, bed volume: 5 mL, binding buffer: 50 mM Tris-HCl, pH 8.0, eluting buffer: 50 mM Tris-HCl, 1 M NaCl, pH 8.0, sample: 2 mg/mL BSA, loop: 0.5 mL, flow rate: 5 mL/min, $v_s=150$ cm/h)

Table S1. Comparison of the attributes of the eluted BSA peaks obtained with the best cuboid packed-bed device and its equivalent column (media: Capto Q anion exchange, bed volume: 5 mL, binding buffer: 50 mM Tris-HCl, pH 8.0, eluting buffer: 50 mM Tris-HCl, 1 M NaCl, pH 8.0, sample: 2 mg/mL BSA, $v_s=30$ and 150 cm/h for the flow rate of 1 and 5 mL/min respectively, injection volume: 5 mL)

Flow rate (mL/min)	Column		Cuboid	
	Width at half height (mL)	Apparent dispersion index	Width at half height (mL)	Apparent dispersion index
5	1.94	0.77	1.02	0.41
1	1.46	0.58	0.72	0.29