

SUPPORTING INFORMATION

Optimized Synthesis of Polyacrylic acid-coated Magnetic Nanoparticles for High-efficiency DNA Isolation and Size Selection

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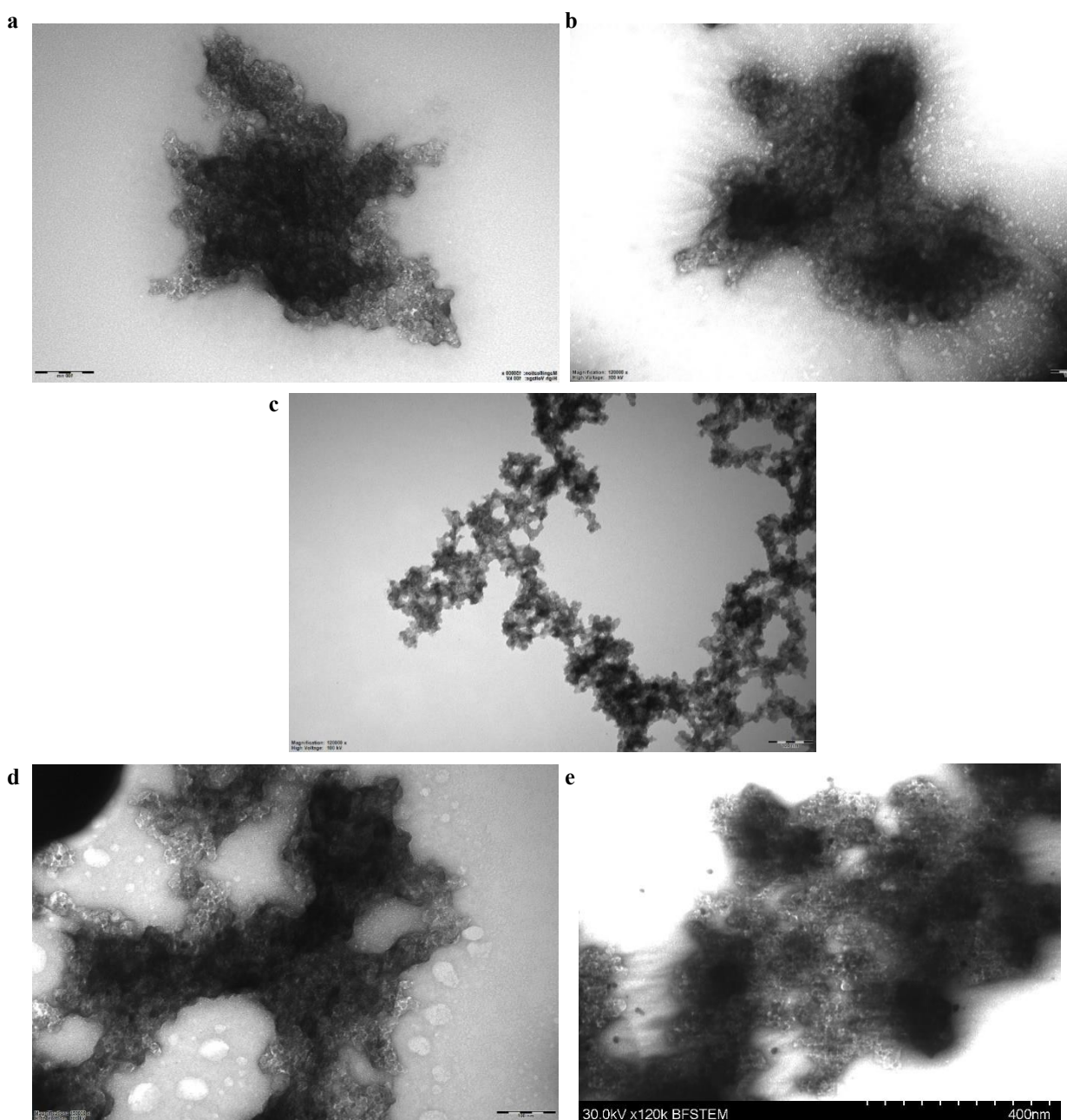
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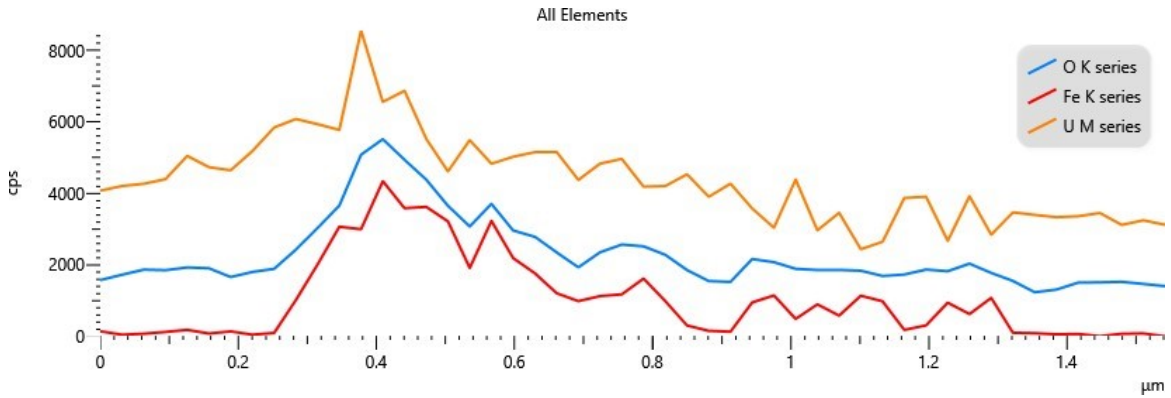
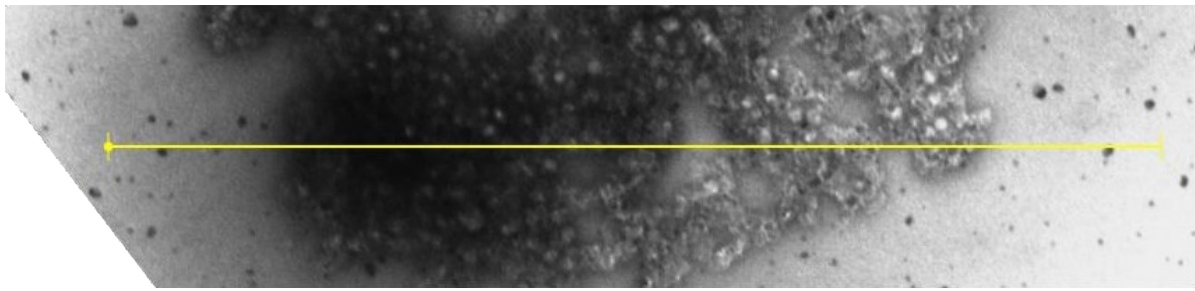
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These authors contributed equally to this work

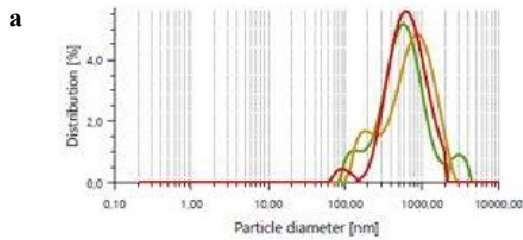
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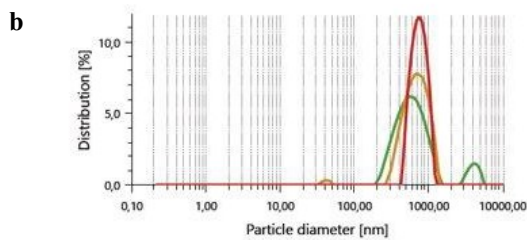
S1. (a-b) TEM images of bare IONPs stained with uranyl acetate. (c) TEM image of PAA-IONPs A9. (d) TEM and (e) S(T)EM images of PAA-IONPs A9 stained with uranyl acetate.



S2. Results of the elemental analysis done by Energy Dispersive X-ray (EDX) line scan (yellow line in STEM image) of PAA-IONPs A9 confirming the presence of uranyl stain on PAA-IONPs.

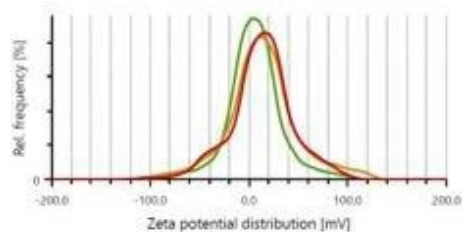


Index	Color	Hydrodyn. diam. [nm]	Polydisp. index [%]	Peak 1 [nm]	Peak 2 [nm]	Peak 3 [nm]	Transmittance [%]
1	Green	571,4	28,5	111,02 (Number)	3193 (Number)	682,7 (Number)	65,0
2	Yellow	631,6	28,9	144,15 (Number)	1218,4 (Number)	- (Number)	63,0
3	Red	661,3	26,8	82,72 (Number)	- (Number)	- (Number)	65,7

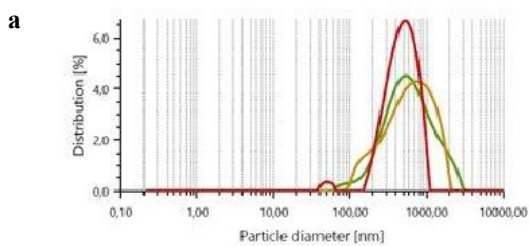


Index	Color	Hydrodyn. diam. [nm]	Polydisp. index [%]	Peak 1 [nm]	Peak 2 [nm]	Peak 3 [nm]	Transmittance [%]
1	Green	656,3	23,8	4121 (Number)	614,5 (Number)	- (Number)	62,8
2	Yellow	852,6	26,6	38,96 (Number)	- (Number)	- (Number)	60,0
3	Red	816,7	12,2	780,2 (Number)	- (Number)	- (Number)	60,1

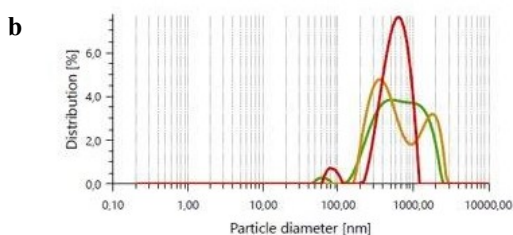
S3. DLS measurements of A2 in (a) **1M NaCl**, 10mM Tris-HCl pH-8.0, 1mM EDTA and 0.044% Tween-20 and in (b) **2.5M NaCl**, 10mM Tris-HCl pH-8.0, 1mM EDTA and 0.044% Tween-20.



S4. Zeta potential measurement of A2 in 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA and 0.044% Tween-20.

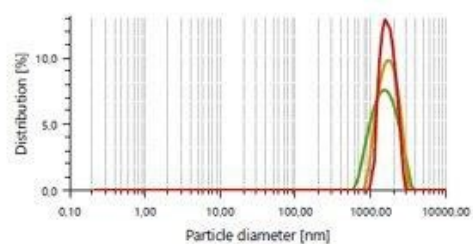


Measurements - Number							
Index	Color	Hydrodyn. diam. [nm]	Polydisp. index [%]	Peak 1 [nm]	Peak 2 [nm]	Peak 3 [nm]	Transmittance [%]
1	Green	508,8	25,6	82,12 (Number)	1683,2 (Number)	- (Number)	33,6
2	Yellow	619,8	26,4	125,04 (Number)	1158,1 (Number)	372,4 (Number)	38,7
3	Red	501,9	24,4	46,09 (Number)	- (Number)	- (Number)	41,2



Measurements - Number							
Index	Color	Hydrodyn. diam. [nm]	Polydisp. index [%]	Peak 1 [nm]	Peak 2 [nm]	Peak 3 [nm]	Transmittance [%]
1	Green	606,5	27,3	55,89 (Number)	- (Number)	- (Number)	39,8
2	Yellow	803,6	25,2	1850,2 (Number)	205,1 (Number)	414,1 (Number)	41,5
3	Red	590,1	23,1	75,23 (Number)	- (Number)	- (Number)	40,0

S5. DLS measurements of A9 in (a) **1M NaCl**, 10mM Tris-HCl pH-8.0, 1mM EDTA and 0.044% Tween-20 and in (b) **2.5M NaCl**, 10mM Tris-HCl pH-8.0, 1mM EDTA and 0.044% Tween-20.



Measurements - Number							
Index	Color	Hydrodyn. diam. [nm]	Polydisp. index [%]	Peak 1 [nm]	Peak 2 [nm]	Peak 3 [nm]	Transmittance [%]
1		1838,1	21,4	2025 (Number)	-(Number)	-(Number)	26,5
2		1910,4	25,8	2014 (Number)	-(Number)	-(Number)	24,7
3		1970,6	10,2	1889,8 (Number)	-(Number)	-(Number)	25,6

S6. DLS measurements of bare IONPs in **1M NaCl**, 10mM Tris-HCl pH-8.0, 1mM EDTA and 0.044% Tween-20. Sizes above $3\mu\text{m}$ were recorded in **2.5M NaCl**, 10mM Tris-HCl pH-8.0, 1mM EDTA and 0.044% Tween-20.

Type of Beads	Conc.	Buffer	Vol.beads/ Vol.DNA	Incubation time (min)	Incubation temperature	Separating time (min)	Elution time (min)
AMPure XP	---	---	2x	8	RT	3	5
AMPure XP	---	---	1x	8	RT	3	5
AMPure XP	---	---	0.6x	8	RT	3	5
IONPs	6 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	8	RT	3	5
IONPs	6 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	8	RT	3	5
IONPs	6 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	8	RT	3	5
IONPs	6 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	8	RT	3	5
IONPs	6 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	8	RT	3	5
IONPs	6 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	8	RT	3	5
IONPs	3 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	8	RT	3	5
IONPs	3 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	8	RT	3	5
IONPs	3 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	8	RT	3	5
IONPs	3 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	8	RT	3	5
IONPs	3 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	8	RT	3	5
IONPs	3 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	8	RT	3	5
IONPs	1 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	8	RT	3	5
IONPs	1 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	8	RT	3	5
IONPs	1 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	8	RT	3	5
IONPs	1 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	8	RT	3	5

IONPs	1 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	8	RT	3	5
IONPs	1 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	8	RT	3	5
A2	6 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	8	RT	3	5
A2	6 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	8	RT	3	5
A2	6 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	8	RT	3	5
A2	6 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	8	RT	3	5
A2	6 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	8	RT	3	5
A2	6 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	8	RT	3	5
A2	3 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	8	RT	3	5
A2	3 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	8	RT	3	5
A2	3 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	8	RT	3	5
A2	3 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	8	RT	3	5
A2	3 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	8	RT	3	5
A2	3 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	8	RT	3	5
A2	1 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	8	RT	3	5
A2	1 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	8	RT	3	5
A2	1 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	8	RT	3	5
A2	1 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	8	RT	3	5
A2	1 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	8	RT	3	5
A2	1 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	8	RT	3	5

A9	6 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	8	RT	3	5
A9	6 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	8	RT	3	5
A9	6 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	8	RT	3	5
A9	6 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	8	RT	3	5
A9	6 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	8	RT	3	5
A9	6 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	8	RT	3	5
A9	3 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	8	RT	3	5
A9	3 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	8	RT	3	5
A9	3 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	8	RT	3	5
A9	3 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	8	RT	3	5
A9	3 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	8	RT	3	5
A9	3 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	8	RT	3	5
A9	1 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	8	RT	3	5
A9	1 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	8	RT	3	5
A9	1 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	8	RT	3	5
A9	1 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	8	RT	3	5
A9	1 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	8	RT	3	5
A9	1 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	8	RT	3	5
A10	6 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	8	RT	3	5
A10	6 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	8	RT	3	5

A10	6 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	8	RT	3	5
A10	6 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	8	RT	3	5
A10	6 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	8	RT	3	5
A10	6 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	8	RT	3	5
A10	3 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	8	RT	3	5
A10	3 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	8	RT	3	5
A10	3 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	8	RT	3	5
A10	3 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	8	RT	3	5
A10	3 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	8	RT	3	5
A10	3 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	8	RT	3	5
A10	1 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	8	RT	3	5
A10	1 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	8	RT	3	5
A10	1 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	8	RT	3	5
A10	1 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	8	RT	3	5
A10	1 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	8	RT	3	5
A10	1 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	8	RT	3	5

S7. Table 1 of conditions tested.

Type of Beads	Concentration	Buffer	Vol.beads/ Vol.DNA	% Recovery Mean	% SD	Range
AMPure XP	---	---	2x	95	2	100 bp-4kbp
AMPure XP	---	---	1x	83	2	100 bp-4kbp
AMPure XP	---	---	0.6x	71	2	100 bp-4kbp
IONPs	6 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	0	0	100 bp-4kbp
IONPs	6 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	0	0	100 bp-4kbp
IONPs	6 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	0	0	100 bp-4kbp
IONPs	6 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	0	0	100 bp-4kbp
IONPs	6 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	0	0	100 bp-4kbp
IONPs	6 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	0	0	100 bp-4kbp
IONPs	3 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	0	0	100 bp-4kbp
IONPs	3 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	0	0	100 bp-4kbp
IONPs	3 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	0	0	100 bp-4kbp
IONPs	3 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	0	0	100 bp-4kbp
IONPs	3 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	0	0	100 bp-4kbp
IONPs	3 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	0	0	100 bp-4kbp
IONPs	1 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	0	0	100 bp-4kbp
IONPs	1 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	0	0	100 bp-4kbp
IONPs	1 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	0	0	100 bp-4kbp
IONPs	1 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	0	0	100 bp-4kbp
IONPs	1 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	0	0	100 bp-4kbp
IONPs	1 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	0	0	100 bp-4kbp
A2	6 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	93	2	100 bp-4kbp
A2	6 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	82	2	100 bp-4kbp
A2	6 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	70	2	100 bp-4kbp
A2	6 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	91	2	100 bp-4kbp
A2	6 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	79	2	100 bp-4kbp
A2	6 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	55	2	100 bp-4kbp
A2	3 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	94	2	100 bp-4kbp

A2	3 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	81	2	100 bp-4kbp
A2	3 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	68	2	100 bp-4kbp
A2	3 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	88	2	100 bp-4kbp
A2	3 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	76	2	100 bp-4kbp
A2	3 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	54	2	100 bp-4kbp
A2	1 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	82	2	100 bp-4kbp
A2	1 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	71	2	100 bp-4kbp
A2	1 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	49	2	100 bp-4kbp
A2	1 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	77	2	100 bp-4kbp
A2	1 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	60	2	100 bp-4kbp
A2	1 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	42	2	100 bp-4kbp
A9	6 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	96	1.5	100 bp-4kbp
A9	6 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	85	1.5	100 bp-4kbp
A9	6 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	75	1.5	100 bp-4kbp
A9	6 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	94	1.5	100 bp-4kbp
A9	6 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	86	1.5	100 bp-4kbp
A9	6 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	72	1.5	100 bp-4kbp
A9	3 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	95	1.5	100 bp-4kbp
A9	3 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	84	1.5	100 bp-4kbp
A9	3 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	72	1.5	100 bp-4kbp
A9	3 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	95	1.5	100 bp-4kbp
A9	3 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	83	1.5	100 bp-4kbp
A9	3 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	71	1.5	100 bp-4kbp
A9	1 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	88	1.5	100 bp-4kbp
A9	1 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	79	1.5	100 bp-4kbp
A9	1 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	66	1.5	100 bp-4kbp
A9	1 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	87	1.5	100 bp-4kbp
A9	1 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	80	1.5	100 bp-4kbp
A9	1 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	68	1.5	100 bp-4kbp
A10	6 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	97	0.5	100 bp-4kbp
A10	6 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	86	0.5	100 bp-4kbp
A10	6 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	76	0.5	100 bp-4kbp
A10	6 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	98	0.5	100 bp-4kbp

A10	6 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	85	0.5	100 bp-4kbp
A10	6 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	73	0.5	100 bp-4kbp
A10	3 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	98	0.5	100 bp-4kbp
A10	3 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	85	0.5	100 bp-4kbp
A10	3 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	72	0.5	100 bp-4kbp
A10	3 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	97	0.5	100 bp-4kbp
A10	3 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	87	0.5	100 bp-4kbp
A10	3 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	71	0.5	100 bp-4kbp
A10	1 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	92	0.5	100 bp-4kbp
A10	1 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	83	0.5	100 bp-4kbp
A10	1 mg/ml	24% PEG 8000, 1M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	67	0.5	100 bp-4kbp
A10	1 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	2x	90	0.5	100 bp-4kbp
A10	1 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	1x	86	0.5	100 bp-4kbp
A10	1 mg/ml	17% PEG 8000, 2.5M NaCl, 10mM Tris-HCl pH-8.0, 1mM EDTA, 0.044% Tween-20	0.6x	70	0.5	100 bp-4kbp

S8. Table 2 of performance comparison for size selection.