Binding Specificity of the Single Stranded DNA Binding Protein to the Target

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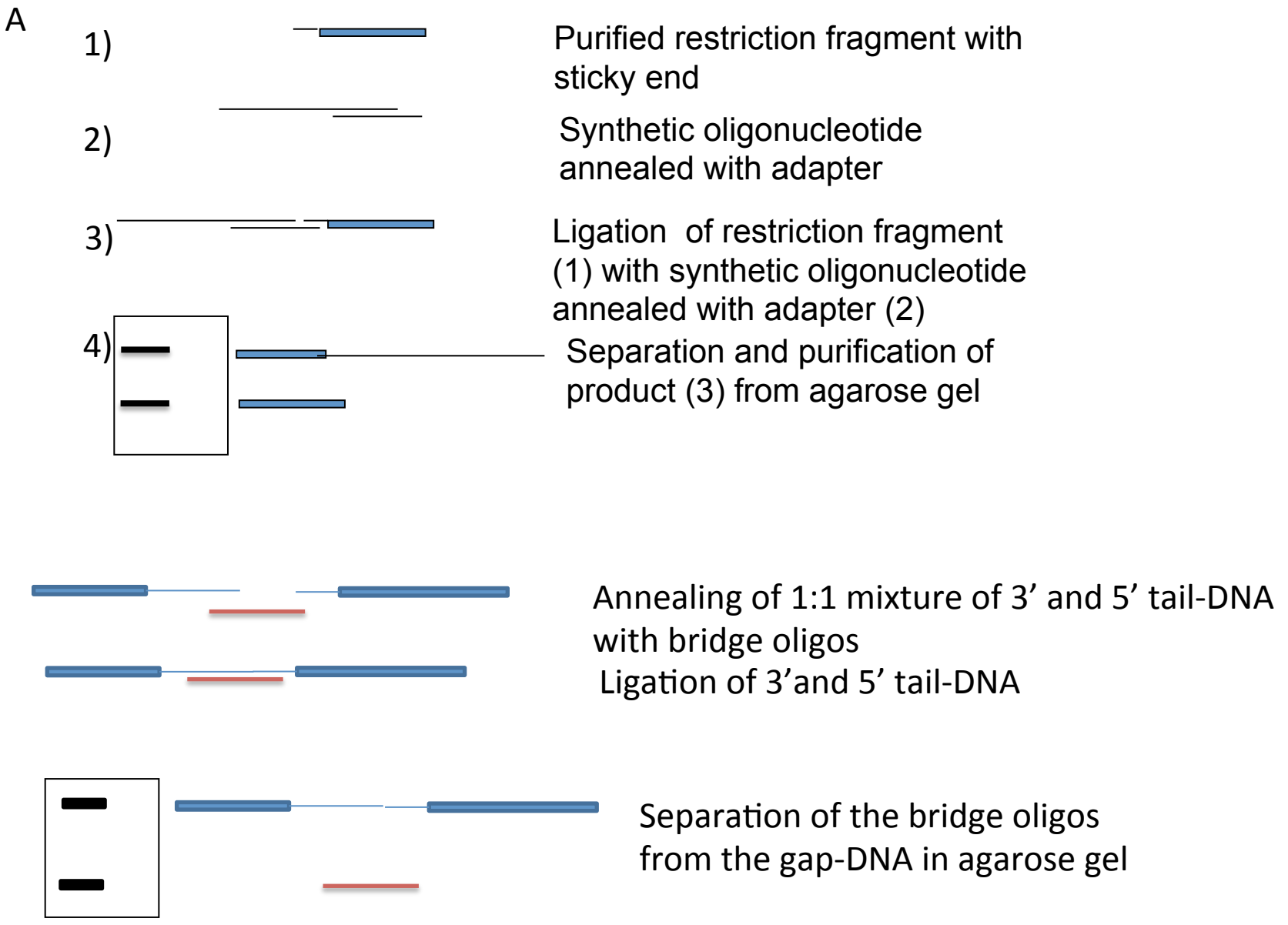
Supporting information



Supplement Fig.S1.A-Scheme for preparation tail-DNA. B- Scheme for preparation of gap-DNA.

Tail-DNA
5’-69ss-611bpDNA
94nt:
5’-AAA GAG AAA GTG AAA CCC AAA GAA TGA AAA CCC AAA TGT TAG AAT TGT TAA TGT GTG
TGA TGA TGT TGA CAT ACG TGT AGG AAT TAT ATT CAT G-3’
21nt –adapter:
5’-AAT ATA ATT CCT ACA CGT ATG-3’

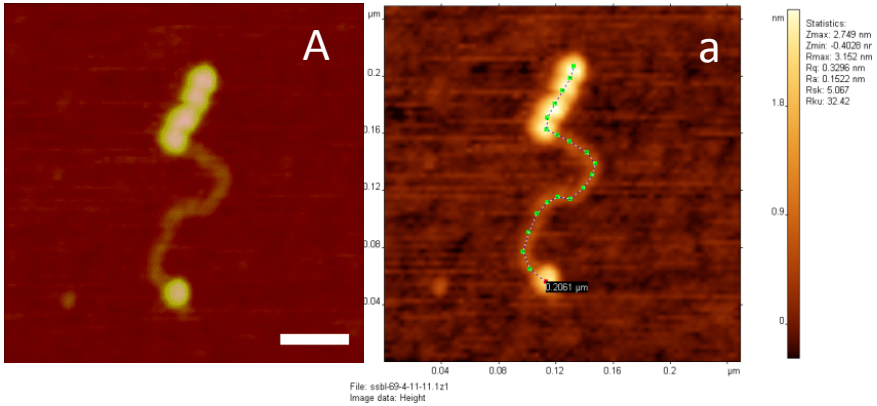
Mixed tails-DNAs
5’-42ss-441bpDNA and 3’-42ss-231bpDNA

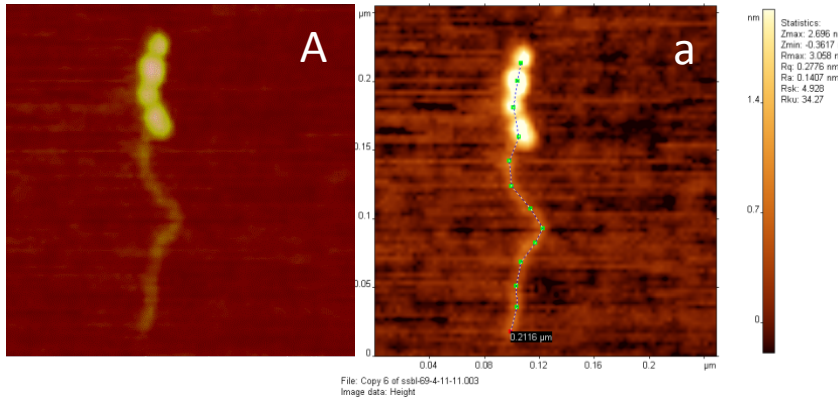
5’-42ss- 441bp-DNA
61nt:
5'- ATG AAA ACC CAA ATG TTA GAA TTG TTA AGT GAA ACC CAA AGA ATG TGT GTG ATG ATG TTG A -3‘
23nt- adapter:
5'- AGC TTC AAC ATC ATC ACA CAC AT -3‘

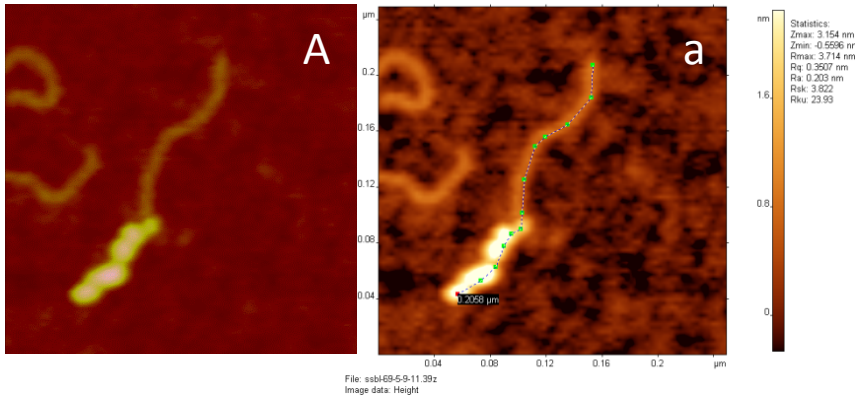
3’-42ss-231bp-DNA
63nt:
5'- CCA GCA TAC GTG TAG GAA TTA AGT GAA ACC CAA AGA TAT TAA AGA GAA AGT GAA ACC CAA AGA -3‘
25nt- adapter:
5’-TAA TTC CTA CAC GTA TGC TGG CAT G -3’

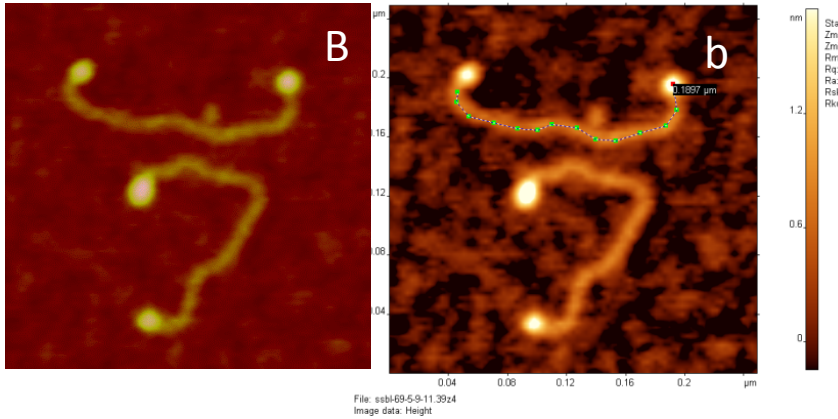
69ss gap-DNA
Mixed 3’-27ss-231bpDNA and 5’-42ss-441bpDNA
3’-27ss-231bpDNA
48nt:
5'- CCA GCA TAC GTG TAG GAA TTA TAT TAA AGA GAA AGT GAA ACC CAA AGA -3‘
25nt –adapter:
5’-TAA TTC CTA CAC GTA TGC TGG CAT G -3’

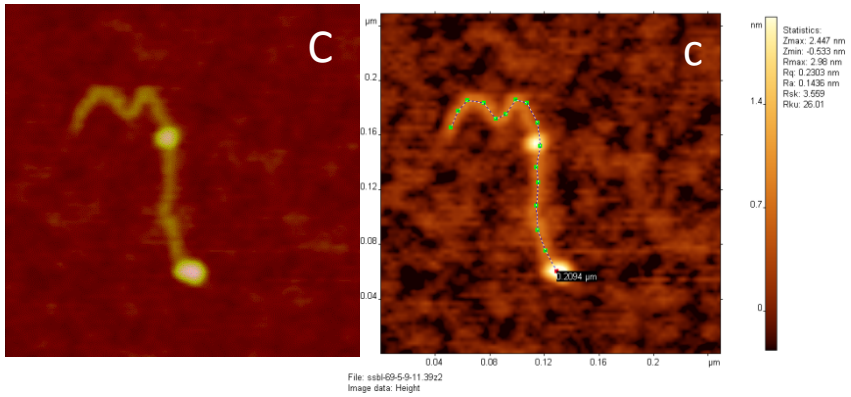
5’-42ss- 441bp-DNA
61nt:
5'- ATG AAA ACC CAA ATG TTA GAA TTG TTA AGT GAA ACC CAA AGA ATG TGT GTG ATG ATG TTG A -3'
23nt- adapter:
5'- AGC TTC AAC ATC ATC ACA CAC AT -3'
bridge
5’- TGG GTT TTC ATT CTT TGG GTT T -3’







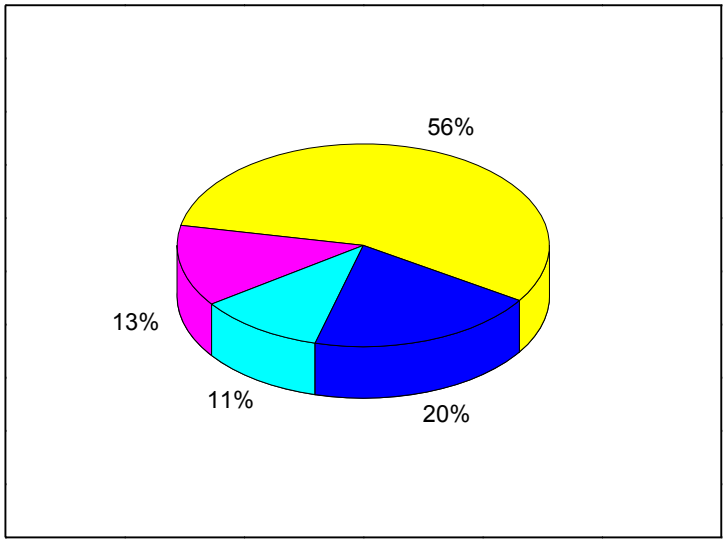




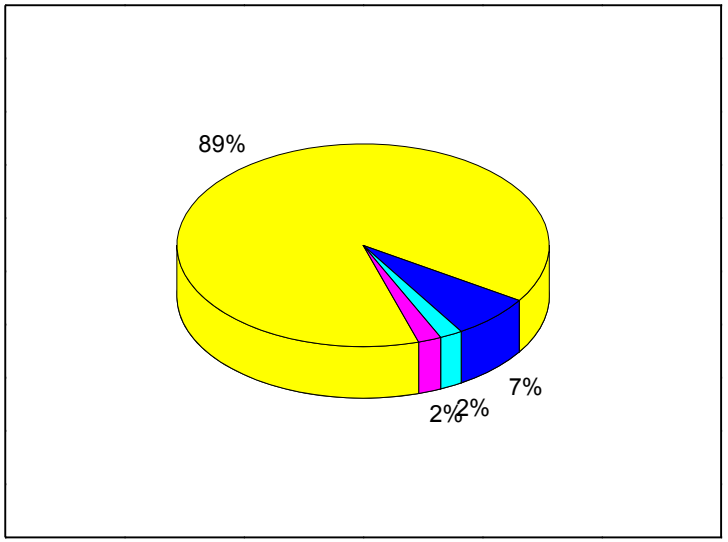
Supplement, Fig. S2

Gallery of selected AFM images of SSB-69-tail-DNA complexes at low salt conditions: Images marked as (A)- are SSB clusters, (B) non specific end bound, (C)- middle bound. Images marked as (a), (b) and (c)- are the same images as (A), (B) and (C) with traces of DNA lengths. Bar size is 50 nm.

A



B

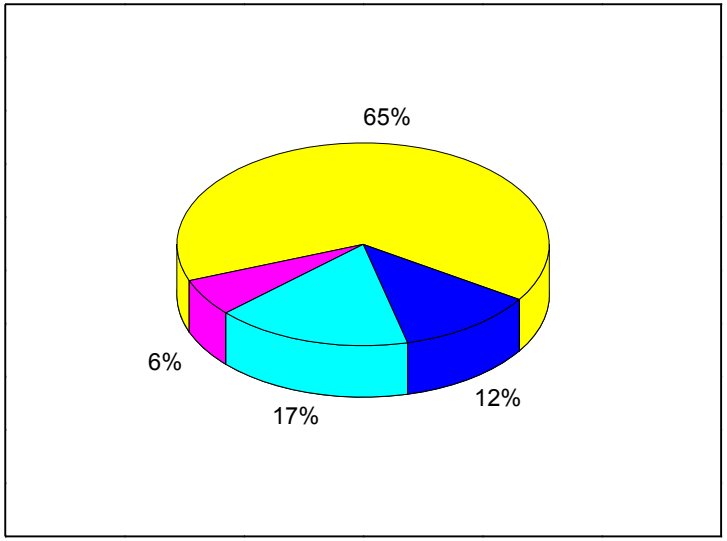


Low salt conditions- complex
SSB-69ssDNA :
End bound-20%
Middle bound-11%
Clusters-13%

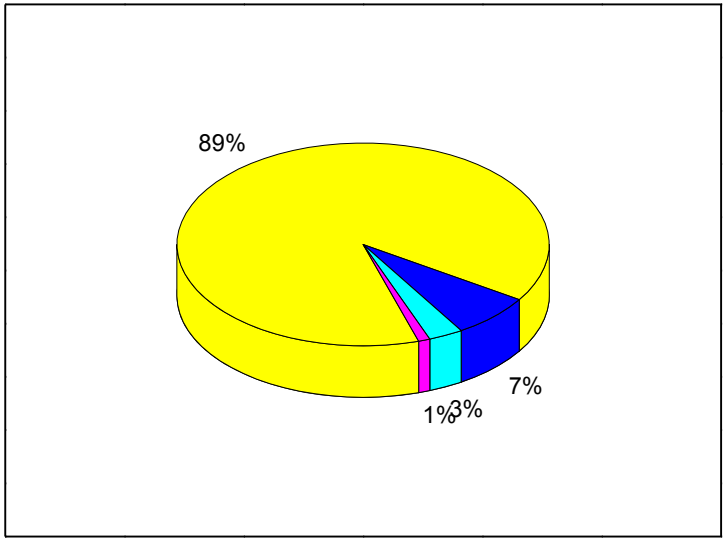
High salt conditions- complex
SSB-69ssDNA:
End bound-7%
Middle bound-2%
Clusters-2%

Supplement Fig. S3 illustrates the yield of SSB-69ss-DNA complexes in low (A) and high (B) salt conditions. Yellow: end - bound specific complexes, dark blue: non specific end bound complexes, light blue: middle bound complexes and pink: clusters.

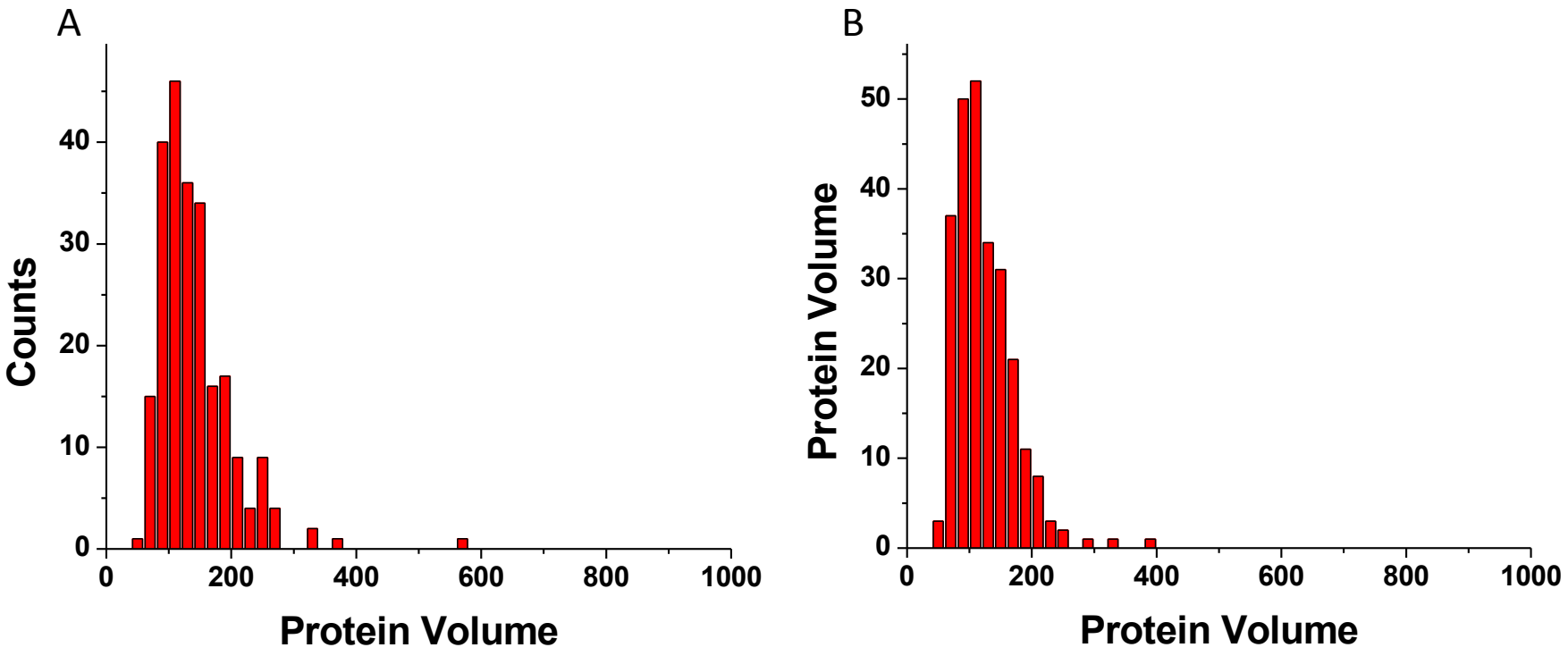
A



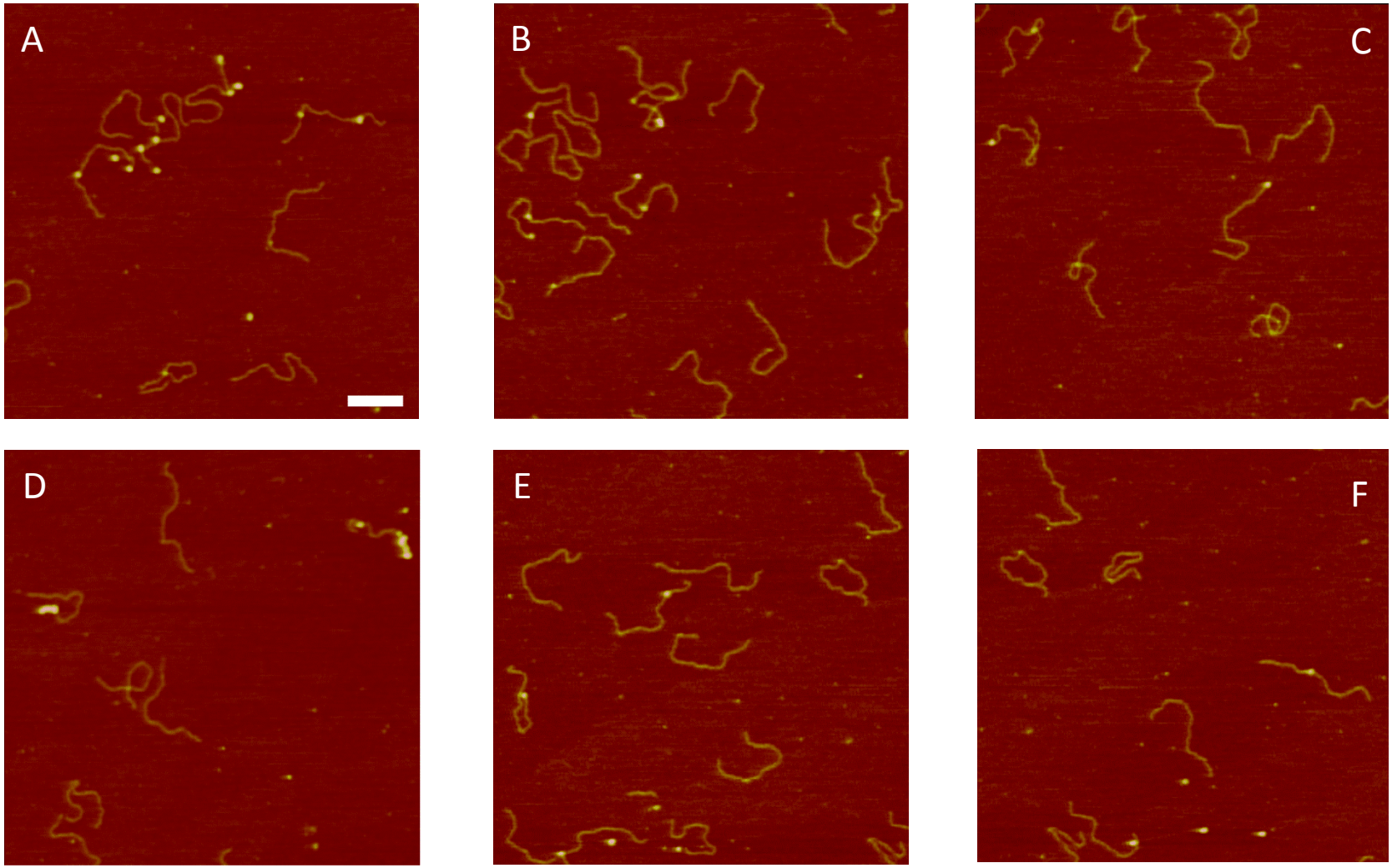
B



Supplement Fig. S4 illustrates the yield of SSB-27ss-DNA complexes in low (A) and high (B) salt conditions. Yellow: end - bound specific complexes, dark blue: non specific end bound complexes, light blue: middle bound complexes and Pink: clusters.



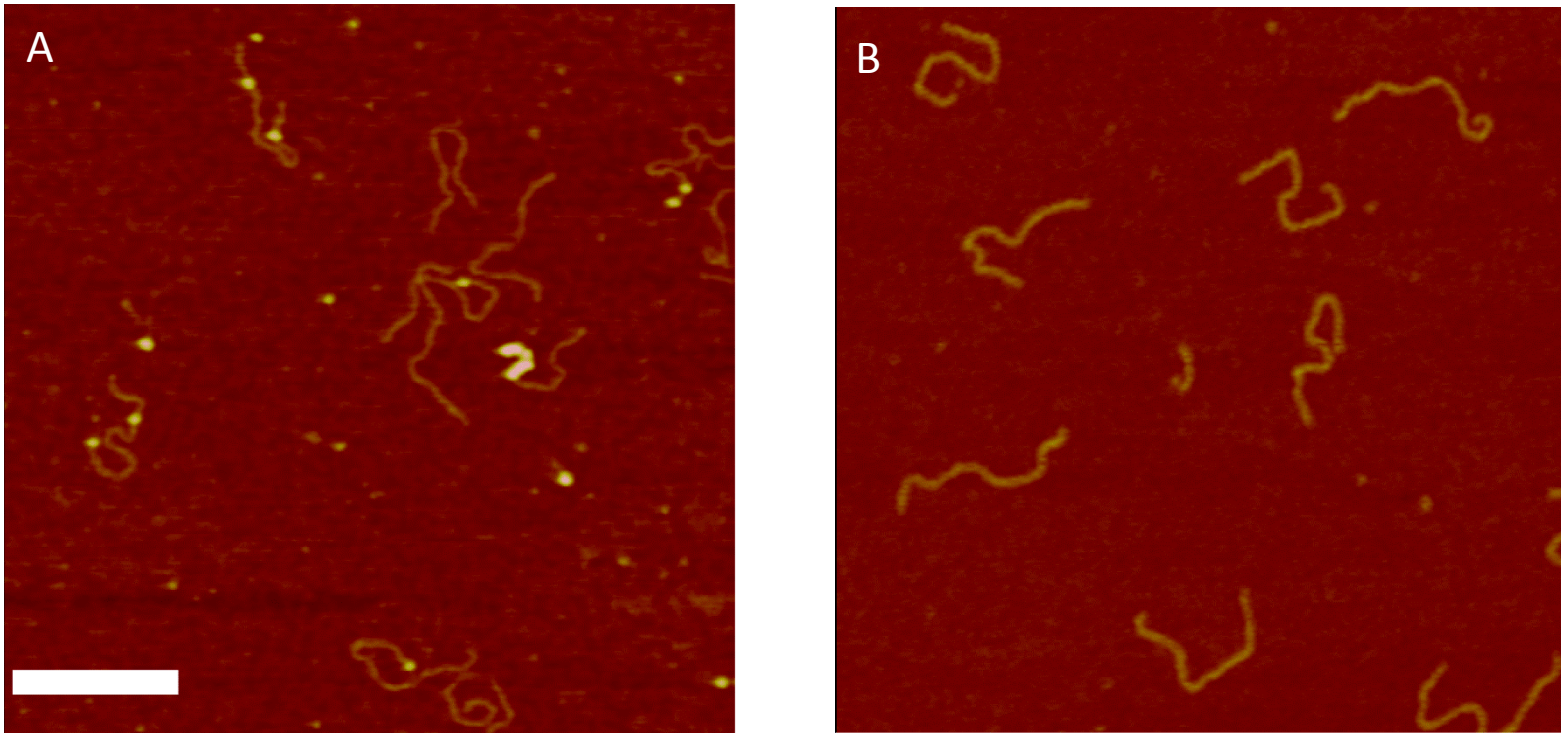
Supplement, Fig S5. The distribution of volumes for the end-bound SSB protein complexes with 27-tail-DNA at different salt conditions: low salt (A), high salt (B).



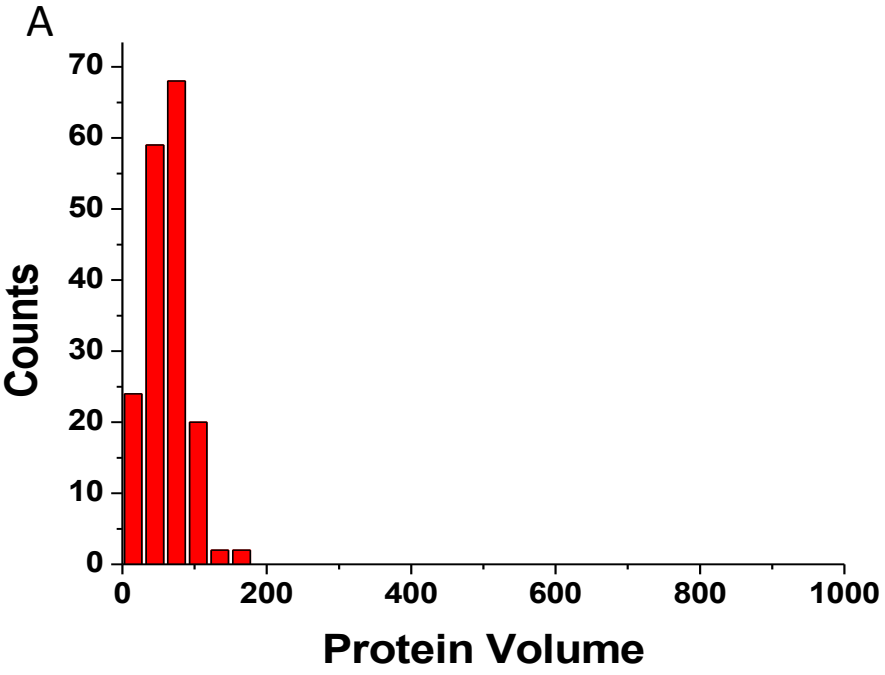
Supplement, Fig. S6

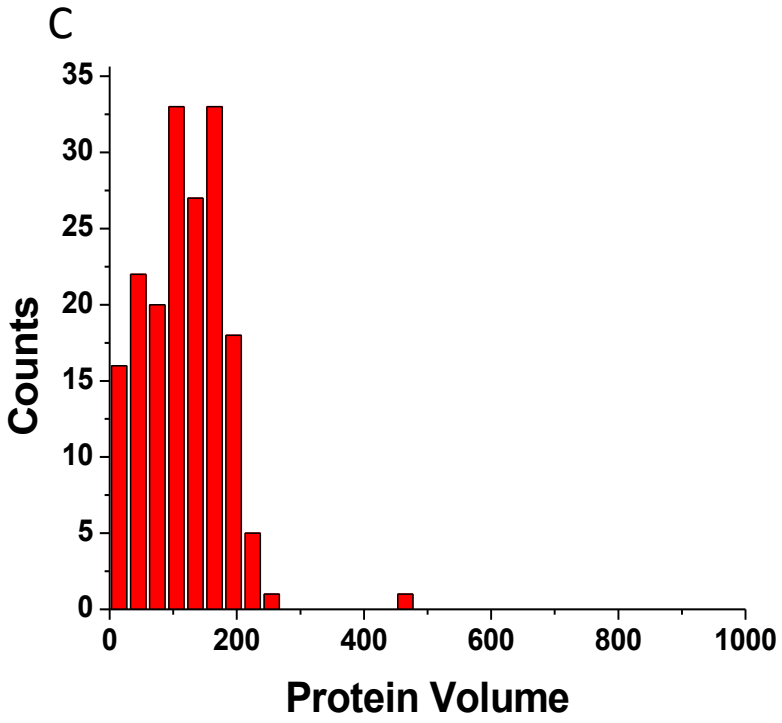
Gallery of selected AFM images for complexes of SSB protein with 796 bp DNA fragment in low salt. Bar size 100nm.

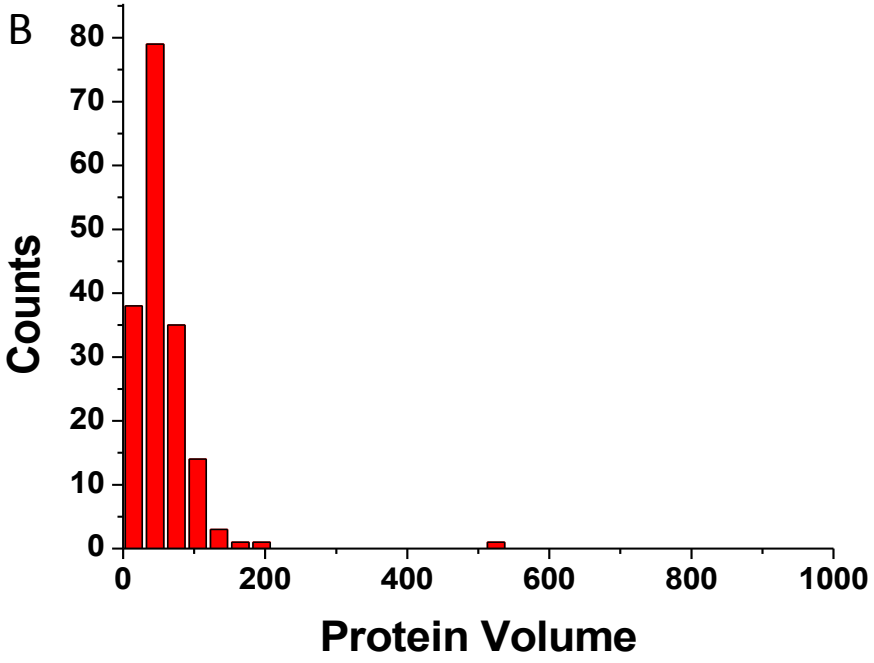
SSB complex with 769bp PCR fragment in low salt (A) and in low salt with Mg (B).



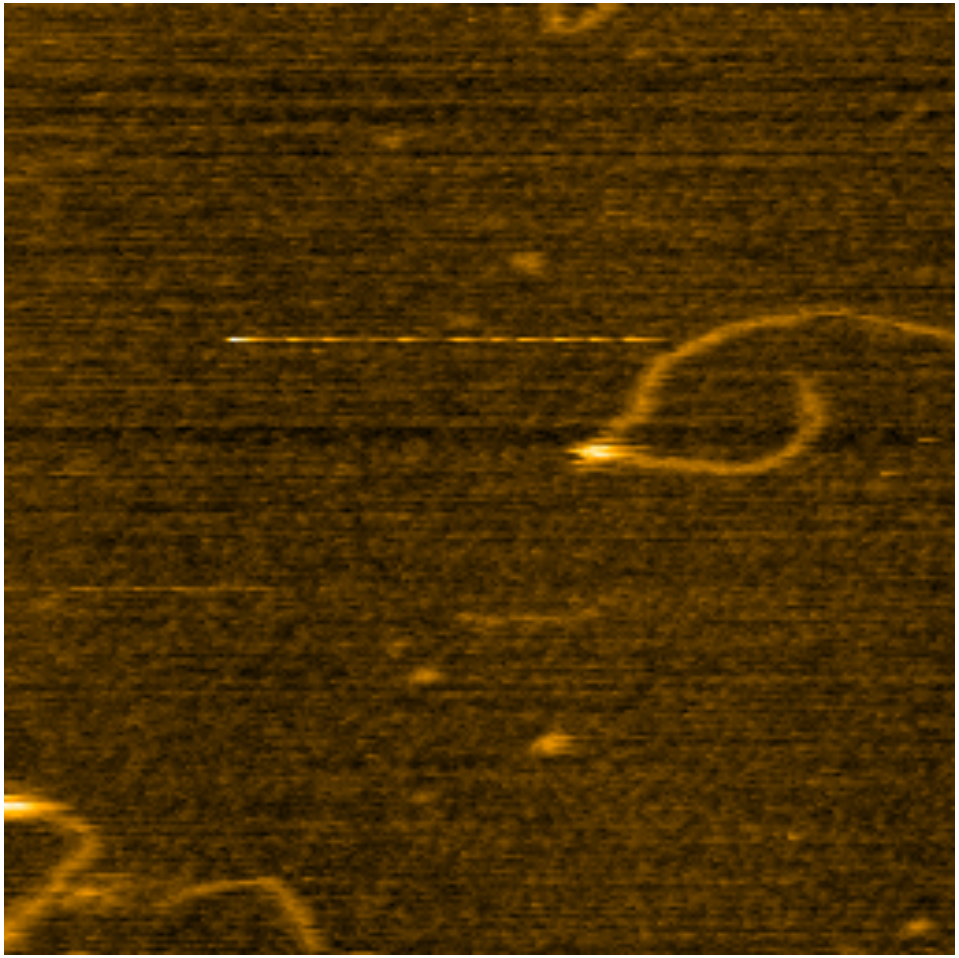
Supplement, Fig. S7. SSB complex with 769bp DNA duplex in low salt (A) and in low salt with Mg (B). Bar size 200nm.



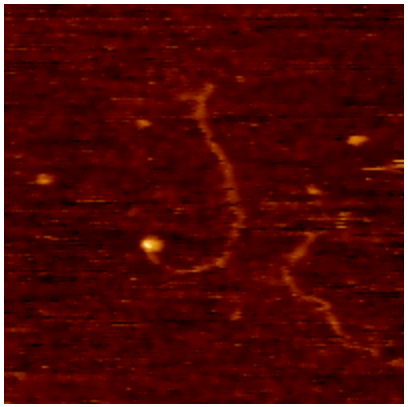




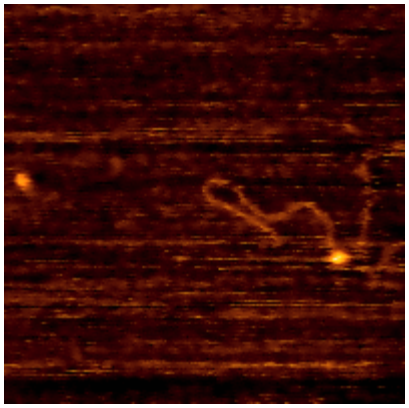
Supplement, Fig. S8. SSB protein without DNA in the standard conditions (A), in high salt (B) and in low salt solution (C) respectively.



Movie 1 of SSB- gap DNA complex in standard conditions.
Movie -0478asd



- Movie 3 of SSB-tail-DNA complex in standard conditions.



Movie 3. Association- dissociation