Supplementary Information
Transition structure of chromatin fibers at nanoscale probed by cryogenic electron tomography

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Supplementary Information includes:
1. Supplementary Figures (Figs. S1 and S2)
2. Supplementary references

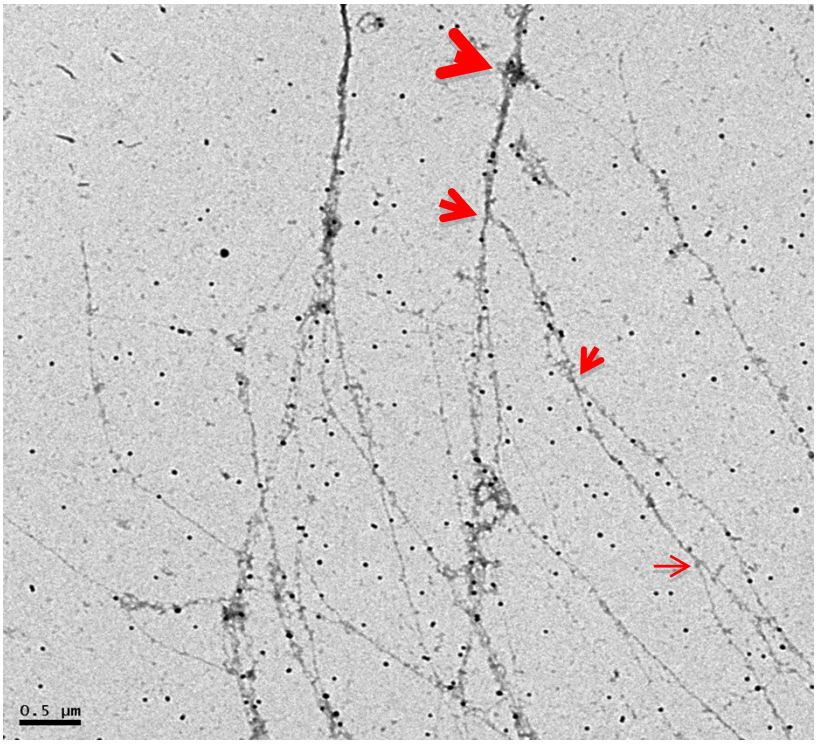

Figure S1 Negative staining of EM image of chromatin hierarchical branching structure. After buffer alignment, the aligned chromatin shows a hierarchical branching structure. There are at least four levels of branching structure (indicated by red arrows with various thickness), among them; the 30 nm chromatin fiber is the penultimate structure. The 30 nm chromatin fiber and its immediate branching nucleosomal arrays are defined as the transitional 30 nm chromatin branching structure. Black dots are gold nanoparticles used as fiducial maker for electron tomography. Bar, 500 nm.

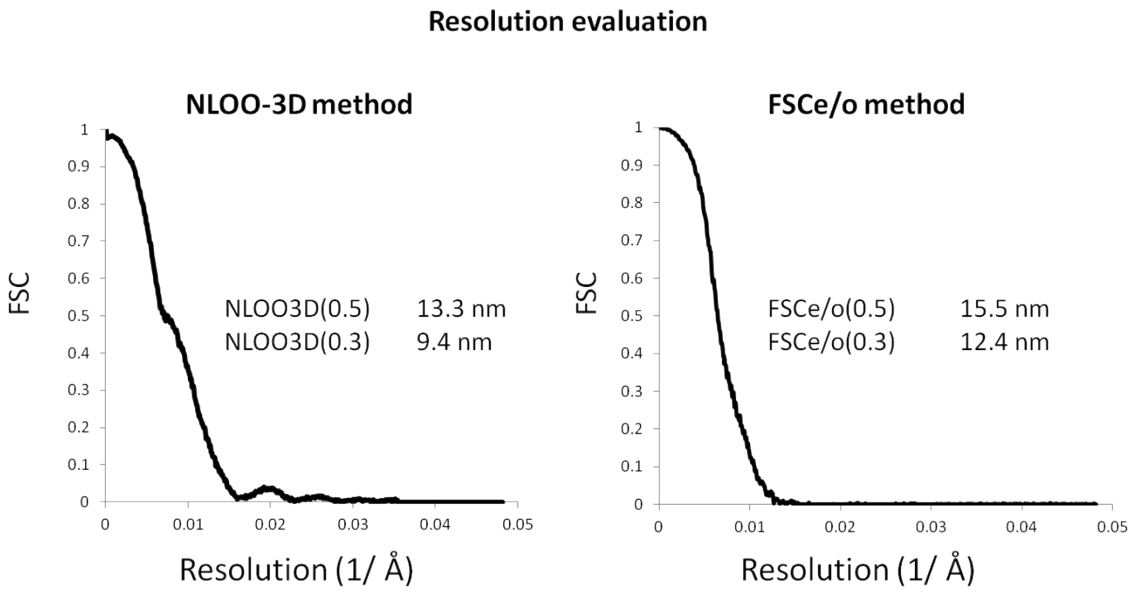

Figure S2 Resolution evaluation by both NLOO-3d method and FSCe/o method [1]for 4-times binned branching 2 data set. The data was binned 4 times with APIX 10.4 and further 3D reconstructed by IMOD. Both NLOO-3D method and FSCe/o method were used to estimate the resolution.

Supplementary references

1. G. Cardone, K. Grünewald and A. C. Steven, *Journal of Structural Biology*, 2005, **151**, 117-129.