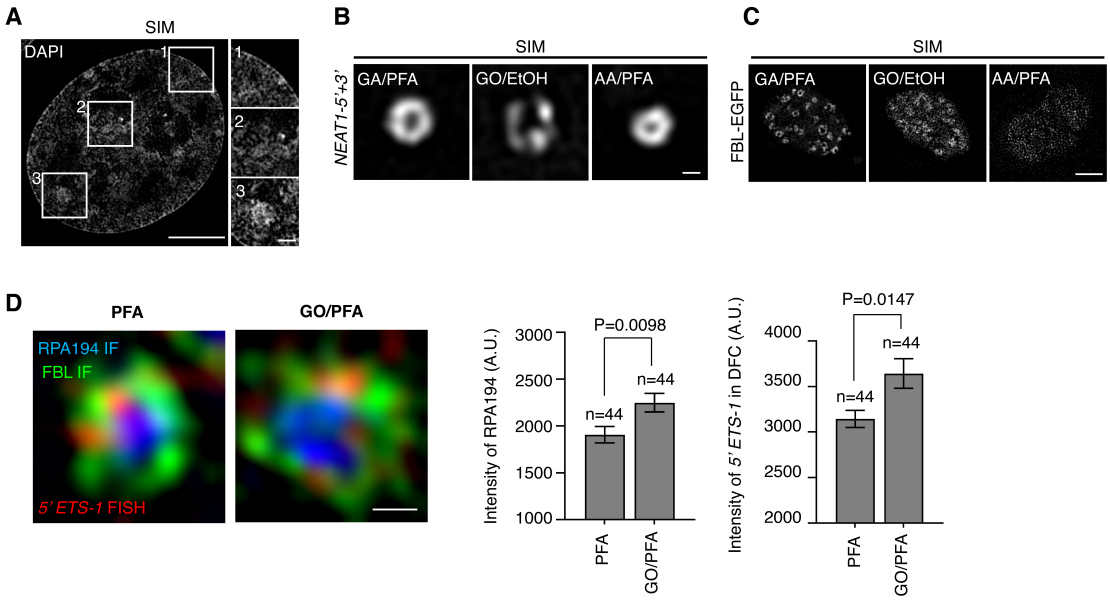

Figure S6. **Glyoxal/PFA fixation enables a better preservation of subcellular morphology than others**

(A) GO/PFA fixation leads to a better preservation of the cell morphology, shown by the well-perserved structures of chromatin domains and interchromatin compartments labeled by DAPI under SIM observation (Miron et al., 2020). Scale bar: 5 μm and 1 μm for zoomed regions.

(B) GO/PFA fixation reveals the shell of paraspeckles, labeled by *NEAT1*-5'+3' RNA and imaged by SIM. Scale bar: 200 nm.

(C) GO/PFA fixation reveals the ultra-structures (DFCs) of nucleoli, labeled by CRISPR/Cas9-mediated EGFP knock in at the endogenous FBL locus. Scale bar: 2 μm.

(D) GO/PFA fixation provides a better result for combination of FISH and IF under SIM. The 5' ETS-1 (red) of pre-rRNA was labeled by smFISH; RPA194 (blue) was labeled by IF; the DFC marker protein FBL (green) was labeled by IF. Note that GO/PFA fixation showed brighter signals for both RPA194 IF and 5' ETS-1 FISH than PFA fixation. Mean ± SEM and Mann-Whitney test are shown across three independent experiments with 44 cells, respectively. Scale bar: 200 nm.