



Supplementary information, Fig. S4. Phase diagrams of Rett syndrome-related MeCP2 nonsense mutant proteins with DNA.

a SDS-PAGE analysis of purified WT MeCP2 and the four main Rett syndrome-related MeCP2 nonsense mutants in Fig. 3a. **b** Analysis of the frequencies of Rett syndrome-related MeCP2 nonsense mutations by RettBASE (<http://mecp2.chw.edu.au/index.shtml>). Nonsense mutations with a frequency of more than 10 are shown. **c** Phase diagrams of the Rett-syndrome related MeCP2 nonsense mutants with 4x601 DNA. Scale bars, 20 μm . **d** Phase diagrams of the Rett syndrome-

related MeCP2 nonsense mutants with synthesized DNA oligos. Scale bars, 20 μm . **e**

Stacked histogram of the ability or strength of phase separation is indicated by the percentage of 4*4 phase diagrams when Rett syndrome-related MeCP2 nonsense mutants mixed with 4x601 NA, DNA or DNA Oligos in Fig. 3b and Supplementary information, Fig. S4c-d.