

## X= unavailable for probe clustering

Supplementary Information: Model for how intra-probe DNA bending by TRF1 and TIN2 can reduce probe clustering. We assume TIN2 has an equal chance to stimulate probe clustering (inter-probe interactions) vs DNA bending (intra-probe interaction). An equal amount of DN-TIN2-13 would reduce intra-bending activity by TIN2. % indicates relative amounts of each complex species. X indicates that these complexes cannot participate in probe clustering with unlabelled Bi-6X-Tel probes.