

Supplementary Table 1 List of oligonucleotides

NAME	SEQUENCE
DNA used for crystallography	
Native	5'-ACTTAACAAAAACC 3'-GAATTGTTTTTGGT
56DNA	5'-AGTTTTTCAGAAACC 3'-CAAAAGTCTTTGGA
RSSs used for 12-SC and cleavage experiments: Top strand is shown 5'→3'. Lower case indicates mutation.	
Consensus 12RSS	GATCTGGCCTGTCTTACACAGTGATACAGACCTTA ACAAAAACCTGCACTCGAGCGGAG
Consensus 23RSS	GATCTGGCCTGTCTTACACAGTGATGGAAGCTCAATCTGAACTCT GACAAAAACCTCGAGCGGAG
12RSS with G ₂ → A mutation	GATCTGGCCTGTCTTACACAGTGATACAGACCTTA A(t)AAAAACCTGCACTCGAGCGGAG
23RSS with G ₂ → A mutation	GATCTGGCCTGTCTTACACAGTGATGGAAGCTCAATCTGAACTCT GA(t)AAAAACCTCGAGCGGAG

Supplementary Table 1 List of oligonucleotides (continued)

FRET Oligonucleotides: Only the strand containing the fluorophore is shown 5'→ 3'. /iFluorT/ = Internal FAM labeling on thymine /i6-TAMN/ = Internal TAMRA labeling on thymine (bottom) = Bottom strand is fluorescently labeled; otherwise the top strand sequence is shown.		
12-A-FAM	GATCTGGCCTGTCTTACACAGTGATACAGACCTTAACAAAAAC C/iFluorT/GCACTCGAGCGGAG	A pair
23-A-TAMRA (bottom)	CTCCGCTCGAGGTTTTTGTGTCAGAG/i6-TAMN/ TCAGATTGAGCTTCCATCACTGTGTAAGACAGGCCAGATC	
12-B-TAMRA (bottom)	CTCCGCTCGAGTGCAGGTTTTTG/i6-TAMN/ TAAGGTCTGTATCACTGTGTAAGACAGGCCAGATC	B pair
23-B-FAM (bottom)	CTCCGCTCGAGGTTTTTG/iFluorT/ CAGAGTTCAGATTGAGCTTCCATCACTGTGTAAGACAGGCCA GATC	
12-C-TAMRA (bottom)	CTCCGCTCGAGTGCAGGTTTTTGTTAAGG/i6-TAMN/ CTGTATCACTGTGTAAGACAGGCCAGATC	C pair
23-C-FAM	GATCTGGCCTGTCTTACACAGTGATGGAAGCTCAATCTGAACT CTGACAAAAACC/iFluorT/CGAGCGGAG	
12-A-FAM nonamer mutant	GATCTGGCCTGTCTTACACAGTGATACAGACCTTACTCTGGCT G/iFluorT/GCACTCGAGCGGAG	Nonamer- mutant (NON _{mut}) pair
23-A-TAMRA nonamer mutant (bottom)	CTCCGCTCGACAGCCAGAGCAGAG/i6-TAMN/ TCAGATTGAGCTTCCATCACTGTGTAAGACAGGCCAGATC	
12-A-FAM heptamer mutant	GATCTGGCCTGTCTTAGCTCAGTATACAGACCTTAACAAAAAC C/iFluorT/GCACTCGAGCGGAG	Heptamer- mutant (HEP _{mut}) pair
23-A-TAMRA heptamer mutant (bottom)	CTCCGCTCGAGGTTTTTGTGTCAGAG/i6-TAMN/ TCAGATTGAGCTTCCATACTGAGCTAAGACAGGCCAGATC	
12-A-FAM nonspecific	GATCTGGCCTGTCTTAGCTCAGTATACAGACCTTACTCTGGCTG /iFluorT/GCACTCGAGCGGAG	Nonspecific (Nsp) DNA pair
23-A-TAMRA nonspecific (bottom)	CTCCGCTCGACAGCCAGAGCAGAG/i6-TAMN/ TCAGATTGAGCTTCCATACTGAGCTAAGACAGGCCAGATC	