

**Table S1. PCR primers for chromatin immunoprecipitation analysis of cohesin binding to the *cut* gene**

Amplicon	Forward primer	Reverse primer
Amplicon 1	5'-TGT'TTATTGGT'TCCACAT'TACGCC-3'	5'-TCATT'TGTTTTCATTGTTGCTCGG-3'
Amplicon 2	5'-AGCC'FCAATACC'CAATGAT'ACCACC-3'	5'-CCTGAGT'TGTGTGCTAATGTCCCTG-3'
Amplicon 3	5'-TTCTT'GATAGCT'TGGTAGGAAGACG-3'	5'-AAGGAGT'TGCTT'GAGT'TCTTGTATG-3'
Amplicon 4	5'-TCGAT'CAGGCAGAGGGT'TATG-3'	5'-GGCGCTG'TAAGT'TGGCGC-3'
Amplicon 5	5'-CACTA'AGAGGGAACTAT'GAGCAGC-3'	5'-GATAAAC'GACAACAGCAACAT'FCG-3'
Amplicon 6	5'-TGGT'TACCCCTT'AAATGGAGAGC-3'	5'-ATGTG'TGAGGTCTT'ACGGTAGCTG-3'
Amplicon 7	5'-AAAT'CATCGGCT'FCAGGTGG-3'	5'-GGCTG'TGGCTTCTGTTT'GCG-3'
Amplicon 8	5'-CACT'CCACTCCACT'FGGCT'FAGG-3'	5'-TGAT'CGTGGGGT'GAGAGAGC-3'
Amplicon 9	5'-CAGAT'CCAAGCCAAAAC'CCGAG-3'	5'-CCAGC'AGTTAAACGAGGAAAAGAG-3'
Amplicon 10	5'-GGGCA'ACTT'AGTATCCAGCAAAAAC-3'	5'-GCAAC'ATGATCCATCTCTGTATGG-3'
Amplicon 11	5'-CGAAT'CGGAAT'CGGAGTGAC-3'	5'-TGGAT'GATGACTAT'TTCTGCGC-3'
Amplicon 12	5'-GTAGAA'CCCGCAGTGAATCTAATCC-3'	5'-GCCCT'TTTTGTTGGCTTATTTGTC-3'
Amplicon 13	5'-CAAGAAA'AAAGATGGTGGT'GGAAG-3'	5'-TTGTT'GTGGCTCAAGAGTGGG-3'
Amplicon 14	5'-TGCGAT'GGTATCGTATCCGTATG-3'	5'-CGGCA'AGTGTGGGAT'TTAAAG-3'
Amplicon 15	5'-GGCTGGG'GAATAGAAA'CTACACTG-3'	5'-GC'TAATGAGGTGTGCC'CGTAAC-3'
Amplicon 16	5'-TGTGC'CTGGACAGATGAGT'GTG-3'	5'-TTGAT'GTTTATCGGACTATCGGTG-3'
Amplicon 17	5'-CGTAAG'CGTATAAT'FCGTTTAGCG-3'	5'-TGGT'GGTGGTGTGAAGTGGC-3'
Amplicon 18	5'-AATTAC'GAGATTGCC'AGCGG-3'	5'-GCCCA'CCTTGTCACAATTCG-3'
Amplicon 19	5'-CTGGA'AAAT'ATGAAATATGCAAC'GTG-3'	5'-TAGT'GTTGGCTACCGACCTGG-3'
Amplicon 20	5'-AACAT'AAAAAACCAATACCACAT'GGC-3'	5'-GCGAC'TGCATTTGCTACCTTG-3'
Amplicon 21	5'-AGGAA'ATCGTAGACGCTTCAC-3'	5'-GGTTC'GTTTCTCGGCTCCTG-3'
Amplicon 22	5'-GGTCA'CTT'AAATCCAAAC'CCATAG-3'	5'-GAAT'CGGTTTCGTAAAT'FGACTTCC-3'
Amplicon 23	5'-AATGA'CACTCGAAGCGACAGG-3'	5'-TGAAG'CATCTGGAGCAACT'CATC-3'
Amplicon 24	5'-TTCTC'CTGGGTTGTAAAA'AGGAC-3'	5'-CGACA'GACGGGACACTTGG-3'
Amplicon 25	5'-CCTGG'TCAGGTGGAGAA'TAACAC-3'	5'-CGACG'CCGCAACATTTGTG-3'
Amplicon 26	5'-CACAT'GAAAGATCGCGACGG-3'	5'-CACGT'CTGCAACGGAAC'TTATTAG-3'
Amplicon 27	5'-ACCGC'TCGGCTCTTGT'TTAG-3'	5'-GCGTC'AGTCGAGTTTATATACG-3'
Amplicon 28	5'-TTTAG'GCCGAATCGGGTC-3'	5'-TCCAC'CGCAACTCTCTCAGAAG-3'
Amplicon 29	5'-CCAAA'CCAAAACCAAAACCGG-3'	5'-GAGAT'TTGCCATAGTCGAATCAATC-3'
Amplicon 30	5'-TTTTT'CTTTCAGTGTGTGCCG-3'	5'-TGACA'GGTGTGACAGGTGATG-3'
Amplicon 31	5'-ACACT'CTGGTGACCCCAAC-3'	5'-CATT'TTTGCTTTCGTGCTATCTG-3'
Amplicon 32	5'-TCGC'TTCACTTGTGGACCAAC-3'	5'-ACTT'GGCAGCATTAATTAACCG-3'
Amplicon 33	5'-TCGCC'TCAACAATTCATCCATAG-3'	5'-TGGCA'GCATTCGAGCGAC-3'
Amplicon 34	5'-GCCAG'CGGTTGTAACACAG-3'	5'-GAGCC'ACCAAGGACATCATATC-3'
Amplicon 35	5'-GGACG'GAGGAGGCATGTTTC-3'	5'-TCGTG'CTGTAAGTCACTATCAAAAC-3'
Amplicon 36	5'-AAGAA'TGCCAGAGATACGAGGAG-3'	5'-AAGGA'TTCGATACGTTTGC-3'
Amplicon 37	5'-CGGT'CCTGGGTTACTTCTTAGGG-3'	5'-TTACC'AGTTTATCATTGGCAGTCTC-3'
Amplicon 38	5'-TTACT'CCATCTGGCTTAACCCAC-3'	5'-TTCGG'TCAGTGTAGTTAGACGAACG-3'
Amplicon 39	5'-TGCAC'CGCTTCGATGCTC-3'	5'-CTTTA'ATAGGCAACAGCCAGACG-3'
Amplicon 40	5'-CGT'TTATACGAGTATGGCGCTTG-3'	5'-ACCT'TATTCCACATAGAACCCGAC-3'
Amplicon 41	5'-CCAGA'GCTT'GAGCCACATAAAAC-3'	5'-CCCAG'CGTTCCTCCACAG-3'
Amplicon 42	5'-TGCTG'CTGTGTTGTTGTTATTTG-3'	5'-GCCTC'GTTCAGCCTCTATCTC-3'
Amplicon 43	5'-CCATT'CGATCCCATTCGATTG-3'	5'-TTCA'GGTGGTACAGGTGGC-3'
Amplicon 44	5'-ATACT'ATACGTTGGCCTCTTCC-3'	5'-TTAA'TAGACATTTCCGAATAACCCG-3'
Amplicon 45	5'-CGCAA'TAAAGACAATGGGAAGG-3'	5'-AGCTA'CCGCCACAAAATGAGAG-3'
Amplicon 46	5'-GGCT'TTGTATTGGCTTTGATAAC-3'	5'-GCTT'GATTTTTGACAAGTAGCAGC-3'
Amplicon 47	5'-GCTGT'GCTGATGCTCGCG-3'	5'-CGGT'CCTCCTCTCTCTGTCFC-3'
Amplicon 48	5'-ATTC'TTGAAGACCATCTATCC-3'	5'-CACC'A'CTCGTTTCATATTGTGTG-3'
Amplicon 49	5'-AAGCT'TTTCGCTCACCACC-3'	5'-TCAGT'ATCCACGGCTTGTGCTAG-3'
Amplicon 50	5'-TGCAAT'CAAAGCAAACACTA'CTCC-3'	5'-ACATC'ATCGTTGAAAAGGTGGG-3'
Amplicon 51	5'-AAAAA'AGGGTGAGGATTTCTGCTC-3'	5'-AAGTA'GGCAACGTAACGTACCG-3'
Amplicon 52	5'-CCAGT'CAAGTTTTCAGACTTCAGG-3'	5'-CCCC'TTTATCCCTCTGGCG-3'
Amplicon 53	5'-TTCTA'GAAAATTTGGTCTCA'GGC-3'	5'-TTCGG'TTATTTGGTCTCTGTATGC-3'
Amplicon 54	5'-CCCGC'CGCAAAGTACACAC-3'	5'-TGTCA'ACTACGAACGAACAACAG-3'
Amplicon 55	5'-TGCCCT'GATGGTTTCTGCGC-3'	5'-ATACA'TATAGTTGCCCTTGGACCG-3'
Amplicon 56	5'-ACAGG'CAAACAAAATATCCCGC-3'	5'-TCGCA'GGCAAATATGTGGAAC-3'
Amplicon 57	5'-CCAAA'AGGCCACCCACCG-3'	5'-GCCCG'AGCTCTCAAAAGTC-3'
Amplicon 58	5'-GAATT'GAACAAAACGGATGCAAG-3'	5'-GCACT'GTGTGTGCTGTGGGC-3'
Amplicon 59	5'-TTCC'TTTAGATCCAAAACACT'TTGC-3'	5'-TTCGA'AAATCCCATGAAAAGAC-3'
Amplicon 60	5'-CAGT'CCGCTTTGGATGTG-3'	5'-CCTCT'CAAAGAAGGAAACATTTGGT-3'
Amplicon 61	5'-AATGCC'AACTTCCGAAAAGACG-3'	5'-AACAA'CCAAAAGACAACACAGAG-3'
Amplicon 62	5'-GAGCG'TGGTGAAGAAATTTCCAG-3'	5'-CCTAA'CTTTTGGTTCAGCTTCGAG-3'
Amplicon 63	5'-AAAA'CAAAGTGGGGAAATCC-3'	5'-AGGCA'GAGTAAACATCCGC-3'
Amplicon 64	5'-TCGGA'ATCGACTACTAAGAGCTACG-3'	5'-TGCCA'CTGGAGACGAAATGC-3'
Amplicon 65	5'-GCTCT'GTCTGTCTTCTCTGTGTG-3'	5'-TCCAC'TCGTAAAGATTTCTTGTGG-3'
Amplicon 66	5'-TAAAT'ATCGCCCAAGGAAAACG-3'	5'-TTGCA'TGTGAGAACTCATTCGC-3'
Amplicon 67	5'-CGT'TGGACAGACGAAAAACGG-3'	5'-GGT'TGCATTTTATCCCTAAGATTG-3'
Amplicon 68	5'-TTTGG'TTGTCTAAAGAGTGGAAAGT-3'	5'-AATGT'GACGTTTGGCTATTTGC-3'
Amplicon 69	5'-ATCTC'GTGTGTGACCATCAAGT-3'	5'-TGCT'TCCTTCTTCTACCCG-3'
Amplicon 70	5'-GCAGAT'TAAATCAGCGAGTGGC-3'	5'-AAGGC'TGTCATGGAACGAATACC-3'
Amplicon 71	5'-TGAGAT'ACAAAATGGGCAAAAAGG-3'	5'-CGAAA'AGCAAAACAGGACAGC-3'
Amplicon 72	5'-TGGT'TTCTTTATGCTAATGTCTCG-3'	5'-TTAAT'GATGCCGCTGACAAGTG-3'
Amplicon 73	5'-GAACG'ATCAAAGTCTGAGCGGAC-3'	5'-TTGG'TTTCGTTTGGTGTGTG-3'
Amplicon 74	5'-CGCT'TAGAGGTTTGTATCTCATGG-3'	5'-GCTAC'GCAATTGACACGCTCAG-3'
Amplicon 75	5'-AGATC'ACGCTTTCAAAACAATTC-3'	5'-GATAG'CTCGAAACAGACAGAAGC-3'
Amplicon 76	5'-TAGGA'AGTGGAAAGTGGGATGG-3'	5'-CCTT'GCTCAATTA'CTCGCCTC-3'
Amplicon 77	5'-GCAGC'AAACAGCCAAAGGTC-3'	5'-TCGTG'CCCTTTTATTTCTTGGC-3'
Amplicon 78	5'-AGAGC'ATCATCGGCACCTG-3'	5'-CACTC'ATTTTCGCACCTATTCTC-3'
Amplicon 79	5'-GAGTA'TGTGTGTTGTCCATTGACG-3'	5'-GCAGT'AGCAGAGGGCAAGAGAC-3'
Amplicon 80	5'-TTTT'CGACTCAAAGACAGGAGAGC-3'	5'-CATTG'AAAGCCCTTACAATCCG-3'
Amplicon 81	5'-GGCGT'CTGCATTGCATTTG-3'	5'-GGCTG'CTCTGTTCGGCTCTC-3'
Amplicon 82	5'-CAAAA'GAATGAATCTCGCTTGC-3'	5'-TGCTG'TGTGTTTACACTTGCAC-3'
Amplicon 83	5'-TTAGC'AAAACAGATGAAAACCG-3'	5'-AACGT'AAGACTGTTTGTCAATGCC-3'
Amplicon 84	5'-AGGCG'GCAAAAATAACATTAGAGG-3'	5'-CACGA'TCAATCGAAGAAGAACTCC-3'
Amplicon 85	5'-AAGACA'AAAAGAGAGAACCCAAAG-3'	5'-AGCA'CAAAATCAATGCAAAAACCTC-3'

**Table S2. Primers for PCR analysis of *pds5* genomic DNA**

Primer	Sequence
pds5ex3F	5'-ATGTGTTTCGAACTGGAGGA-3'
pds5ex4F	5'-ACTAAAACGGGCGATGCTCT-3'
pds5ex4R	5'-CATTTTGATGGTGGACTC-3'
pds5ex5F	5'-GCTCTGGTCATGGATAAGCC-3'
pds5ex5FA	5'-AAACTGCTGTCCACGGACGATG-3'
pds5ex5R	5'-TTAGCCTCTCAGCATCGTCCG-3'
pds5ex5RA	5'-TGTGTTTGGCTTATCCATGAC-3'
pds5ex5RB	5'-CTTATCCATGACCAGAGCAGC-3'
pds5ex6F	5'-ACTCTCTGTCTCGTATGTTCTC-3'
pds5ex6FA	5'-AGTCATCCATGCACTTCCTGCT-3'
pds5ex6FB	5'-GAGGTGGTAATGGCTATTTGTGG-3'
pds5ex6FC	5'-AGGGATGCGATGAATGGTCT-3'
pds5ex6FD	5'-AAGAGCGCATGAAGAAGCTATATC-3'
pds5ex6FE	5'-AAGAACCAATGAAGACACGCAA-3'
pds5ex6R	5'-ATTGAGCAGGAAGTGCATGG-3'
pds5ex6RA	5'-GATGACTGAACACACTTGATGC-3'
pds5ex7R	5'-GCTAAACTGGGTTAGGTACTCTG-3'
pds5ex7RA	5'-AGCACACTCCCGACAGCTTAC-3'
pds5upA	5'-CAGCTGAAATGCAATCATGTACT-3'
pds5upB	5'-GTCAATGCTAATCAGTGAA-3'