

	1	10	20	30	40	50	60
TraesCS7D02G430700	-----						
TraesCS7B02G340100	-----ACGCCTCCGTCCCCGTCCGGCACCAAACCCA						
TraesCS7A02G441400	GACGCGCCCGGGCTCGGCCTCCCTCCCTCACGCCTCCGTCCCCGTCCGGCACCAAACCCA						
TraesCS7D02G430700	-----ACACCTGACCAACGATAGCCAGGCCACCG						
TraesCS7B02G340100	TCCCATCCCCCTCCCCCTCCTCCTCCCTTTTCCACA-CTGACCAACGATAGCCAGGCCACCG						
TraesCS7A02G441400	TCCCATCCCCCTCCCC---CCTTTTTCTTCCACACCTGACCAACGATAGCCAGGCCACCG						
TraesCS7D02G430700	CACCCGCAGTTTCGTGCACCGCACTTCTCCACCCACCACCTACCTCCC-----CCCG						
TraesCS7B02G340100	CACCCGCAGTTTCGTGCACCGCACTTCTCCACCCACCACCTACCTCCC-----CCCG						
TraesCS7A02G441400	CACCCGCAGTTTCGTGCACCGCACTTCTCCACCCACCACCTACCTCCCTCCCCCCTCCCG						
TraesCS7D02G430700	TGTTCCCCTCCCCCTCAAACCTATCGCCGCGGACCATCTACCCACCGACGAGCGACTG						
TraesCS7B02G340100	TGTTCCCCTCCCCCTCAAACCTATCGCCGCGAGACCATCCACCCACCGACGAGCGATCG						
TraesCS7A02G441400	TGTTCCCCTCCCCCTCAAACCTATCGCCGCGGACCATCCACCCACCGACGATCGATT-						
TraesCS7D02G430700	---CGGCCGATT--GA-TCCGCAGGGCGAGGCGGTGGCGGCGGAGGGAGCCCACCAGATC						
TraesCS7B02G340100	CCACGGCCGATT--GA-TCCACAGCGCGGGGCGGTGGCG-----CACCAGATC						
TraesCS7A02G441400	-CACGG--GACTCGGAGTCGGCGTCG-GCGGCGGCGGTGGCAGAGGGAGTCCGCCAGATC						
TraesCS7D02G430700	CGGCCGCGGCGGCGATGATGAAGCAGCTGCTGCCGCGAGGCCAGCTGCGGCGCTCGGCGG						
TraesCS7B02G340100	CGGCCGCGGCGGCGGCGATGATGAAGCAGCTGCTGCCGCGAGGCCAGCTGCGGCGCTCGGCGG						
TraesCS7A02G441400	CGGCCGCGGCGGCGGCGATGATGAAGCAGCTGCTGCCGCGAGGCCAGCTGCGGCGCTCGGCGG						
TraesCS7D02G430700	CGGCGTCGGCGGCGCGCTCCTCCGTACG-----CGGGGTCGAGGGCGCGGGGGGCCCG						
TraesCS7B02G340100	CGGCGTCGGCGGCGCGCTCCTCGGGGGCGGCGTCGGGGCCGAGGGCGCGGGTGGGCCCG						
TraesCS7A02G441400	CGGCGTCGGCGGCGCGCTCCTCGGGGGG-----CGGGGTCGAGGGCGCGGGGGGCCCG						
TraesCS7D02G430700	ACGGCGTCGGCGCGGGCGCGGGGGCGGGCGGGCGGACGGCCTCCTCCTCCACCTTCTGGT						
TraesCS7B02G340100	ACGGCGTCGGCGCGGGCGCGGGGGCGGGCGGGCGGACGGCCTCCTCCTCCACCTTCTGGT						
TraesCS7A02G441400	A-----CGGCGCGGGCGCGGGCGGGCGGGCGGACGGCCTCCTCCTCCACCTTCTGGT						
TraesCS7D02G430700	TCCTGCTGCACGCGCTCTGCTGCCTCATCTCGCTCTTCTCGGCTTCCGCTTCTCCAGGC						
TraesCS7B02G340100	TCCTGCTCCACGCGTTCTGCTGCCTCATCTCGCTCTTCTCGGCTTCCGCTTCTCCAGGC						
TraesCS7A02G441400	TCCTGCTGCACGCGCTCTGCTGCCTCATCTCGCTCTTCTCGGCTTCCGCTTCTCCAGGC						
TraesCS7D02G430700	TCCTCTTCTTCTGCTCTTCTTCCAGCAGCGCGCTCTACGCCGCCACCTCCAACAACAAGT						
TraesCS7B02G340100	TGCTCTTCTTCTGCTCTTCTTCCAGCAGCGCGCTCTACGCCGCCACCTCCAACAACAAGT						
TraesCS7A02G441400	TGCTCTTCTTCTGCTCTTCTTCCAGCAGCGCGCTCTACGCCGCCACCTCCAACAACAAGT						
TraesCS7D02G430700	CGGCCGTGCTCCGCGCCATCACCACCACCACCACCACCACCACCACGACCACCACCA						
TraesCS7B02G340100	CGGCCGTGCTCCGCGCCATCACGACAACCACGACGACGACCACGACGACCACAACCACGA						
TraesCS7A02G441400	CGGCCGTGCTCCGCGCCATCACCACCACCACCACCACCACCAGACCACGACGACCACCACCA						
TraesCS7D02G430700	CCAACACCTTCACCTCTCCTTCGCCGCCGCGGGCAACCCGCCCCCGTCCAACCCGGACA						
TraesCS7B02G340100	CCAACACCTTCACCTCTCCTTCGCCGCCGCGGGCAACCCGCCCCCGTCCAACCCGGACA						
TraesCS7A02G441400	CCAACACCTTCACCTCTCCTTCGCCGCCGCGGGCAACCCGCCCCCGTCCAACCCGGACA						
TraesCS7D02G430700	ACCTCACCGCCGCCGCGCTCGAGGAGGCCGCCGGGAGCACGCAGAGCCACGTGGTGGTTCG						
TraesCS7B02G340100	ACCTCACCGCCGCCGCGCTCGAGGAGGCCGCCGGGAGCACGCAGAGCCACGTGGTGGTTCG						
TraesCS7A02G441400	ACCTCACCGCCGCCGCGCTCGAGGAGGCCGCCGGGAGCACGCAGAGCCACGTCGTGGTTCG						
TraesCS7D02G430700	GCCGCCACGGGATTTCGGATCCGCCCCCTGGCCGCACCCCGACCCCGTCGAGGTCATGCGCG						
TraesCS7B02G340100	GCCGCCACGGGATTTCGGATCCGCCCCCTGGCCGCACCCCGACCCCGTCGAGGTCATGCGCG						
TraesCS7A02G441400	GCCGCCACGGGATTTCGGATCCGCCCCCTGGCCGCACCCCGACCCCGTCGAGGTCATGCGGG						
TraesCS7D02G430700	CGCACCGGATCATGGAGCGCGTGCAGGAGGAGCAGCGCCGCTGGTACGGCGTCAGGGAGC						
TraesCS7B02G340100	CGCACCGGATCATGGAGCGCGTGCAGGAGGAGCAGCGCCGCTGGTACGGCGTCAGGGAGG						
TraesCS7A02G441400	CGCACCGGATCATGGAGCGCGTGCAGGAGGAGCAGCGCCGCTGGTACGGCGTCAGGGAGC						
TraesCS7D02G430700	CGCGCCAGGTGCTCGTCGTCACCCCGACCTACTCGCGCGCCTTCCAGGCGCTCCACCTCA						
TraesCS7B02G340100	CGCGCCCGGTGCTCGTCGTCACCCCGACCTACTCGCGCGCCTTCCAGGCGCTCCACCTCA						
TraesCS7A02G441400	CGCGCCAGGTGCTCGTCGTCACCCCGACCTACTCGCGCGCCTTCCAGGCGCTCCACCTCA						
TraesCS7D02G430700	CCGGCCTCCTCCACTCGCTCCGCAACGTGCCCTACCCGCTACCTGGATCGTCGTCGAGG						
TraesCS7B02G340100	CCGGCCTCCTCCACTCGCTCCGCAACGTGCCCTACCCGCTACCTGGATCGTCGTCGAGG						

TraesCS7A02G441400	CCGGCCTCCTCCACTCGCTCCGCAACGTGCCCTACCCGCTCACCTGGATCGTCGTCGAGG
TraesCS7D02G430700	CCGGCGGCGTCACCAACGCCACCGCCTCCATGCTCGCGCGCTCCAGCCTCACCTTCGTCC
TraesCS7B02G340100	CCGGCGGCGTCACCAACGCCACCGCCTCCATGCTTGC GCGCTCCAACCTCACCTTCGTCC
TraesCS7A02G441400	CCGGCGGCGTCACCAACGCCACCGCGGCCATGCTTGC GCGCTCCAGTCTCACCTTCGTCC
TraesCS7D02G430700	ACGTCCCCTTCCCGGAAAAAATGCCCTCGAATGGGCCGACCGCCACGCCACTGAGAACC
TraesCS7B02G340100	ACGTTCATTTCCCGGAAAAAATGCCCTCGAATGGGCCGACCGCCACGCCACTGAGAACC
TraesCS7A02G441400	ACGTCCCCTTCCCGGAAAAAATGCCCTCGAATGGGCCGACCGCCACGCCACTGAGAACC
TraesCS7D02G430700	GCATGCGCCTCCACGCCCTACGGGTGATCCGGGAGAGGAAGATGGACGGTGTGGTTGTGT
TraesCS7B02G340100	GCATGCGCCTCCACGCCCTACGGGTGATCCGGGAGAGGAAGATGGACGGTGTAGTTGTGT
TraesCS7A02G441400	GCATGCGCCTCCACGCCCTACGGGTGATCCGGGAGAGGAAGATGGACGGTGTGGTTGTGT
TraesCS7D02G430700	TTGCGGATGACAGCAACGTGCATAGCATGGAGCTGTTTCGATGAGGTGCAGAAGGTCCAGT
TraesCS7B02G340100	TTGCCGATGACAGCAACGTGCATAGCATGGAGCTGTTTCGATGAGGTGCAGAAGGTCCAGT
TraesCS7A02G441400	TTGCGGATGACAGCAACGTGCATAACATGGAGCTGTTTCGATGAGGTGCAGAAGGTCCAGT
TraesCS7D02G430700	GGATGGCCGCGGTGTCTGTGGGTATCCTTGCGCACACCGGAACAGCAGAGCAGCCACGCC
TraesCS7B02G340100	GGATGGCCGCGAGTGTCTGTGGGTATCCTTGCGCACACCGGAACAGCAGAGCAGCCACGCC
TraesCS7A02G441400	GGATGGCCGCGGTGTCTGTGGGTATCCTTGCGCACACCGGAACAGCAGAGCAGCCACGCC
TraesCS7D02G430700	TTACCGAAGAGGACAAGAAGAACATGCCTCTTCCAGTCCAGGGCCCTGCCTGCAACTCTT
TraesCS7B02G340100	TTACCGAAGAGGACAAGAAGAACATGCCACTTCCAGTCCAGGGTCTGCCTGCAACTCTT
TraesCS7A02G441400	TCACCGAAGAGGACAAGAAGAACATGCCTCTTCCAGTCCAGGGTCTGCCTGCAACTCTT
TraesCS7D02G430700	CAGGGCATTGCGTGGATGGCACACATTCAACACGTTGCCGTTCTCTGGGAAGACCGCCA
TraesCS7B02G340100	CCGGGCATTGCGTGGATGGCACACATTCAACACGTTGCCGTTCTCTGGGAAGACCGCCA
TraesCS7A02G441400	CCGGGCATTGCGTGGGTGGCACACATTCAACACGTTGCCGTTCTCTGGGAAGACCGCCA
TraesCS7D02G430700	CGGTGGTTGGCGAGGCAGCGCCGGTGCTACCGAAGGGTTTGGAGTGGGTGGGTTTGTGA
TraesCS7B02G340100	CGGTGGTTGGCGAGGCAGCGCCTGTGCTACCGAAGGGTTTGGAGTGGGTGGGTTTGTGA
TraesCS7A02G441400	CGGTGGTTGGCGAGGCAGCGCCGGTGCTACCGAAGGGTTTGGAGTGGGTGGGTTTGTGA
TraesCS7D02G430700	TGAACTCTAGGATGCTGTGGAAGGAGGCAGAGGGCAAGCCTGATTGGGTGAAGGACCTTG
TraesCS7B02G340100	TGAACTCGAGAATGCTGTGGAAGGAGGCAGAGGGCAAGCCTGATTGGGTGAAGGATCTTG
TraesCS7A02G441400	TGAACTCGAGAATGCTGTGGAAGGAGGCAGAGGGCAAGCCTGATTGGGTGAAGGACCTTG
TraesCS7D02G430700	ATGCTGTGGGGGAGAAATGGGGAGGAGATTGAGAATCCTCTTACTCTCTTGAATGATGCGT
TraesCS7B02G340100	ATGCTGTGGGGGAGAAATGGGGAGGAGATTGAAAATCCTCTTACTCTCTTGAACGATGCGT
TraesCS7A02G441400	ATGCTGTTGGAGAGAAATGGGGAGGAGATTGAAAATCCTCTTACTCTCTTGAATGACGCGT
TraesCS7D02G430700	CCTATGTTGAGCCGTTGGGGAACTGTGGGAAGAAGGTCTTACTGTGGTGGCTCCGTGTTG
TraesCS7B02G340100	CCTATGTTGAACCGTTGGGCAACTGTGGGAAGAAGGTCTTACTTTGGTGGCTCCGTGTTG
TraesCS7A02G441400	CCTATGTTGAGCCGTTGGGGAACTGTGGGAAAAAGGTCTTACTCTGGTGGCTCCGTGTTG
TraesCS7D02G430700	AAGCCCGGGCCGACAGCAAGTTCCACAAAGGGTGGGTGATTGAGCCACCGTTGGAAGTTG
TraesCS7B02G340100	AAGCCCGGGCCGACAGCAAGTTTCCACAAAGGGTGGGTGATTGAGCCACCTTTGGAAGTTG
TraesCS7A02G441400	AAGCCCGGGCCGACAGCAAGTTTCCACAAAGGGTGGGTGATTGAGCCACCTCTGGAGGTCG
TraesCS7D02G430700	TTGTTCCCGCCAAGCGCACACCATGGCCAGAAACCACCATGGATGTCTCATCGGAGATGT
TraesCS7B02G340100	TTGTTCCCGCCAAGCGCACACCATGGCCAGAAACCACCATGGATGTCTCATCGGAGATGT
TraesCS7A02G441400	TTGTTCCCGCCAAGCGCACACCATGGCCAGAAACCACCATGGATGTTTCATCGGAGATGT
TraesCS7D02G430700	TAGACGCCAAGCAAGAGCAAGAGGACAGGCAGCTGCCAAGGACCAACAACAGGTGAGCCC
TraesCS7B02G340100	TAGACGCCAAGCAAGAGCAGGAGGACAGGCAGCTGCCAAGGACCAACAACAGGTGAGCTC
TraesCS7A02G441400	TGGATGCCAAGCAAGAGCAGGAGGACAGGCAGCTGCCAAGGACCAACAACAGGTGAGCCA
TraesCS7D02G430700	GGCCCCGAAGCACCACCACGAAACGGGAAGGGCGACGTCCACAACCTGAGGCAGGATAAACA
TraesCS7B02G340100	GGCCCCGAAGCACCACCACGAAACGGGAAGGGCGACGTCCACAACCTGAGGCAGGATAAACA
TraesCS7A02G441400	GGCCCCGAAGCACCACCACGAAACGGGAAGGGCGACGTCCACAACCTGAGGCAGGATAAACA
TraesCS7D02G430700	GACCATGTAATGTACATCTCACACCACCTTACACCCGCGGTATCTGCAATAGGAGGCATG
TraesCS7B02G340100	AACCATGTAATGTACATCTCACATCACCTTACACCCGCGGTATCTGCAATAGGAGGCATG
TraesCS7A02G441400	GACCATGTAATGTACATCTCACACCACCTTACACCCGCGGTATCTGCAATAGGAGGCATG
TraesCS7D02G430700	TCCAGTCGATCTAGTGGGTATTGTGTTTATTTTTTTGTTTCTGATGTTTTGCTCTGGTG
TraesCS7B02G340100	TCCAGTCGATCTAGTGGGTATTGTGTTTATTTTTTTGTTTCTGATGTTTTGCTCTGGTG

TraesCS7A02G441400	TCCGGTCGATCTAGTGGGTATTGTGTTTATTTTTTTGTTTCCTGATGTTTTGCTCTGGTG
TraesCS7D02G430700	GTAACGACGACGGC---CTCGTGCTGGGGATATGTCTTCTGTAGAAGACCG---TTTCG
TraesCS7B02G340100	GCAACGACGACGACGCTCTCGTGCTG-GGATATGTCTTCC-TAGAAGACCG---TTTCG
TraesCS7A02G441400	GTAACGACGACGGC---CTCGTGCTGGGGATATGTCTTCCATAGAAGACCGTTTGTTCG
TraesCS7D02G430700	TTATCTGTAGCTCTACCTGTTGTGCTGTAATATAACACCGCAGTTGATGTCTCAAGAAAA
TraesCS7B02G340100	TTATCTGTAGCTCTACCTGTTGTGCTGTAATATAACACCGCAGTTGTTGTCTCAAGAAAA
TraesCS7A02G441400	TTATCTGTAGCTCTACCTGTTGTGCTGTAATATAACACCGCAGTTGATGTCTCAAGAAAA
TraesCS7D02G430700	TGGCGTCTGAACT-TGGATGATCTATACGCATGTCAACTCTGAAGTTTGTATCGTGTGAT
TraesCS7B02G340100	TGGTGCTCTGAATTCTGGATGACCTATACGCATGTCTGACTCTGAAGT----ATTGTGTGAT
TraesCS7A02G441400	TGGCGTCTGAATTCTGGATGACCTATACGCATGTCAACTCTGAAGTATGTATCTTGCGAT
TraesCS7D02G430700	GAATGTTTTCAAAGCACAGTTTCCCTTTTATTGGGGCGTTGTACAACCTTTACTGGACT
TraesCS7B02G340100	CAGTGTTTTTCAGG-----
TraesCS7A02G441400	GAATGTTTTCAAGGCACAGTTTCCCTTTTATTGGGGCGTCGTACAACCTTTACTGGAC--
TraesCS7D02G430700	GTACCCCTCGGTATAGTTGGTGATCTAAACGCTCTCATATTTCTTTACAAAGGGTATAT
TraesCS7B02G340100	-----
TraesCS7A02G441400	-----
TraesCS7D02G430700	TAGTTACTGCCTCCGTCTCACAATGTAAGACGTTTTCTGGGGACATTATGAGACGTTTTTC
TraesCS7B02G340100	-----
TraesCS7A02G441400	-----
TraesCS7D02G430700	TGGGCGGACAT
TraesCS7B02G340100	-----
TraesCS7A02G441400	-----

**S2a Figure: *Triticum aestivum* GT43\_1 nucleotide sequence alignment of the three homeologues.** The alignment of all three wheat GT43\_1 homeologues from IWGSC refseq1.1. The alignment was carried out using Geneious 10.0.9