

(A)

Gh\_D13G0096\_NAU ATGGCCCTCGAAATCTCTGAAATTAAGCAAGAGAGTCTATGGATGATGTTAGATCTAGC 60  
GH\_D13G0101\_ZJU ATGGCCCTCGAAATCTCTGAAATTAAGCAAGAGAGTCTATGGATGATGTTAGATCTAGC 60  
Ghir\_D13G001080.1\_HAU ATGGCCCTCGAAATCTCTGAAATTAAGCAAGAGAGTCTATGGATGATGTTAGATCTAGC 60  
Ghi\_D13G00466\_WHU ATGGCCCTCGAAATCTCTGAAATTAAGCAAGAGAGTCTATGGATGATGTTAGATCTAGC 60  
Ghi\_D13G00471\_WHU ATGGCCCTCGAAATCTCTGAAATTAAGCAAGAGAGTCTATGGATGATGTTAGATCTAGC 60  
Gohir\_D13G010300.1\_JGI ATGGCCCTCGAAATCTCTGAAATTAAGCAAGAGAGTCTATGGATGATGTTAGATCTAGC 60  
Gohir\_D13G010400.1\_JGI ATGGCCCTCGAAATCTCTGAAATTAAGCAAGAGAGTCTATGGATGATGTTAGATCTAGC 60  
Gohir\_D13G010500.1\_JGI ATGGCCCTCGAAATCTCTGAAATTAAGCAAGAGAGTCTATGGATGATGTTAGATCTAGC 60  
\*\*\*\*\*

Gh\_D13G0096\_NAU AATACTTCTCTCATCTCTAGTGCTAATGTCACCTGTGAAGAATTGCTCTAACATTAACCGA 120  
GH\_D13G0101\_ZJU AATACTTCTCTCATCTCTAGTGCTAATGTCACCTGTGAAGAATTGCTCTAACATTAACCGA 120  
Ghir\_D13G001080.1\_HAU AATACTTCTCTCATCTCTAGTGCTAATGTCACCTGTGAAGAATTGCTCTAACATTAACCGA 120  
Ghi\_D13G00466\_WHU AATACTTCTCTCATCTCTAGTGCTAATGTCACCTGTGAAGAATTGCTCTAACATTAACCGA 120  
Ghi\_D13G00471\_WHU AATACTTCTCTCATCTCTAGTGCTAATGTCACCTGTGAAGAATTGCTCTAACATTAACCGA 120  
Gohir\_D13G010300.1\_JGI AATACTTCTCTCATCTCTAGTGCTAATGTCACCTGTGAAGAATTGCTCTAACATTAACCGA 120  
Gohir\_D13G010400.1\_JGI AATACTTCTCTCATCTCTAGTGCTAATGTCACCTGTGAAGAATTGCTCTAACATTAACCGA 120  
Gohir\_D13G010500.1\_JGI AATACTTCTCTCATCTCTAGTGCTAATGTCACCTGTGAAGAATTGCTCTAACATTAACCGA 120  
\*\*\*\*\*

Gh\_D13G0096\_NAU AGTGCAAAGCATAATGAGGAACCTCGTCAGGGAGTGTCTCGGAAGAGAAGTTGACTGAA 180  
GH\_D13G0101\_ZJU AGTGCAAAGCATAATGAGGAACCTCGTCAGGGAGTGTCTCGGAAGAGAAGTTGACTGAA 180  
Ghir\_D13G001080.1\_HAU AGTGCAAAGCATAATGAGGAACCTCGTCAGGGAGTGTCTCGGAAGAGAAGTTGACTGAA 180  
Ghi\_D13G00466\_WHU AGTGCAAAGCATAATGAGGAACCTCGTCAGGGAGTGTCTCGGAAGAGAAGTTGACTGAA 180  
Ghi\_D13G00471\_WHU AGTGCAAAGCATAATGAGGAACCTCGTCAGGGAGTGTCTCGGAAGAGAAGTTGACTGAA 180  
Gohir\_D13G010300.1\_JGI AGTGCAAAGCATAATGAGGAACCTCGTCAGGGAGTGTCTCGGAAGAGAAGTTGACTGAA 180  
Gohir\_D13G010400.1\_JGI AGTGCAAAGCATAATGAGGAACCTCGTCAGGGAGTGTCTCGGAAGAGAAGTTGACTGAA 180  
Gohir\_D13G010500.1\_JGI AGTGCAAAGCATAATGAGGAACCTCGTCAGGGAGTGTCTCGGAAGAGAAGTTGACTGAA 180  
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Gh\_D13G0096\_NAU ACTGGCGAAGAAGAAAACCGAAGAGCATAGATTTGAATGTTGAGCTAACTCCGACAGGT 240  
GH\_D13G0101\_ZJU ACTGGCGAAGAAGAAAACCGAAGAGCATAGATTTGAATGTTGAGCTAACTCCGACAGGT 240  
Ghir\_D13G001080.1\_HAU ACTGGCGAAGAAGAAAACCGAAGAGCATAGATTTGAATGTTGAGCTAACTCCGACAGGT 240  
Ghi\_D13G00466\_WHU ACTGGCGAAGAAGAAAACCGAAGAGCATAGATTTGAATGTTGAGCTAACTCCGACAGGT 240  
Ghi\_D13G00471\_WHU ACTGGCGAAGAAGAAAACCGAAGAGCATAGATTTGAATGTTGAGCTAACTCCGACAGGT 240  
Gohir\_D13G010300.1\_JGI ACTGGCGAAGAAGAAAACCGAAGAGCATAGATTTGAATGTTGAGCTAACTCCGACAGGT 240  
Gohir\_D13G010400.1\_JGI ACTGGCGAAGAAGAAAACCGAAGAGCATAGATTTGAATGTTGAGCTAACTCCGACAGGT 240  
Gohir\_D13G010500.1\_JGI ACTGGCGAAGAAGAAAACCGAAGAGCATAGATTTGAATGTTGAGCTAACTCCGACAGGT 240  
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Gh\_D13G0096\_NAU CAACCCCCAAAAGATCGTTTATCTACTAACCGATCTCCGAGATCTCATCAACATCGCTA 300  
GH\_D13G0101\_ZJU CAACCCCCAAAAGATCGTTTATCTACTAACCGATCTCCGAGATCTCATCAACATCGCTA 300  
Ghir\_D13G001080.1\_HAU CAACCCCCAAAAGATCGTTTATCTACTAACCGATCTCCGAGATCTCATCAACATCGCTA 300  
Ghi\_D13G00466\_WHU CAACCCCCAAAAGATCGTTTATCTACTAACCGATCTCCGAGATCTCATCAACATCGCTA 300  
Ghi\_D13G00471\_WHU CAACCCCCAAAAGATCGTTTATCTACTAACCGATCTCCGAGATCTCATCAACATCGCTA 300  
Gohir\_D13G010300.1\_JGI CAACCCCCAAAAGATCGTTTATCTACTAACCGATCTCCGAGATCTCATCAACATCGCTA 300  
Gohir\_D13G010400.1\_JGI CAACCCCCAAAAGATCGTTTATCTACTAACCGATCTCCGAGATCTCATCAACATCGCTA 300  
Gohir\_D13G010500.1\_JGI CAACCCCCAAAAGATCGTTTATCTACTAACCGATCTCCGAGATCTCATCAACATCGCTA 300  
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Gh\_D13G0096\_NAU TCGGAAACGTCACCGATGCTTCTGAATCAACAAGACTCTTCTGGTGAAGAAGTTGAGTTC 360  
GH\_D13G0101\_ZJU TCGGAAACGTCACCGATGCTTCTGAATCAACAAGACTCTTCTGGTGAAGAAGTTGAGTTC 360  
Ghir\_D13G001080.1\_HAU TCGGAAACGTCACCGATGCTTCTGAATCAACAAGACTCTTCTGGTGAAGAAGTTGAGTTC 360  
Ghi\_D13G00466\_WHU TCGGAAACGTCACCGATGCTTCTGAATCAACAAGACTCTTCTGGTGAAGAAGTTGAGTTC 360  
Ghi\_D13G00471\_WHU TCGGAAACGTCACCGATGCTTCTGAATCAACAAGACTCTTCTGGTGAAGAAGTTGAGTTC 360  
Gohir\_D13G010300.1\_JGI TCGGAAACGTCACCGATGCTTCTGAATCAACAAGACTCTTCTGGTGAAGAAGTTGAGTTC 360  
Gohir\_D13G010400.1\_JGI TCGGAAACGTCACCGATGCTTCTGAATCAACAAGACTCTTCTGGTGAAGAAGTTGAGTTC 360  
Gohir\_D13G010500.1\_JGI TCGGAAACGTCACCGATGCTTCTGAATCAACAAGACTCTTCTGGTGAAGAAGTTGAGTTC 360  
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Gh\_D13G0096\_NAU AGCAACGCAACACCGGAGGAACCCGCACTTGTTCGATGGGTTGTACCCGTTGTTTAGTA 420  
GH\_D13G0101\_ZJU AGCAACGCAACACCGGAGGAACCCGCACTTGTTCGATGGGTTGTACCCGTTGTTTAGTA 420  
Ghir\_D13G001080.1\_HAU AGCAACGCAACACCGGAGGAACCCGCACTTGTTCGATGGGTTGTACCCGTTGTTTAGTA 420  
Ghi\_D13G00466\_WHU AGCAACGCAACACCGGAGGAACCCGCACTTGTTCGATGGGTTGTACCCGTTGTTTAGTA 420  
Ghi\_D13G00471\_WHU AGCAACGCAACACCGGAGGAACCCGCACTTGTTCGATGGGTTGTACCCGTTGTTTAGTA 420  
Gohir\_D13G010300.1\_JGI AGCAACGCAACACCGGAGGAACCCGCACTTGTTCGATGGGTTGTACCCGTTGTTTAGTA 420  
Gohir\_D13G010400.1\_JGI AGCAACGCAACACCGGAGGAACCCGCACTTGTTCGATGGGTTGTACCCGTTGTTTAGTA 420  
Gohir\_D13G010500.1\_JGI AGCAACGCAACACCGGAGGAACCCGCACTTGTTCGATGGGTTGTACCCGTTGTTTAGTA 420  
\*\*\*\*\*

Gh\_D13G0096\_NAU TTTGTGCTGACAAGTGAACCAACCCTAAGTGTGTCAATTGCCAAACCCCTGATCATCTT 480  
GH\_D13G0101\_ZJU TTTGTGCTGACAAGTGAACCAACCCTAAGTGTGTCAATTGCCAAACCCCTGATCATCTT 480  
Ghir\_D13G001080.1\_HAU TTTGTGCTGACAAGTGAACCAACCCTAAGTGTGTCAATTGCCAAACCCCTGATCATCTT 480  
Ghi\_D13G00466\_WHU TTTGTGCTGACAAGTGAACCAACCCTAAGTGTGTCAATTGCCAAACCCCTGATCATCTT 480  
Ghi\_D13G00471\_WHU TTTGTGCTGACAAGTGAACCAACCCTAAGTGTGTCAATTGCCAAACCCCTGATCATCTT 480  
Gohir\_D13G010300.1\_JGI TTTGTGCTGACAAGTGAACCAACCCTAAGTGTGTCAATTGCCAAACCCCTGATCATCTT 480  
Gohir\_D13G010400.1\_JGI TTTGTGCTGACAAGTGAACCAACCCTAAGTGTGTCAATTGCCAAACCCCTGATCATCTT 480  
Gohir\_D13G010500.1\_JGI TTTGTGCTGACAAGTGAACCAACCCTAAGTGTGTCAATTGCCAAACCCCTGATCATCTT 480  
\*\*\*\*\*

Gh\_D13G0096\_NAU ATTGATGTACTTCATTATAATCCCCCAAGAAACCAAGCATGTTTAG----- 528  
GH\_D13G0101\_ZJU ATTGATGTACTTCATTATAATCCCCCAAGAAACCAAGCATGTTTAG----- 528  
Ghir\_D13G001080.1\_HAU ATTGATGTACTTCATTATAATCCCCCAAGAAACCAAGCATGTTTAG----- 528  
Ghi\_D13G00466\_WHU ATTGATGTACTTCATTATAATCCCCCAAGAAACCAAGCATGTTTAG----- 528  
Ghi\_D13G00471\_WHU ATTGATGTACTTCATTATAATCCCCCAAGAAACCAAGCATGTTTAG----- 528  
Gohir\_D13G010300.1\_JGI ATTGATGTACTTCATTATAATCCCCCAAGAAACCAAGCATGTTTAG----- 528  
Gohir\_D13G010400.1\_JGI ATTGATGTACTTCATTATAATCCCCCAAGAAACCAAGCATGTTTAG----- 528  
Gohir\_D13G010500.1\_JGI ATTGATGTACTTCATTATAATCCCCCAAGAAACCAAGCATGTTTAGTTATTTTAA 528  
\*\*\*\*\*

(B)

Ghir_D13G001100.1_HAU	-----	0
Ghir_D13G001110.1_HAU	ATGGAGTCCCCGCCGCTCTTTCTCTACTTTCCGGTCTTACCTCAGGGCCTTGGCTCAA	60
Gh_D13G0098_NAU	ATGGAGTCCCCGCCGCTCTTTCTCTACTTTCCGGTCTTACCTCAGGGCCTTGGCTCAA	60
GH_D13G0103_ZJU	ATGGAGTCCCCGCCGCTCTTTCTCTACTTTCCGGTCTTACCTCAGGGCCTTGGCTCAA	60
Ghi_D13G00481_WHU	ATGGAGTCCCCGCCGCTCTTTCTCTACTTTCCGGTCTTACCTCAGGGCCTTGGCTCAA	60
Gohir.D13G010600.1_JGI	ATGGAGTCCCCGCCGCTCTTTCTCTACTTTCCGGTCTTACCTCAGGGCCTTGGCTCAA	60
Lig197-1	*****	60
Ghir_D13G001100.1_HAU	-----	0
Ghir_D13G001110.1_HAU	ACTCCATCTCGTTTCGCTCATCGGGCACCCCTCTGTTTCTTCCATATGAAGAGTTAAGT	120
Gh_D13G0098_NAU	ACTCCATCTCGTTTCGCTCATCGGGCACCCCTCTGTTTCTTCCATATGAAGAGTTAAGT	120
GH_D13G0103_ZJU	ACTCCATCTCGTTTCGCTCATCGGGCACCCCTCTGTTTCTTCCATATGAAGAGTTAAGT	120
Ghi_D13G00481_WHU	ACTCCATCTCGTTTCGCTCATCGGGCACCCCTCTGTTTCTTCCATATGAAGAGTTAAGT	120
Gohir.D13G010600.1_JGI	ACTCCATCTCGTTTCGCTCATCGGGCACCCCTCTGTTTCTTCCATATGAAGAGTTAAGT	120
Lig197-1	*****	120
Ghir_D13G001100.1_HAU	-----	0
Ghir_D13G001110.1_HAU	TGGGTCAAGTCCCGTCCGGCTCCAATATGCACAAGTCCCTCCGATGGTACGACTTAAT	180
Gh_D13G0098_NAU	TGGGTCAAGTCCCGTCCGGCTCCAATATGCACAAGTCCCTCCGATGGTACGACTTAAT	180
GH_D13G0103_ZJU	TGGGTCAAGTCCCGTCCGGCTCCAATATGCACAAGTCCCTCCGATGGTACGACTTAAT	180
Ghi_D13G00481_WHU	TGGGTCAAGTCCCGTCCGGCTCCAATATGCACAAGTCCCTCCGATGGTACGACTTAAT	180
Gohir.D13G010600.1_JGI	TGGGTCAAGTCCCGTCCGGCTCCAATATGCACAAGTCCCTCCGATGGTACGACTTAAT	180
Lig197-1	*****	180
Ghir_D13G001100.1_HAU	-----	0
Ghir_D13G001110.1_HAU	GGTCTTGAATAGGAGGTATGGTCGGAGCTGGTGTTCGTCACCTACCGGAAGAGTAGT	240
Gh_D13G0098_NAU	GGTCTTGAATAGGAGGTATGGTCGGAGCTGGTGTTCGTCACCTACCGGAAGAGTAGT	240
GH_D13G0103_ZJU	GGTCTTGAATAGGAGGTATGGTCGGAGCTGGTGTTCGTCACCTACCGGAAGAGTAGT	240
Ghi_D13G00481_WHU	GGTCTTGAATAGGAGGTATGGTCGGAGCTGGTGTTCGTCACCTACCGGAAGAGTAGT	240
Gohir.D13G010600.1_JGI	GGTCTTGAATAGGAGGTATGGTCGGAGCTGGTGTTCGTCACCTACCGGAAGAGTAGT	240
Lig197-1	*****	240
Ghir_D13G001100.1_HAU	-----	0
Ghir_D13G001110.1_HAU	CGTCTCTATGCTGGCCCTGCAATCTTAATCTCTTACGCCATTGCTGGTCTTTGTGCTCTC	300
Gh_D13G0098_NAU	CGTCTCTATGCTGGCCCTGCAATCTTAATCTCTTACGCCATTGCTGGTCTTTGTGCTCTC	300
GH_D13G0103_ZJU	CGTCTCTATGCTGGCCCTGCAATCTTAATCTCTTACGCCATTGCTGGTCTTTGTGCTCTC	300
Ghi_D13G00481_WHU	CGTCTCTATGCTGGCCCTGCAATCTTAATCTCTTACGCCATTGCTGGTCTTTGTGCTCTC	300
Gohir.D13G010600.1_JGI	CGTCTCTATGCTGGCCCTGCAATCTTAATCTCTTACGCCATTGCTGGTCTTTGTGCTCTC	300
Lig197-1	*****	300
Ghir_D13G001100.1_HAU	-----	0
Ghir_D13G001110.1_HAU	CTTTCCGCTTTCTGTACTACTGAGTTCGCTGTCCATATGCCCGTCGCGGGCGCGCTTT	360
Gh_D13G0098_NAU	CTTTCCGCTTTCTGTACTACTGAGTTCGCTGTCCATATGCCCGTCGCGGGCGCGCTTT	360
GH_D13G0103_ZJU	CTTTCCGCTTTCTGTACTACTGAGTTCGCTGTCCATATGCCCGTCGCGGGCGCGCTTT	360
Ghi_D13G00481_WHU	CTTTCCGCTTTCTGTACTACTGAGTTCGCTGTCCATATGCCCGTCGCGGGCGCGCTTT	360
Gohir.D13G010600.1_JGI	CTTTCCGCTTTCTGTACTACTGAGTTCGCTGTCCATATGCCCGTCGCGGGCGCGCTTT	360
Lig197-1	*****	360
Ghir_D13G001100.1_HAU	-----	0
Ghir_D13G001110.1_HAU	AGTTACCTACGTATCACATTCGGTGAGTTCGCAGCGTTTTTAACCGGAGCCAATCTGATA	420
Gh_D13G0098_NAU	AGTTACCTACGTATCACATTCGGTGAGTTCGCAGCGTTTTTAACCGGAGCCAATCTGATA	420
GH_D13G0103_ZJU	AGTTACCTACGTATCACATTCGGTGAGTTCGCAGCGTTTTTAACCGGAGCCAATCTGATA	420
Ghi_D13G00481_WHU	AGTTACCTACGTATCACATTCGGTGAGTTCGCAGCGTTTTTAACCGGAGCCAATCTGATA	420
Gohir.D13G010600.1_JGI	AGTTACCTACGTATCACATTCGGTGAGTTCGCAGCGTTTTTAACCGGAGCCAATCTGATA	420
Lig197-1	*****	420
Ghir_D13G001100.1_HAU	-----	0
Ghir_D13G001110.1_HAU	ATGGAATACGTAATGTCAAACGCCGCCGTTGCTAGAGGCTTACCTCTTATTTAAGCGCC	480
Gh_D13G0098_NAU	ATGGAATACGTAATGTCAAACGCCGCCGTTGCTAGAGGCTTACCTCTTATTTAAGCGCC	480
GH_D13G0103_ZJU	ATGGAATACGTAATGTCAAACGCCGCCGTTGCTAGAGGCTTACCTCTTATTTAAGCGCC	480
Ghi_D13G00481_WHU	ATGGAATACGTAATGTCAAACGCCGCCGTTGCTAGAGGCTTACCTCTTATTTAAGCGCC	480
Gohir.D13G010600.1_JGI	ATGGAATACGTAATGTCAAACGCCGCCGTTGCTAGAGGCTTACCTCTTATTTAAGCGCC	480
Lig197-1	*****	480
Ghir_D13G001100.1_HAU	-----	0
Ghir_D13G001110.1_HAU	GCAATCGGTATACCCACCGCAAAAATGGCGGTTTACAGCTGCGGCTCTCCAAAAGGGTTC	540
Gh_D13G0098_NAU	GCAATCGGTATACCCACCGCAAAAATGGCGGTTTACAGCTGCGGCTCTCCAAAAGGGTTC	540
GH_D13G0103_ZJU	GCAATCGGTATACCCACCGCAAAAATGGCGGTTTACAGCTGCGGCTCTCCAAAAGGGTTC	540
Ghi_D13G00481_WHU	GCAATCGGTATACCCACCGCAAAAATGGCGGTTTACAGCTGCGGCTCTCCAAAAGGGTTC	540
Gohir.D13G010600.1_JGI	GCAATCGGTATACCCACCGCAAAAATGGCGGTTTACAGCTGCGGCTCTCCAAAAGGGTTC	540
Lig197-1	*****	540

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Ghir_D13G001100.1_HAU ----- 0
Ghir_D13G001110.1_HAU ----- 600
Gh_D13G0098_NAU ----- 600
GH_D13G0103_ZJU ----- 600
Ghi_D13G00481_WHU ----- 600
Gohir.D13G010600.1_JGI ----- 600
Lig197-1 ----- 600
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AACGAAATTGACTTGTGGCCGTCGCCGTCGTATTAACCGTCACTCTCATAATCTGTTAC
AACGAAATTGACTTGTGGCCGTCGCCGTCGTATTAACCGTCACTCTCATAATCTGTTAC
*****

Ghir_D13G001100.1_HAU ----- 0
Ghir_D13G001110.1_HAU ----- 660
Gh_D13G0098_NAU ----- 660
GH_D13G0103_ZJU ----- 660
Ghi_D13G00481_WHU ----- 660
Gohir.D13G010600.1_JGI ----- 660
Lig197-1 ----- 660
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AGTACAAGGAAAGTTC AATACTGAACATGATACTCACCACATTACATATCCTTTTCATA
AGTACAAGGAAAGTTC AATACTGAACATGATACTCACCACATTACATATCCTTTTCATA
AGTACAAGGAAAGTTC AATACTGAACATGATACTCACCACATTACATATCCTTTTCATA
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Ghir_D13G001100.1_HAU ----- 0
Ghir_D13G001110.1_HAU ----- 720
Gh_D13G0098_NAU ----- 720
GH_D13G0103_ZJU ----- 720
Ghi_D13G00481_WHU ----- 720
Gohir.D13G010600.1_JGI ----- 720
Lig197-1 ----- 720
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*****

Ghir_D13G001100.1_HAU ----- 0
Ghir_D13G001110.1_HAU ----- 780
Gh_D13G0098_NAU ----- 780
GH_D13G0103_ZJU ----- 780
Ghi_D13G00481_WHU ----- 780
Gohir.D13G010600.1_JGI ----- 780
Lig197-1 ----- 780
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AACCCTAACAGCCCTCCGGTTTCCTTCCTACGGACCTCCGGTGTCTCAATGGTGCC
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Ghir_D13G001100.1_HAU ----- 0
Ghir_D13G001110.1_HAU ----- 840
Gh_D13G0098_NAU ----- 840
GH_D13G0103_ZJU ----- 840
Ghi_D13G00481_WHU ----- 840
Gohir.D13G010600.1_JGI ----- 840
Lig197-1 ----- 840
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Ghir_D13G001100.1_HAU ----- 0
Ghir_D13G001110.1_HAU ----- 900
Gh_D13G0098_NAU ----- 900
GH_D13G0103_ZJU ----- 900
Ghi_D13G00481_WHU ----- 900
Gohir.D13G010600.1_JGI ----- 900
Lig197-1 ----- 900
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Ghir_D13G001100.1_HAU ----- 0
Ghir_D13G001110.1_HAU ----- 960
Gh_D13G0098_NAU ----- 951
GH_D13G0103_ZJU ----- 951
Ghi_D13G00481_WHU ----- 951
Gohir.D13G010600.1_JGI ----- 951
Lig197-1 ----- 960
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CTGTATTGTCTCATGGCCGCTTCCATGTCCATGCTCCTCCCTACGACATG CTAGTACTT
*****#####

Ghir_D13G001100.1_HAU ----- 0
Ghir_D13G001110.1_HAU ----- 1020
Gh_D13G0098_NAU ----- 951
GH_D13G0103_ZJU ----- 951
Ghi_D13G00481_WHU ----- 951
Gohir.D13G010600.1_JGI ----- 951
Lig197-1 ----- 1020
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CTAACTTTTGTTCATGTTTGGTTGTGTATCATTTGGTCAACTACTTGCCAAGCACGG
#####

Ghir_D13G001100.1_HAU ----- 0
Ghir_D13G001110.1_HAU ----- 1032
Gh_D13G0098_NAU ----- 1009
GH_D13G0103_ZJU ----- 1009
Ghi_D13G00481_WHU ----- 1009
Gohir.D13G010600.1_JGI ----- 1009
Lig197-1 ----- 1080
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--ATCGATGTAGAGGCGCCATTTCGCGCGCGCTTCAGTGGGAGGTGGGAGTGGGTGTCTGA
--ATCGATGTAGAGGCGCCATTTCGCGCGCGCTTCAGTGGGAGGTGGGAGTGGGTGTCTGA
--ATCGATGTAGAGGCGCCATTTCGCGCGCGCTTCAGTGGGAGGTGGGAGTGGGTGTCTGA
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Ghir_D13G001100.1_HAU	-----	0
Ghir_D13G001110.1_HAU	-----	1032
Gh_D13G0098_NAU	AGGTGATCGGAGTGGGGGCCAGTTTCGGGATATCGACGTCGTTGCTGGTGCCGATGTTGG	1069
GH_D13G0103_ZJU	AGGTGATCGGAGTGGGGGCCAGTTTCGGGATATCGACGTCGTTGCTGGTGCCGATGTTGG	1069
Ghi_D13G00481_WHU	AGGTGATCGGAGTGGGGGCCAGTTTCGGGATATCGACGTCGTTGCTGGTGCCGATGTTGG	1069
Gohir.D13G010600.1_JGI	AGGTGATCGGAGTGGGGGCCAGTTTCGGGATATCGACGTCGTTGCTGGTGCCGATGTTGG	1069
Lig197-1	AGGTGATCGGAGTGGGGGCCAGTTTCGGGATATCGACGTCGTTGCTGGTGCCG <b>ATGTTGG</b> ^^	1140
Ghir_D13G001100.1_HAU	-----	0
Ghir_D13G001110.1_HAU	-----	1032
Gh_D13G0098_NAU	GCCAGGCTAGGTACATGTGCGTCATTGGACGTTCAAGCGTGGTCCCGGCATGGTTCCGCA	1129
GH_D13G0103_ZJU	GCCAGGCTAGGTACATGTGCGTCATTGGACGTTCAAGCGTGGTCCCGGCATGGTTCCGCA	1129
Ghi_D13G00481_WHU	GCCAGGCTAGGTACATGTGCGTCATTGGACGTTCAAGCGTGGTCCCGGCATGGTTCCGCA	1129
Gohir.D13G010600.1_JGI	GCCAGGCTAGGTACATGTGCGTCATTGGACGTTCAAGCGTGGTCCCGGCATGGTTCCGCA	1129
Lig197-1	GCCAGGCTAGGTACATGTGCGTCATTGGACGTTCAAGCGTGGTCCCGGCATGGTTCCGCA ^^	1200
Ghir_D13G001100.1_HAU	-----ATGGGAATTTTCACAG	16
Ghir_D13G001110.1_HAU	-----	1032
Gh_D13G0098_NAU	GGGTGCATTCTAAAACATCTACGCCCTCTCAATGCCTCCGCTTTTCTCGGAATTTTCACAG	1189
GH_D13G0103_ZJU	GGGTGCATTCTAAAACATCTACGCCCTCTCAATGCCTCCGCTTTTCTCGGAATTTTCACAG	1189
Ghi_D13G00481_WHU	GGGTGCATTCTAAAACATCTACGCCCTCTCAATGCCTCCGCTTTTCTCGGAATTTTCACAG	1189
Gohir.D13G010600.1_JGI	GGGTGCATTCTAAAACATCTACGCCCTCTCAATGCCTCCGCTTTTCTCGGAATTTTCACAG	1189
Lig197-1	GGGTGCATTCTAAAACATCTACGCCCTCTCAATGCCTCCGCTTTTCTCGGAATTTTCACAG ^^ *****	1260
Ghir_D13G001100.1_HAU	CTGCCATTGCCCTTTTCACTGATCTAAACATCCTCTTGAACCTCATATCCATTGGCACAC	76
Ghir_D13G001110.1_HAU	-----	1032
Gh_D13G0098_NAU	CTGCCATTGCCCTTTTCACTGATCTAAACATCCTCTTGAACCTCATATCCATTGGCACAC	1249
GH_D13G0103_ZJU	CTGCCATTGCCCTTTTCACTGATCTAAACATCCTCTTGAACCTCATATCCATTGGCACAC	1249
Ghi_D13G00481_WHU	CTGCCATTGCCCTTTTCACTGATCTAAACATCCTCTTGAACCTCATATCCATTGGCACAC	1249
Gohir.D13G010600.1_JGI	CTGCCATTGCCCTTTTCACTGATCTAAACATCCTCTTGAACCTCATATCCATTGGCACAC	1249
Lig197-1	CTGCCATTGCCCTTTTCACTGATCTAAACATCCTCTTGAACCTCATATCCATTGGCACAC ^^ *****	1320
Ghir_D13G001100.1_HAU	TCTTTGTCTATTACATGGTCGCAAACGCCGTAATCTACAGGCGATATGTCGTTATCGGGA	136
Ghir_D13G001110.1_HAU	-----	1032
Gh_D13G0098_NAU	TCTTTGTCTATTACATGGTCGCAAACGCCGTAATCTACAGGCGATATGTCGTTATCGGGA	1309
GH_D13G0103_ZJU	TCTTTGTCTATTACATGGTCGCAAACGCCGTAATCTACAGGCGATATGTCGTTATCGGGA	1309
Ghi_D13G00481_WHU	TCTTTGTCTATTACATGGTCGCAAACGCCGTAATCTACAGGCGATATGTCGTTATCGGGA	1309
Gohir.D13G010600.1_JGI	TCTTTGTCTATTACATGGTCGCAAACGCCGTAATCTACAGGCGATATGTCGTTATCGGGA	1309
Lig197-1	TCTTTGTCTATTACATGGTCGCAAACGCCGTAATCTACAGGCGATATGTCGTTATCGGGA ^^ *****	1380
Ghir_D13G001100.1_HAU	TAACAAAGCCGTGGCCAATATATTATCCTTCCTATGCCTATTGACCCCTCACTTCCTTCCTAT	196
Ghir_D13G001110.1_HAU	-----	1032
Gh_D13G0098_NAU	TAACAAAGCCGTGGCCAATATATTATCCTTCCTATGCCTATTGACCCCTCACTTCCTTCCTAT	1369
GH_D13G0103_ZJU	TAACAAAGCCGTGGCCAATATATTATCCTTCCTATGCCTATTGACCCCTCACTTCCTTCCTAT	1369
Ghi_D13G00481_WHU	TAACAAAGCCGTGGCCAATATATTATCCTTCCTATGCCTATTGACCCCTCACTTCCTTCCTAT	1369
Gohir.D13G010600.1_JGI	TAACAAAGCCGTGGCCAATATATTATCCTTCCTATGCCTATTGACCCCTCACTTCCTTCCTAT	1369
Lig197-1	TAACAAAGCCGTGGCCAATATATTATCCTTCCTATGCCTATTGACCCCTCACTTCCTTCCTAT ^^ *****	1440
Ghir_D13G001100.1_HAU	TCACCCGTGCGTGCCATTTTGCACCCCTCAGGGAGTTCGAAGTCCTTTCTACTCGGCCTAT	256
Ghir_D13G001110.1_HAU	-----	1032
Gh_D13G0098_NAU	TCACCCGTGCGTGCCATTTTGCACCCCTCAGGGAGTTCGAAGTCCTTTCTACTCGGCCTAT	1429
GH_D13G0103_ZJU	TCACCCGTGCGTGCCATTTTGCACCCCTCAGGGAGTTCGAAGTCCTTTCTACTCGGCCTAT	1429
Ghi_D13G00481_WHU	TCACCCGTGCGTGCCATTTTGCACCCCTCAGGGAGTTCGAAGTCCTTTCTACTCGGCCTAT	1429
Gohir.D13G010600.1_JGI	TCACCCGTGCGTGCCATTTTGCACCCCTCAGGGAGTTCGAAGTCCTTTCTACTCGGCCTAT	1429
Lig197-1	TCACCCGTGCGTGCCATTTTGCACCCCTCAGGGAGTTCGAAGTCCTTTCTACTCGGCCTAT ^^ *****	1500
Ghir_D13G001100.1_HAU	GTATCGGACTCGCCACAGCTATAAACAATAATTTTTCGTCACACGGTACC GCAAGTGCCGA	316
Ghir_D13G001110.1_HAU	-----	1032
Gh_D13G0098_NAU	GTATCGGACTCGCCACAGCTATAAACAATAATTTTTCGTCACACGGTACC GCAAGTGCCGA	1489
GH_D13G0103_ZJU	GTATCGGACTCGCCACAGCTATAAACAATAATTTTTCGTCACACGGTACC GCAAGTGCCGA	1489
Ghi_D13G00481_WHU	GTATCGGACTCGCCACAGCTATAAACAATAATTTTTCGTCACACGGTACC GCAAGTGCCGA	1489
Gohir.D13G010600.1_JGI	GTATCGGACTCGCCACAGCTATAAACAATAATTTTTCGTCACACGGTACC GCAAGTGCCGA	1489
Lig197-1	GTATCGGACTCGCCACAGCTATAAACAATAATTTTTCGTCACACGGTACC GCAAGTGCCGA ^^ *****	1560
Ghir_D13G001100.1_HAU	AACCCGAATTTTGGGGGTACCTTTTCATGCTTGGCTACCATCTATATCA-TCTTCA <b>TGA</b>	375
Ghir_D13G001110.1_HAU	-----	1032
Gh_D13G0098_NAU	AACCCGAATTTTGGGGGTACCTTTTCATGCTTGGCTACCATCTATATCA <b>AT</b> CCTTCATGA	1549
GH_D13G0103_ZJU	AACCCGAATTTTGGGGGTACCTTTTCATGCTTGGCTACCATCTATATCA <b>AT</b> CCTTCATGA	1549
Ghi_D13G00481_WHU	AACCCGAATTTTGGGGGTACCTTTTCATGCTTGGCTACCATCTATATCA <b>AT</b> CCTTCATGA	1549
Gohir.D13G010600.1_JGI	AACCCGAATTTTGGGGGTACCTTTTCATGCTTGGCTACCATCTATATCA <b>AT</b> CCTTCATGA	1549
Lig197-1	AACCCGAATTTTGGGGGTACCTTTTCATGCTTGGCTACCATCTATATCA <b>AT</b> CCTTCATGA ^^ *****	1620

Ghir_D13G001100.1_HAU	-----	375
Ghir_D13G001110.1_HAU	-----	1032
Gh_D13G0098_NAU	ATATATTTCTGTTGGGATCTTTGGATGGACTGTCGTATGTCCGGTTCGGGTTCTTTTCGG	1609
GH_D13G0103_ZJU	ATATATTTCTGTTGGGATCTTTGGATGGACTGTCGTATGTCCGGTTCGGGTTCTTTTCGG	1609
Ghi_D13G00481_WHU	ATATATTTCTGTTGGGATCTTTGGATGGACTGTCGTATGTCCGGTTCGGGTTCTTTTCGG	1609
Gohir.D13G010600.1_JGI	ATATATTTCTGTTGGGATCTTTGGATGGACTGTCGTATGTCCGGTTCGGGTTCTTTTCGG	1609
Lig197-1	ATATATTTCTGTTGGGATCTTTGGATGGACTGTCGTATGTCCGGTTCGGGTTCTTTTCGG	1680
	^^	
Ghir_D13G001100.1_HAU	-----	375
Ghir_D13G001110.1_HAU	-----	1032
Gh_D13G0098_NAU	GTCTAGCGGTACTCGTATATGTCTTGTACAGTGTTTCATGCTAGCTTTGATGCTGAAGCAG	1669
GH_D13G0103_ZJU	GTCTAGCGGTACTCGTATATGTCTTGTACAGTGTTTCATGCTAGCTTTGATGCTGAAGCAG	1669
Ghi_D13G00481_WHU	GTCTAGCGGTACTCGTATATGTCTTGTACAGTGTTTCATGCTAGCTTTGATGCTGAAGCAG	1669
Gohir.D13G010600.1_JGI	GTCTAGCGGTACTCGTATATGTCTTGTACAGTGTTTCATGCTAGCTTTGATGCTGAAGCAG	1669
Lig197-1	GTCTAGCGGTACTCGTATATGTCTTGTACAGTGTTTCATGCTAGCTTTGATGCTGAAGCAG	1740
	^^	
Ghir_D13G001100.1_HAU	-----	375
Ghir_D13G001110.1_HAU	-----	1032
Gh_D13G0098_NAU	AGGGATTTTtaggtgTAAAGAATGGTGAATGATCAGAGAATCAACAGAAAGTGAAGAAG	1729
GH_D13G0103_ZJU	AGGGATTTTtaggtgTAAAGAATGGTGAATGATCAGAGAATCAACAGAAAGTGAAGAAG	1729
Ghi_D13G00481_WHU	AGGGATTTTtaggtgTAAAGAATGGTGAATGATCAGAGAATCAACAGAAAGTGAAGAAG	1729
Gohir.D13G010600.1_JGI	AGGGATTTTtaggtgTAAAGAATGGTGAATGATCAGAGAATCAACAGAAAGTGAAGAAG	1729
Lig197-1	AGGGATTTTtaggtgTAAAGAATGGTGAATGATCAGAGAATCAACAGAAAGTGAAGAAG	1800
	^^	
Ghir_D13G001100.1_HAU	-----	375
Ghir_D13G001110.1_HAU	-----	1032
Gh_D13G0098_NAU	ACCCAAATCACAAGGTGTAA	1749
GH_D13G0103_ZJU	ACCCAAATCACAAGGTGTAA	1749
Ghi_D13G00481_WHU	ACCCAAATCACAAGGTGTAA	1749
Gohir.D13G010600.1_JGI	ACCCAAATCACAAGGTGTAA	1749
Lig197-1	ACCCAAATCACAAGGTGTAA	1820
	^^	

**Figure S5.** Alignment of the two DEGs at the  $N_5$  locus from different versions of TM-1

- (A) Alignment of the coding sequences of *D13G0096* and their counterparts in the published *G. hirsutum* genomes.
- (B) Alignment of the coding sequences of *D13G0098* and their counterparts in the published *G. hirsutum* genomes. The 1<sup>st</sup> intron annotated in *D13G0098* and retained in the cDNA clone (Lig197-1) is highlighted in green. The 2<sup>nd</sup> ORF of the cDNA clone (Lig197-1), which is different from the annotated *Ghir\_D13G001100.1\_HAU*, is highlighted in yellow.