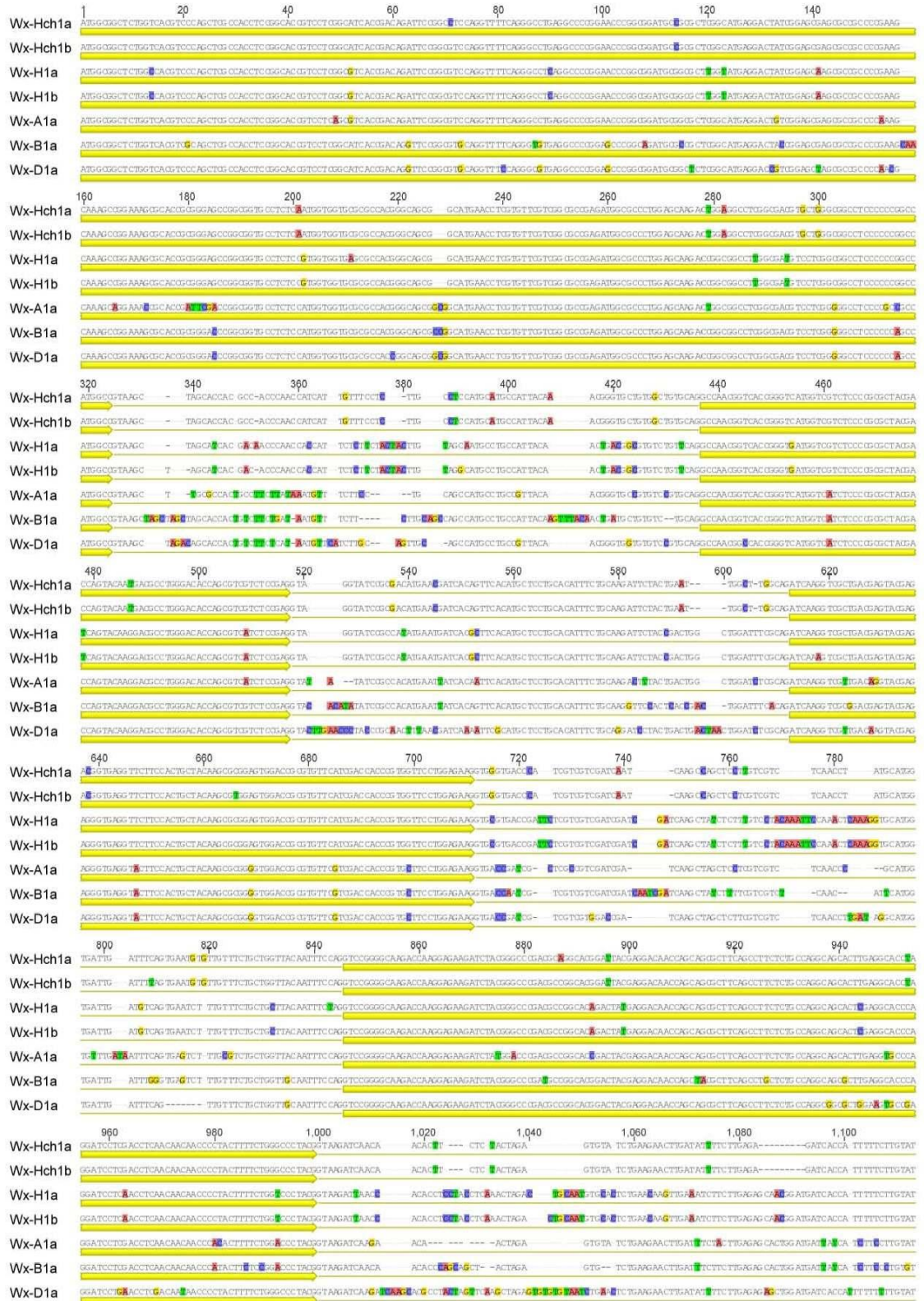
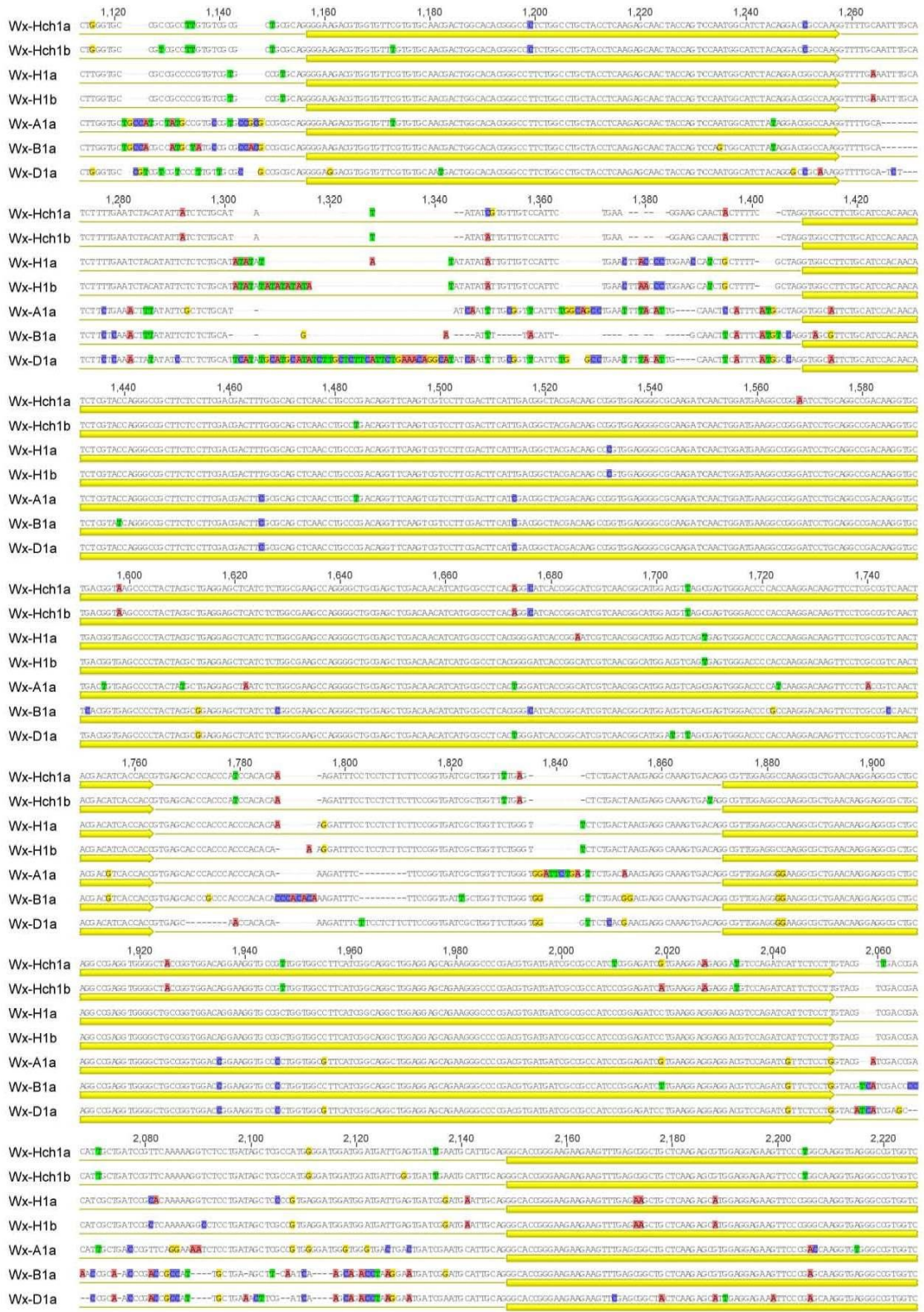


# Supplementary material

**Figure S1.** Alignment of nucleotide sequences of the Wx alleles evaluated in this study. Yellow arrows indicate the 2<sup>nd</sup> to 12<sup>th</sup> exons showed in Figure 1a.





**Wx-Hch1a** 2,240 2,260 2,280 2,300 2,320 2,340 2,360 2,380  
 AGG TTCACAGGCGCCCTAGCTCACCAGATBAAAGGCGGCGCGACTTGGCTCGTCCACAGCGCGCTTGGAGCCCTGGAGCTCCAGGCTCCAGGGAAAGGTAAGGCGCTCCCTCTTCTGCGAGTTCTCCACCTCA

**Wx-Hch1b** AGG TTCACAGGCGCCCTAGCTCACCAGATBAAAGGCGGCGCGACTTGGCTCGTCCACAGCGCGCTTGGAGCCCTGGAGCTCCAGGCTCCAGGGAAAGGTAAGGCGCTCCCTCTTCTGCGAGTTCTCCACCTCA

**Wx-H1a** AGG TTCACAGGCGCCCTAGCTCACCAGATBAAAGGCGGCGCGACTTGGCTCGTCCACAGCGCGCTTGGAGCCCTGGAGCTCCAGGCTCCAGGGAAAGGTAAGGCGCTCCCTCTTCTGCGAGTTCTCCACCTCA

**Wx-H1b** AGG TTCACAGGCGCCCTAGCTCACCAGATBAAAGGCGGCGCGACTTGGCTCGTCCACAGCGCGCTTGGAGCCCTGGAGCTCCAGGCTCCAGGGAAAGGTAAGGCGCTCCCTCTTCTGCGAGTTCTCCACCTCA

**Wx-A1a** AGG TTCACAGGCGCCCTAGCTCACCAGATBAAAGGCGGCGCGACTTGGCTCGTCCACAGCGCGCTTGGAGCCCTGGAGCTCCAGGCTCCAGGGAAAGGTAAGGCGCTCCCTCTTCTGCGAGTTCTCCACCTCA

**Wx-B1a** AGG TTCACAGGCGCCCTAGCTCACCAGATBAAAGGCGGCGCGACTTGGCTCGTCCACAGCGCGCTTGGAGCCCTGGAGCTCCAGGCTCCAGGGAAAGGTAAGGCGCTCCCTCTTCTGCGAGTTCTCCACCTCA

**Wx-D1a** AGG TTCACAGGCGCCCTAGCTCACCAGATBAAAGGCGGCGCGACTTGGCTCGTCCACAGCGCGCTTGGAGCCCTGGAGCTCCAGGCTCCAGGGAAAGGTAAGGCGCTCCCTCTTCTGCGAGTTCTCCACCTCA

**Wx-Hch1a** 2,400 2,420 2,440 2,460 2,480 2,500 2,520 2,540  
 TTTTG CAT ATCCATGGCCATGACCGAGTTTCTTCCAAATTTTCAGCGTGGCGTGGCGGTCCAGCGGAGCTGGTGAACATGCTGGAGGGCAGACCGGTTCCACATGGGCGGCTGAGCGTGAAGCTCCTCTTTGGT

**Wx-Hch1b** TTTTG CAT ATCCATGGCCATGACCGAGTTTCTTCCAAATTTTCAGCGTGGCGTGGCGGTCCAGCGGAGCTGGTGAACATGCTGGAGGGCAGACCGGTTCCACATGGGCGGCTGAGCGTGAAGCTCCTCTTTGGT

**Wx-H1a** TTTTG CAT ATCCATGGCCATGACCGAGTTTCTTCCAAATTTTCAGCGTGGCGTGGCGGTCCAGCGGAGCTGGTGAACATGCTGGAGGGCAGACCGGTTCCACATGGGCGGCTGAGCGTGAAGCTCCTCTTTGGT

**Wx-H1b** TTTTG CAT ATCCATGGCCATGACCGAGTTTCTTCCAAATTTTCAGCGTGGCGTGGCGGTCCAGCGGAGCTGGTGAACATGCTGGAGGGCAGACCGGTTCCACATGGGCGGCTGAGCGTGAAGCTCCTCTTTGGT

**Wx-A1a** TTTTG CAT ATCCATGGCCATGACCGAGTTTCTTCCAAATTTTCAGCGTGGCGTGGCGGTCCAGCGGAGCTGGTGAACATGCTGGAGGGCAGACCGGTTCCACATGGGCGGCTGAGCGTGAAGCTCCTCTTTGGT

**Wx-B1a** TTTTG CAT ATCCATGGCCATGACCGAGTTTCTTCCAAATTTTCAGCGTGGCGTGGCGGTCCAGCGGAGCTGGTGAACATGCTGGAGGGCAGACCGGTTCCACATGGGCGGCTGAGCGTGAAGCTCCTCTTTGGT

**Wx-D1a** TTTTG CAT ATCCATGGCCATGACCGAGTTTCTTCCAAATTTTCAGCGTGGCGTGGCGGTCCAGCGGAGCTGGTGAACATGCTGGAGGGCAGACCGGTTCCACATGGGCGGCTGAGCGTGAAGCTCCTCTTTGGT

**Wx-Hch1a** 2,560 2,580 2,600 2,620 2,640 2,660 2,680 2,700  
 GAAATTCATTCTCTGTTAATCCCTGGCAGCCAGGCGATCATGAAAATTTTTCCTTCTTGGTGGCCAGTCCAGGCTGGTGGAGCCGCTGCTGAAGAGGCTGGGACCCACCCTGAGCCCGCTCAGGCTGGTGGCAGGCGG

**Wx-Hch1b** GAAATTCATTCTCTGTTAATCCCTGGCAGCCAGGCGATCATGAAAATTTTTCCTTCTTGGTGGCCAGTCCAGGCTGGTGGAGCCGCTGCTGAAGAGGCTGGGACCCACCCTGAGCCCGCTCAGGCTGGTGGCAGGCGG

**Wx-H1a** GAAATTCATTCTCTGTTAATCCCTGGCAGCCAGGCGATCATGAAAATTTTTCCTTCTTGGTGGCCAGTCCAGGCTGGTGGAGCCGCTGCTGAAGAGGCTGGGACCCACCCTGAGCCCGCTCAGGCTGGTGGCAGGCGG

**Wx-H1b** GAAATTCATTCTCTGTTAATCCCTGGCAGCCAGGCGATCATGAAAATTTTTCCTTCTTGGTGGCCAGTCCAGGCTGGTGGAGCCGCTGCTGAAGAGGCTGGGACCCACCCTGAGCCCGCTCAGGCTGGTGGCAGGCGG

**Wx-A1a** GAAATTCATTCTCTGTTAATCCCTGGCAGCCAGGCGATCATGAAAATTTTTCCTTCTTGGTGGCCAGTCCAGGCTGGTGGAGCCGCTGCTGAAGAGGCTGGGACCCACCCTGAGCCCGCTCAGGCTGGTGGCAGGCGG

**Wx-B1a** GAAATTCATTCTCTGTTAATCCCTGGCAGCCAGGCGATCATGAAAATTTTTCCTTCTTGGTGGCCAGTCCAGGCTGGTGGAGCCGCTGCTGAAGAGGCTGGGACCCACCCTGAGCCCGCTCAGGCTGGTGGCAGGCGG

**Wx-D1a** GAAATTCATTCTCTGTTAATCCCTGGCAGCCAGGCGATCATGAAAATTTTTCCTTCTTGGTGGCCAGTCCAGGCTGGTGGAGCCGCTGCTGAAGAGGCTGGGACCCACCCTGAGCCCGCTCAGGCTGGTGGCAGGCGG

**Wx-Hch1a** 2,720 2,740 2,760 2,780 2,800 2,820 2,840 2,860  
 TAC CAGGAGATGGTCAAGAACTGCATGATCCAGGATCTCTCTGGAGGTACATAAATTTTGGTTTAAATGGTGGCGGCAACATTTAAGAC TGATGCTCAATGGTGGTCTGGGCGTGA

**Wx-Hch1b** TAC CAGGAGATGGTCAAGAACTGCATGATCCAGGATCTCTCTGGAGGTACATAAATTTTGGTTTAAATGGTGGCGGCAACATTTAAGAC TGATGCTCAATGGTGGTCTGGGCGTGA

**Wx-H1a** TAC CAGGAGATGGTCAAGAACTGCATGATCCAGGATCTCTCTGGAGGTACATAAATTTTGGTTTAAATGGTGGCGGCAACATTTAAGAC TGATGCTCAATGGTGGTCTGGGCGTGA

**Wx-H1b** TAC CAGGAGATGGTCAAGAACTGCATGATCCAGGATCTCTCTGGAGGTACATAAATTTTGGTTTAAATGGTGGCGGCAACATTTAAGAC TGATGCTCAATGGTGGTCTGGGCGTGA

**Wx-A1a** TAC CAGGAGATGGTCAAGAACTGCATGATCCAGGATCTCTCTGGAGGTACATAAATTTTGGTTTAAATGGTGGCGGCAACATTTAAGAC TGATGCTCAATGGTGGTCTGGGCGTGA

**Wx-B1a** TAC CAGGAGATGGTCAAGAACTGCATGATCCAGGATCTCTCTGGAGGTACATAAATTTTGGTTTAAATGGTGGCGGCAACATTTAAGAC TGATGCTCAATGGTGGTCTGGGCGTGA

**Wx-D1a** TAC CAGGAGATGGTCAAGAACTGCATGATCCAGGATCTCTCTGGAGGTACATAAATTTTGGTTTAAATGGTGGCGGCAACATTTAAGAC TGATGCTCAATGGTGGTCTGGGCGTGA

**Wx-Hch1a** 2,880 2,900 2,920 2,940 2,960 2,980 2,987  
 TGC TSCAGGACCTCCAGAACTGGAGGAGTCTTCTGGAACTGGGGTGGAGGAGGAGCCAGGATGGTGGAGATGGGCGCTGGCCATGGAGGAAGTGGCGCTCCCTGA

**Wx-Hch1b** TGC TSCAGGACCTCCAGAACTGGAGGAGTCTTCTGGAACTGGGGTGGAGGAGGAGCCAGGATGGTGGAGATGGGCGCTGGCCATGGAGGAAGTGGCGCTCCCTGA

**Wx-H1a** TGC TSCAGGACCTCCAGAACTGGAGGAGTCTTCTGGAACTGGGGTGGAGGAGGAGCCAGGATGGTGGAGAGATGGGCGCTGGCCATGGAGGAAGTGGCGCTCCCTGA

**Wx-H1b** TGC TSCAGGACCTCCAGAACTGGAGGAGTCTTCTGGAACTGGGGTGGAGGAGGAGCCAGGATGGTGGAGAGATGGGCGCTGGCCATGGAGGAAGTGGCGCTCCCTGA

**Wx-A1a** TGC TSCAGGACCTCCAGAACTGGAGGAGTCTTCTGGAACTGGGGTGGAGGAGGAGCCAGGATGGTGGAGAGATGGGCGCTGGCCATGGAGGAAGTGGCGCTCCCTGA

**Wx-B1a** TGC TSCAGGACCTCCAGAACTGGAGGAGTCTTCTGGAACTGGGGTGGAGGAGGAGCCAGGATGGTGGAGAGATGGGCGCTGGCCATGGAGGAAGTGGCGCTCCCTGA

**Wx-D1a** TGC TSCAGGACCTCCAGAACTGGAGGAGTCTTCTGGAACTGGGGTGGAGGAGGAGCCAGGATGGTGGAGAGATGGGCGCTGGCCATGGAGGAAGTGGCGCTCCCTGA

**Figure S2.** Alignment of deduced protein sequences of the waxy proteins evaluated in this study.

