

Supplemental file.

Table S1. Primers used for *Cyp51A* site-directed mutagenesis in this study

Primer	Sequence (5' to 3')
cyp51A-T960A-Up1S	ACGTGCGTAGCAAGGGAGAA
cyp51A-T960A-Up1A	GCGCTGATGGACGAAGACGTATGCTGACCAGCCATCAACAGG
cyp51A-T960A-Up2S	CCTGTTGATGGCTGGTCAGCATAACGTCTTCGTCCATCAGCGC
cyp51A-T960A-Up2A	GTCGTTGCGTCAGTCCAAAACAACACTTCAGGGCCAGTAA
cyp51A-T960A-ptrAs	TTACTGGCCCTGAAGTGTGTTTTGGACTGACGCAACGAC
cyp51A-T960A-ptrAa	CCTTCTCGTCTTTGCGTGCCACTTTATGCTTCCGGCTC
cyp51A-T960A-DwS	GAGCCGGAAGCATAAAGTGGCACGCAAAGACGAGAAGG
cyp51A-T960A-DwA	CGCTGGGGCGAACATAACC
cyp51A-T960A-yS	TTGAATGTATTCCAACGAGCTG
cyp51A-T960A-yA	CCTGGGAGAAGAATTGGTCTG
cyp51A-T1554A-Up1S	TTTCGGATCGGACGTGGTG
cyp51A-T1554A-Up1A	GCTTCATGGGGCCCGAAATGAGGGATGAATAGTCAGTTTCAGG
cyp51A-T1554A-Up2S	CCTGAAACTGACTATTCATCCCTCATTTTCGGGCCCCATGAAGC
cyp51A-T1554A-Up2A	GTCGTTGCGTCAGTCCAACGTGCCAAGGCCAAGGCT
cyp51A-T1554A-ptrAs	AGCCTTGGCCTTGGCACGTTGGACTGACGCAACGAC
cyp51A-T1554A-ptrAa	CACAAAGGGCATATCCCTTCTCCACTTTATGCTTCCGGCTC
cyp51A-T1554A-DwS	GAGCCGGAAGCATAAAGTGGAGAAGGGATATGCCCTTTGTG
cyp51A-T1554A-DwA	CAGCAGGCGTATTGGTGAGC
cyp51A-T1554A-yS	GGCACGCAAAGACGAGAA
cyp51A-T1554A-yA	AAAGAGCACGACCCGACC
T960A-Up2A-hpgA	GAGCTCCAGCTTTTGTTCACAACAACACTTCAGGGCCAGTAA
cyp51A-T960A-hpgs	TTACTGGCCCTGAAGTGTGTTGGAACAAAAGCTGGAGCTC
cyp51A-T960A-hpgAa	CCTTCTCGTCTTTGCGTGCGTCGACGGTATCGATAAGCTT
T960A-DwS-hpgA	AAGCTTATCGATACCGTCGACGCACGCAAAGACGAGAAGG
T1554A-Up2A-hpgA	GAGCTCCAGCTTTTGTTCCTCGTGCCAAGGCCAAGGCT
cyp51A-T1554A--hpgAs	AGCCTTGGCCTTGGCACGGGAACAAAAGCTGGAGCTC
cyp51A-T1554A--hpgAa	CACAAAGGGCATATCCCTTCTCGTCGACGGTATCGATAAGCTT
T1554A-DwS-hpgA	AAGCTTATCGATACCGTCGACGAGAAGGGATATGCCCTTTGTG

Table S2. Abbreviations of species names.

Abbreviation (EPPO code)	Name of pathogen
ASPEFU	<i>Aspergillus fumigatus</i>
ASPEFL	<i>Aspergillus flavus</i>
ERYSGT	<i>Blumeria graminis</i>
MONIFC	<i>Monilinia fructicola</i>
MYCOFI	<i>Mycosphaerella fijiensis</i>
PENIDI	<i>Penicillium digitatum</i>
PSDCHE	<i>Oculimacula yallundae</i>
PYRNTE	<i>Pyrenophora teres</i>
SEPTTR	<i>Zymoseptoria tritici</i>
UNCINE	<i>Erysiphe necator</i>
VENTIN	<i>Venturia inaequalis</i>

Figure S1. Amino acid sequence alignment of the Cyp51 family. Sequences are named by species EPPO code and NCBI gene accession number. The mutation labels shown above the alignment are based on the position number of the amino acid in Cyp51A sequence from *Aspergillus fumigatus*. Residues highlighted in yellow denote amino acid substitutions associated with fungicide resistance at an orthologous position of *A. fumigatus* (Cyp51A).

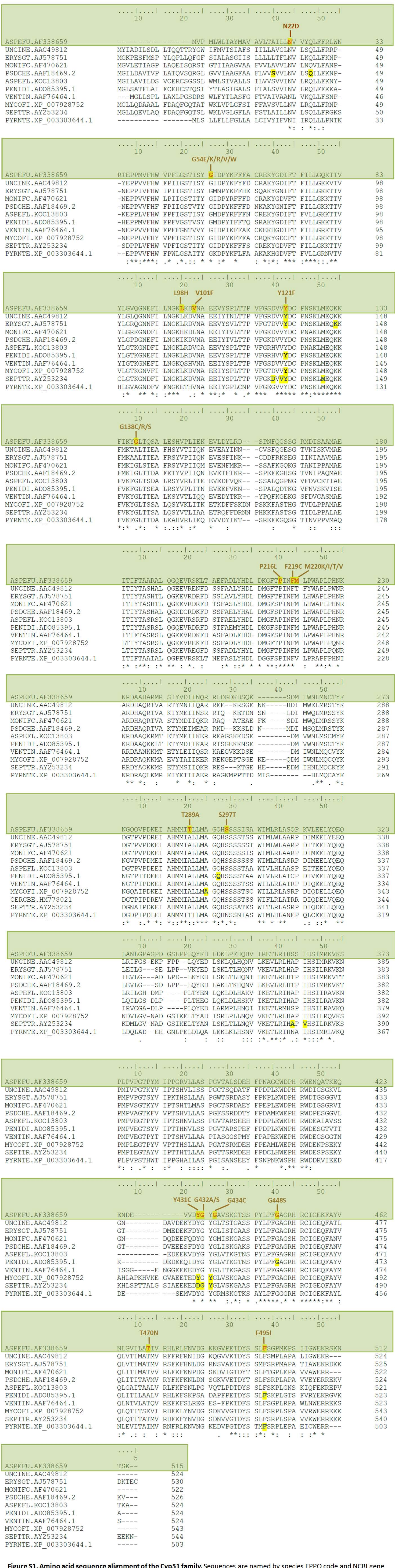


Figure S1. Amino acid sequence alignment of the Cyp51 family. Sequences are named by species EPPO code and NCBI gene accession number. The mutation labels shown above the alignment are based on the position number of the amino acid in Cyp51A sequence from *Aspergillus fumigatus*. Residues highlighted in yellow denote amino acid substitutions associated with fungicide resistance at an orthologous position of *A. fumigatus* (Cyp51A).