

Table S2. Collection of Estonian *Pyrenopora teres f. teres* isolates with relevant data of fungicide target gene sequences and Genbank accession number of representative isolates.

| Isolate ^a | County | Insert in CYP51A promoter | CYP51A ^b | Codon sequence in position 489 in CYP51A | SdhC | SdhD | Cyt b | GenBank Accession Number |
|----------------------|----------|---------------------------|---------------------|--|------|---------|-------|----------------------------|
| 22-PT-EE-05-01 | Ida-Viru | - | PttEE-A3 | CTC | - | D-H134R | - | - |
| 22-PT-EE-05-02 | Ida-Viru | - | PttEE-A3 | CTC | - | D-H134R | - | - |
| 22-PT-EE-05-03 | Ida-Viru | - | PttEE-A3 | CTC | - | D-H134R | - | - |
| 22-PT-EE-05-04 | Ida-Viru | - | PttEE-A3 | CTC | - | D-H134R | - | - |
| 22-PT-EE-05-05 | Ida-Viru | - | PttEE-A3 | CTC | - | D-H134R | - | OR761970 (<i>sdhD</i>) |
| 22-PT-EE-05-06 | Ida-Viru | - | PttEE-A3 | CTC | - | D-H134R | - | - |
| 22-PT-EE-05-07 | Ida-Viru | - | PttEE-A3 | CTC | - | D-H134R | - | - |
| 22-PT-EE-05-08 | Ida-Viru | - | PttEE-A3 | CTC | - | D-H134R | - | - |
| 22-PT-EE-05-09 | Ida-Viru | - | PttEE-A3 | CTC | - | D-H134R | - | - |
| 22-PT-EE-05-10 | Ida-Viru | - | PttEE-A3 | CTC | - | D-H134R | - | - |
| 22-PT-EE-07-01 | Ida-Viru | + | PttEE-A2 | TTC | - | D-H134R | - | OR530176 (<i>Cyp51A</i>) |
| 22-PT-EE-07-02 | Ida-Viru | + | PttEE-A2 | TTC | - | D-H134R | - | - |
| 22-PT-EE-07-03 | Ida-Viru | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-07-04 | Ida-Viru | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-09-01 | Ida-Viru | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-09-02 | Ida-Viru | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-09-03 | Ida-Viru | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-09-04 | Ida-Viru | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-09-05 | Ida-Viru | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-11-01 | Ida-Viru | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-11-02 | Ida-Viru | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-11-03 | Ida-Viru | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-16-03 | Jõgeva | - | PttEE-A3 | CTC | - | D-H134R | - | - |
| 22-PT-EE-16-04 | Jõgeva | - | PttEE-A3 | CTC | - | D-H134R | - | - |
| 22-PT-EE-16-09 | Jõgeva | - | PttEE-A3 | CTC | - | D-H134R | - | - |

| | | | | | | | | |
|----------------|----------------|---|----------|-----|---|-------------|-------|---|
| 22-PT-EE-16-10 | Jõgeva | - | PttEE-A3 | CTC | - | D- H134R | - | - |
| 22-PT-EE-23-01 | Jõgeva | + | PttEE-A2 | TTC | - | D- H134R | - | - |
| 22-PT-EE-23-02 | Jõgeva | + | PttEE-A2 | TTC | - | D- H134R | - | - |
| 22-PT-EE-23-03 | Jõgeva | + | PttEE-A2 | TTC | - | D- H134R | - | - |
| 22-PT-EE-23-04 | Jõgeva | + | PttEE-A2 | TTC | - | D- H134R | - | - |
| 22-PT-EE-23-05 | Jõgeva | + | PttEE-23 | TTC | - | D- H134R | - | - |
| 22-PT-EE-23-06 | Jõgeva | + | PttEE-23 | TTC | - | D- H134R | - | - |
| 22-PT-EE-02-01 | Järva | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-13-01 | Järva | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-13-02 | Järva | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-13-03 | Järva | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-13-04 | Järva | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-13-05 | Järva | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-13-06 | Järva | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-13-07 | Järva | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-14-01 | Järva | - | PttEE-14 | TTC | - | - | F129L | - |
| 22-PT-EE-14-02 | Järva | - | PttEE-14 | TTC | - | - | F129L | - |
| 22-PT-EE-14-03 | Järva | - | PttEE-14 | TTC | - | - | F129L | - |
| 22-PT-EE-28-01 | Lääne- Viru | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-28-02 | Lääne- Viru | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-28-03 | Lääne- Viru | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-28-04 | Lääne- Viru | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-28-05 | Lääne- Viru | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-29-01 | Pärnu | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-29-02 | Pärnu | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-29-03 | Pärnu | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-29-04 | Pärnu | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-29-05 | Pärnu | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-29-06 | Pärnu | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-29-07 | Pärnu | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-29-08 | Pärnu | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-29-09 | Pärnu | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-29-10 | Pärnu | - | PttEE-A3 | CTC | - | - | - | - |

| | | | | | | | | |
|----------------|-------|---|----------|-----|-------------|-------------|-------|---|
| 22-PT-EE-29-11 | Pärnu | - | PttEE-A3 | CTC | - | - | - | OR761972 (<i>sdhC</i>), OR777248 (<i>sdhB</i>) |
| 22-PT-EE-29-12 | Pärnu | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-29-14 | Pärnu | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-31-01 | Pärnu | - | PttEE-A3 | CTC | C- S135R | - | F129L | - |
| 22-PT-EE-31-02 | Pärnu | - | PttEE-A3 | CTC | C- S135R | - | F129L | OR761971 (<i>sdhD</i>) |
| 22-PT-EE-35-01 | Tartu | - | PttEE-A1 | TTC | - | D- H134R | - | - |
| 22-PT-EE-35-02 | Tartu | - | PttEE-A1 | TTC | - | D- H134R | - | - |
| 22-PT-EE-35-03 | Tartu | - | PttEE-A1 | TTC | - | D- H134R | - | - |
| 22-PT-EE-35-04 | Tartu | - | PttEE-A1 | TTC | - | D- H134R | - | - |
| 22-PT-EE-35-05 | Tartu | - | PttEE-A1 | TTC | - | D- H134R | - | OR761967 (<i>Cyp51A</i>) |
| 22-PT-EE-35-06 | Tartu | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-35-07 | Tartu | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-35-08 | Tartu | - | PttEE-A1 | TTC | - | D- H134R | - | - |
| 22-PT-EE-35-09 | Tartu | - | PttEE-A1 | TTC | - | D- H134R | - | - |
| 22-PT-EE-35-10 | Tartu | - | PttEE-A1 | TTC | - | D- H134R | - | - |
| 22-PT-EE-36-01 | Tartu | + | PttEE-A2 | TTC | - | D- H134R | - | - |
| 22-PT-EE-36-02 | Tartu | + | PttEE-A2 | TTC | - | D- H134R | - | OR530176 (<i>Cyp51A</i>) |
| 22-PT-EE-36-03 | Tartu | + | PttEE-A2 | TTC | - | D- H134R | - | - |
| 22-PT-EE-36-04 | Tartu | + | PttEE-A2 | TTC | - | D- H134R | - | - |
| 22-PT-EE-36-05 | Tartu | + | PttEE-A2 | TTC | - | D- H134R | - | - |
| 22-PT-EE-36-06 | Tartu | + | PttEE-23 | TTC | - | D- H134R | - | - |
| 22-PT-EE-36-07 | Tartu | + | PttEE-A2 | TTC | - | D- H134R | - | - |
| 22-PT-EE-36-08 | Tartu | + | PttEE-A2 | TTC | - | D- H134R | - | - |
| 22-PT-EE-36-09 | Tartu | + | PttEE-A2 | TTC | - | D- H134R | - | - |
| 22-PT-EE-38-02 | Tartu | - | PttEE-A3 | CTC | C- S135R | - | - | - |
| 22-PT-EE-38-05 | Tartu | - | PttEE-A3 | CTC | C- S135R | - | - | - |
| 22-PT-EE-38-06 | Tartu | - | PttEE-A3 | CTC | C- S135R | - | F129L | - |

| | | | | | | | | |
|----------------|----------|---|----------|-----|-------------|-------------|-------|----------------------|
| 22-PT-EE-38-07 | Tartu | - | PttEE-A3 | CTC | C- S135R | - | F129L | - |
| 22-PT-EE-38-08 | Tartu | - | PttEE-A4 | TTA | C- S135R | - | F129L | - |
| 22-PT-EE-38-09 | Tartu | - | PttEE-A3 | CTC | C- S135R | - | - | OR761968 (Cyp51A) |
| 22-PT-EE-38-10 | Tartu | - | PttEE-A3 | CTC | C- S135R | - | - | - |
| 22-PT-EE-04-01 | Valga | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-41-01 | Valga | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-41-02 | Valga | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-41-03 | Valga | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-41-04 | Valga | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-41-05 | Valga | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-41-06 | Valga | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-41-07 | Valga | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-41-08 | Valga | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-41-09 | Valga | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-41-10 | Valga | - | PttEE-A3 | CTC | - | - | - | OR777246 (cytb) |
| 22-PT-EE-43-01 | Valga | - | PttEE-A3 | CTC | C- S135R | - | - | OR761973 (SdhC) |
| 22-PT-EE-43-02 | Valga | - | PttEE-A3 | CTC | - | D- H134R | - | - |
| 22-PT-EE-43-03 | Valga | - | PttEE-A3 | CTC | - | D- H134R | - | - |
| 22-PT-EE-43-04 | Valga | - | PttEE-A3 | CTC | - | D- H134R | - | - |
| 22-PT-EE-43-05 | Valga | - | PttEE-A3 | CTC | - | D- H134R | - | - |
| 22-PT-EE-03-02 | Viljandi | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-03-03 | Viljandi | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-03-04 | Viljandi | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-03-05 | Viljandi | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-03-06 | Viljandi | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-03-07 | Viljandi | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-01-01 | Võru | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-01-02 | Võru | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-01-03 | Võru | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-01-04 | Võru | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-01-05 | Võru | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-01-06 | Võru | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-01-07 | Võru | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-01-08 | Võru | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-45-01 | Võru | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-45-05 | Võru | - | PttEE-A3 | CTC | - | - | - | - |

| | | | | | | | | |
|----------------|----------|---|------------|-----|-------------|---|-------|-------------------------------|
| 22-PT-EE-45-06 | Võru | - | PttEE-4506 | TTC | - | - | - | - |
| 22-PT-EE-45-07 | Võru | - | PttEE-4507 | TTC | - | - | - | - |
| 22-PT-EE-45-08 | Võru | - | PttEE-A3 | CTC | - | - | - | - |
| 22-PT-EE-49-01 | Võru | - | PttEE-A3 | CTC | C- S135R | - | F129L | - |
| 22-PT-EE-49-04 | Võru | - | PttEE-A4 | TTA | C- S135R | - | F129L | - |
| 22-PT-EE-49-05 | Võru | - | PttEE-A4 | TTA | C- S135R | - | F129L | OR761969 (<i>Cyp51A</i>) |
| 22-PT-EE-49-06 | Võru | - | PttEE-A4 | TTA | C- S135R | - | F129L | - |
| 22-PT-EE-49-07 | Võru | - | PttEE-A4 | TTA | C- S135R | - | F129L | - |
| 22-PT-EE-49-08 | Võru | - | PttEE-A4 | TTA | C- S135R | - | F129L | OR777247 (<i>cytb</i>) |
| 22-PT-EE-49-09 | Võru | - | PttEE-A4 | TTA | C- S135R | - | F129L | - |
| 22-PT-EE-49-10 | Võru | - | PttEE-A4 | TTA | C- S135R | - | F129L | - |
| 22-PT-EE-49-11 | Võru | - | PttEE-A4 | TTA | C- S135R | - | F129L | - |
| 22-PT-EE-50-01 | Võru | - | PttEE-A4 | TTA | - | - | - | - |
| 22-PT-EE-50-02 | Võru | - | PttEE-A4 | TTA | - | - | - | - |
| 22-PT-EE-50-03 | Võru | - | PttEE-A4 | TTA | - | - | - | - |
| 22-PT-EE-50-04 | Võru | - | PttEE-A4 | TTA | - | - | - | - |
| 22-PT-EE-50-05 | Võru | - | PttEE-A4 | TTA | - | - | - | - |
| 22-PT-EE-50-06 | Võru | - | PttEE-A4 | TTA | - | - | - | - |
| 22-PT-EE-50-07 | Võru | - | PttEE-A4 | TTA | - | - | - | - |
| 21-PT-EE-04-02 | Ida-Viru | - | 21PttEE-15 | CTC | - | - | - | - |
| 21-PT-EE-04-05 | Ida-Viru | - | PttEE-A3 | CTC | - | - | - | - |
| 21-PT-EE-04-06 | Ida-Viru | - | PttEE-A3 | CTC | - | - | - | - |
| 21-PT-EE-04-07 | Ida-Viru | - | PttEE-A3 | CTC | - | - | - | - |
| 21-PT-EE-05-03 | Ida-Viru | - | PttEE-A3 | CTC | - | - | - | - |
| 21-PT-EE-05-04 | Ida-Viru | - | PttEE-A3 | CTC | - | - | - | - |
| 21-PT-EE-05-05 | Ida-Viru | - | PttEE-A3 | CTC | - | - | - | - |
| 21-PT-EE-05-06 | Ida-Viru | - | PttEE-A3 | CTC | - | - | - | - |
| 21-PT-EE-05-07 | Ida-Viru | - | PttEE-A3 | CTC | - | - | - | - |
| 21-PT-EE-18-01 | Ida-Viru | - | PttEE-A3 | CTC | - | - | - | - |
| 21-PT-EE-18-03 | Ida-Viru | - | PttEE-A3 | CTC | - | - | - | - |
| 21-PT-EE-18-04 | Ida-Viru | - | 21PttEE-15 | CTC | - | - | - | - |
| 21-PT-EE-18-05 | Ida-Viru | - | PttEE-A3 | CTC | - | - | - | - |
| 21-PT-EE-03-01 | Jõgeva | - | PttEE-A3 | CTC | - | - | - | - |
| 21-PT-EE-03-02 | Jõgeva | - | PttEE-A3 | CTC | - | - | - | - |
| 21-PT-EE-03-03 | Jõgeva | - | PttEE-A3 | CTC | - | - | - | - |
| 21-PT-EE-03-06 | Jõgeva | - | PttEE-A3 | CTC | - | - | - | - |

| | | | | | | | | |
|----------------|------------|---|------------|-----|---------|---|-------|---|
| 21-PT-EE-06-01 | Lääne-Viru | - | PttEE-A3 | CTC | - | - | - | - |
| 21-PT-EE-06-04 | Lääne-Viru | - | PttEE-A3 | CTC | - | - | - | - |
| 21-PT-EE-06-06 | Lääne-Viru | - | PttEE-A3 | CTC | - | - | - | - |
| 21-PT-EE-11-01 | Saare | - | PttEE-A3 | CTC | - | - | - | - |
| 21-PT-EE-11-02 | Saare | - | PttEE-A3 | CTC | - | - | - | - |
| 21-PT-EE-11-03 | Saare | - | PttEE-A3 | CTC | - | - | - | - |
| 21-PT-EE-11-04 | Saare | - | PttEE-A3 | CTC | - | - | - | - |
| 21-PT-EE-07-01 | Tartu | - | PttEE-A3 | CTC | C-S135R | - | F129L | - |
| 21-PT-EE-07-02 | Tartu | - | PttEE-A3 | CTC | C-S135R | - | F129L | - |
| 21-PT-EE-07-03 | Tartu | - | PttEE-A3 | CTC | C-S135R | - | F129L | - |
| 21-PT-EE-07-04 | Tartu | - | PttEE-A3 | CTC | C-S135R | - | F129L | - |
| 21-PT-EE-07-05 | Tartu | - | PttEE-A3 | CTC | C-S135R | - | F129L | - |
| 21-PT-EE-07-06 | Tartu | - | PttEE-A3 | CTC | C-S135R | - | F129L | - |
| 21-PT-EE-07-07 | Tartu | - | PttEE-A3 | CTC | C-S135R | - | F129L | - |
| 21-PT-EE-07-08 | Tartu | - | PttEE-A3 | CTC | C-S135R | - | F129L | - |
| 21-PT-EE-08-01 | Tartu | - | PttEE-A3 | CTC | - | - | - | - |
| 21-PT-EE-08-02 | Tartu | - | PttEE-A3 | CTC | - | - | - | - |
| 21-PT-EE-08-03 | Tartu | - | PttEE-A3 | CTC | - | - | - | - |
| 21-PT-EE-08-04 | Tartu | - | PttEE-A3 | CTC | - | - | - | - |
| 21-PT-EE-09-02 | Tartu | - | PttEE-A3 | CTC | - | - | - | - |
| 21-PT-EE-09-03 | Tartu | - | PttEE-A3 | CTC | - | - | - | - |
| 21-PT-EE-09-04 | Tartu | - | PttEE-A3 | CTC | - | - | - | - |
| 21-PT-EE-15-01 | Võru | - | PttEE-A3 | CTC | C-S135R | - | F129L | - |
| 21-PT-EE-15-02 | Võru | - | PttEE-A3 | CTC | C-S135R | - | F129L | - |
| 21-PT-EE-15-03 | Võru | - | 21PttEE-15 | CTC | C-S135R | - | F129L | - |
| 21-PT-EE-15-04 | Võru | - | PttEE-A3 | CTC | C-S135R | - | F129L | - |
| 21-PT-EE-15-05 | Võru | - | PttEE-A3 | CTC | C-S135R | - | F129L | - |
| 21-PT-EE-15-06 | Võru | - | PttEE-A3 | CTC | C-S135R | - | F129L | - |
| 21-PT-EE-15-07 | Võru | - | PttEE-A3 | CTC | C-S135R | - | F129L | - |
| 21-PT-EE-15-08 | Võru | - | PttEE-A3 | CTC | C-S135R | - | F129L | - |

| | | | | | | | | |
|----------------|------|---|----------|-----|---|---|---|---|
| 21-PT-EE-16-01 | Võru | - | PttEE-A3 | CTC | - | - | - | - |
| 21-PT-EE-16-02 | Võru | - | PttEE-A3 | CTC | - | - | - | - |
| 21-PT-EE-16-05 | Võru | - | PttEE-A3 | CTC | - | - | - | - |
| 21-PT-EE-16-06 | Võru | - | PttEE-A3 | CTC | - | - | - | - |
| 21-PT-EE-16-08 | Võru | - | PttEE-A3 | CTC | - | - | - | - |
| 21-PT-EE-16-10 | Võru | - | PttEE-A3 | CTC | - | - | - | - |

^a Isolate number starting with 21 or 22 indicates collection year 2011 or 2022, respectively.

^b types of CYP51A haplotype according to this study, Table 2.