Table S3. Summary of the 102 P450 genes identified in the transcriptome and genome of *S. frugiperda*.

|  |  |  |  |
| --- | --- | --- | --- |
| Clade | Gene ID | Amino acid length | Name |
| CYP2 | XM\_035580634.1 | 537 | CYP18A1 |
|  | XM\_035581032.1 | 518 | CYP18B1 |
|  | XM\_035603181.1 | 500 | CYP303A1 |
|  | XM\_035582832.1 | 511 | CYP304F1v1 |
|  | XM\_035579997.1 | 489 | CYP305B1 |
|  | XM\_035580218.1 | 543 | CYP306A1 |
|  | XM\_035601745.1 | 539 | CYP307A2 |
| CYP3 | XM\_035591115.1 | 503 | CYP6B39 |
|  | XM\_035591113.1 | 504 | CYP6B40 |
|  | XM\_035591112.1 | 505 | CYP6B41 |
|  | XM\_035591745.1 | 501 | CYP6B50 |
|  | XM\_035599451.1 | 514 | CYP6AB12v1 |
|  | XM\_035599646.1 | 514 | CYP6AB58v1 |
|  | XM\_035599459.1 | 514 | CYP6AB58v2 |
|  | XM\_035591457.1 | 518 | CYP6AB59 |
|  | XM\_035591604.1 | 514 | CYP6AB60 |
|  | XM\_035588773.1 | 511 | CYP6AB61 |
|  | XM\_035592008.1 | 525 | CYP6AE43v2 |
|  | XM\_035590919.1 | 519 | CYP6AE47 |
|  | XM\_035587190.1 | 524 | CYP6AE68 |
|  | XM\_035590920.1 | 519 | CYP6AE69 |
|  | XM\_035590918.1 | 519 | CYP6AE70 |
|  | XM\_035590916.1 | 521 | CYP6AE74 |
|  | XM\_035592007.1 | 525 | CYP6AE75 |
|  | XM\_035572916.1 | 517 | CYP6AN4v1 |
|  | XM\_035580299.1 | 495 | CYP6AW1 |
|  | XM\_035593772.1 | 517 | CYP6CT1 |
|  | XM\_035576401.1 | 530 | CYP9A32 |
|  | XM\_035576396.1 | 530 | CYP9A32v2 |
|  | XM\_035574297.1 | 531 | CYP9A75 |
|  | XM\_035577212.1 | 492 | CYP9G17 |
|  | XM\_035577423.1 | 513 | CYP9AJ1 |
|  | XM\_035583086.1 | 497 | CYP321A10v2 |
|  | XM\_035602069.1 | 499 | CYP321A15v2 |
|  | XM\_035583171.1 | 495 | CYP321A7v2 |
|  | XM\_035583148.1 | 496 | CYP321A8v2 |
|  | XM\_035583004.1 | 497 | CYP321A9v2 |
|  | XM\_035574654.1 | 495 | CYP321B1v1 |
|  | XM\_035574170.1 | 495 | CYP321B3v2 |
|  | XM\_035574858.1 | 496 | CYP321B4v1 |
|  | XM\_035591748.1 | 505 | CYP324A16 |
|  | XM\_035574742.1 | 503 | CYP332A1v2 |
|  | XM\_035574383.1 | 492 | CYP337B5 |
|  | XM\_035584152.1 | 518 | CYP354A14v1 |
|  | XM\_035591480.1 | 564 | CYP365A1v1 |
|  | XM\_035591899.1 | 564 | CYP365A1v2 |
|  | XM\_035582100.1 | 516 | CYP3097A1 |
| CYP4 | XM\_035575278.1 | 571 | CYP4G108 |
|  | XM\_035575455.1 | 566 | CYP4G109 |
|  | XM\_035575475.1 | 563 | CYP4G74 |
|  | XM\_035575287.1 | 557 | CYP4G75 |
|  | XM\_035575350.1 | 492 | CYP4L12 |
|  | XM\_035575862.1 | 408 | CYP4L13 |
|  | XM\_035575349.1 | 493 | CYP4L9v1 |
|  | XM\_035591245.1 | 495 | CYP4S8 |
|  | XM\_035591247.1 | 490 | CYP4S9 |
|  | XM\_035588610.1 | 485 | CYP4AU1v1 |
|  | XM\_035602607.1 | 485 | CYP4AU1v2 |
|  | XM\_035587825.1 | 494 | CYP4AU2v1 |
|  | XM\_035586429.1 | 490 | CYP340AA1v1 |
|  | XM\_035586428.1 | 490 | CYP340AA1v2 |
|  | XM\_035586645.1 | 511 | CYP340AA3v2 |
|  | XM\_035585845.1 | 487 | CYP340AA4 |
|  | XM\_035585853.1 | 490 | CYP340AB1v1 |
|  | XM\_035586526.1 | 485 | CYP340AQ1v2 |
|  | XM\_035585840.1 | 492 | CYP340AX8v2 |
|  | XM\_035586531.1 | 490 | CYP340G2 |
|  | XM\_035586054.1 | 349 | CYP340L16 |
|  | XM\_035586639.1 | 395 | CYP340L19v1 |
|  | XM\_035586200.1 | 490 | CYP340L1v2 |
|  | XM\_035586052.1 | 487 | CYP340L20 |
|  | XM\_035585837.1 | 470 | CYP340L49 |
|  | XM\_035586384.1 | 486 | CYP340L4 |
|  | XM\_035586383.1 | 439 | CYP340L41 |
|  | XM\_035585835.1 | 500 | CYP340L44 |
|  | XM\_035585836.1 | 494 | CYP340L48 |
|  | XM\_035585838.1 | 482 | CYP340L39  |
|  | XM\_035586641.1 | 494 | CYP340L50 |
|  | XM\_035586381.1 | 494 | CYP340L51 |
|  | XM\_035586050.1 | 487 | CYP340L7v1 |
|  | XM\_035585844.1 | 490 | CYP340L8v2 |
|  | XM\_035586606.1 | 440 | CYP340Q4 |
|  | XM\_035603427.1 | 511 | CYP341A13 |
|  | XM\_035573086.1 | 508 | CYP341B15v2 |
|  | XM\_035603325.1 | 504 | CYP341B16v1 |
|  | XM\_035586049.1 | 501 | CYP341B17v2 |
|  | XM\_035603475.1 | 505 | CYP341B21v1 |
|  | XM\_035603508.1 | 501 | CYP341B22v1 |
|  | XM\_035573087.1 | 505 | CYP341B49v1 |
|  | XM\_035603376.1 | 508 | CYP341B49v2 |
|  | XM\_035603372.1 | 505 | CYP341B49v3 |
|  | XM\_035593063.1 | 495 | CYP367A1v1 |
|  | XM\_035602399.1 | 500 | CYP367B1v2 |
|  | XM\_035586476.1 | 487 | CYP421B1v1 |
| Mito | XM\_035578786.1 | 505 | CYP49A1v1 |
|  | XM\_035579718.1 | 505 | CYP49A1v2 |
|  | XM\_035587258.1 | 529 | CYP301A1 |
|  | XM\_035584036.1 | 485 | CYP315A1 |
|  | XM\_035575772.1 | 501 | CYP333B3v2 |
|  | XM\_035575771.1 | 508 | CYP333B4v1 |
|  | XM\_035582263.1 | 579 | CYP339A1 |
|  | XM\_035584029.1 | 540 | CYP428A1v2 |