

**Supplementary Tables A to T**

| Strain   | #DEGs ( $q < 0.01$ , $lfc > 2$ ) | #DEGs ( $p < 0.05$ , $lfc > \log(2)$ ) |
|----------|----------------------------------|----------------------------------------|
| ICMP3125 | 7                                | 107                                    |
| PXO142   | 2                                | 43                                     |
| PXO83    | 2                                | 49                                     |

**Table A.** Number of differentially expressed genes (DEGs) using the specified thresholds on p/q-values and log fold changes (lfc), respectively, considering RNA-seq data for three *Xoo* strains compared with mock inoculation.

| Strain   | #DEGs |
|----------|-------|
| B8-12    | 628   |
| BLS256   | 652   |
| BLS279   | 567   |
| BXOR1    | 443   |
| CFBP2286 | 202   |
| CFBP7331 | 368   |
| CFBP7341 | 328   |
| CFBP7342 | 494   |
| L8       | 672   |
| RS105    | 335   |

**Table B.** Number of differentially expressed genes (DEGs) using a threshold of 0.01 on the FDR-corrected q-values and a threshold of 2 on the log fold change considering RNA-seq data for ten *Xoc* strains compared with mock inoculation.

| strain    | # predictions | Target.Finder | TALgetter | Talvez  | PrediTALE |
|-----------|---------------|---------------|-----------|---------|-----------|
| ICMP3125  | 1             | 1 (4)         | 3 (2)     | 2 (3)   | 4 (1)     |
| PXO142    | 1             | 3 (1)         | 3 (1)     | 1 (4)   | 2 (3)     |
| PXO83     | 1             | 3 (1)         | 3 (1)     | 1 (4)   | 3 (1)     |
| avg. rank | 1             | 2.00          | 1.33      | 3.67    | 1.67      |
| ICMP3125  | 10            | 6 (2)         | 5 (3)     | 5 (3)   | 7 (1)     |
| PXO142    | 10            | 4 (3)         | 5 (2)     | 4 (3)   | 7 (1)     |
| PXO83     | 10            | 3 (4)         | 4 (2)     | 4 (2)   | 5 (1)     |
| avg. rank | 10            | 3.00          | 2.33      | 2.67    | 1.00      |
| ICMP3125  | 20            | 6 (4)         | 8 (2)     | 8 (2)   | 10 (1)    |
| PXO142    | 20            | 5 (2)         | 5 (2)     | 5 (2)   | 8 (1)     |
| PXO83     | 20            | 3 (4)         | 4 (2)     | 4 (2)   | 7 (1)     |
| avg. rank | 20            | 3.33          | 2.00      | 2.00    | 1.00      |
| ICMP3125  | 50            | 10 (4)        | 12 (2)    | 11 (3)  | 14 (1)    |
| PXO142    | 50            | 5 (3)         | 6 (2)     | 5 (3)   | 9 (1)     |
| PXO83     | 50            | 5 (3)         | 6 (2)     | 5 (3)   | 7 (1)     |
| avg. rank | 50            | 3.33          | 2.00      | 3.00    | 1.00      |
| ICMP3125  | Genes AUC     | 355 (4)       | 393 (2)   | 361 (3) | 501 (1)   |
| PXO142    | Genes AUC     | 232 (3)       | 247 (2)   | 232 (3) | 391 (1)   |
| PXO83     | Genes AUC     | 199 (3)       | 214 (2)   | 199 (3) | 320 (1)   |
| avg. rank | Genes AUC     | 3.33          | 2.00      | 3.00    | 1.00      |

**Table C.** Performance evaluation on the level of target genes for three *Xoo* strains. For each strain and each approach, we list the number of predicted target genes that are also up-regulated in the infection for different thresholds on the number of predictions per TALE, i.e., prediction cutoffs. For each threshold, we additionally report the average rank of each tool.

| strain    | # predictions | Target.Finder | TALgetter | Talvez  | PrediTALE |
|-----------|---------------|---------------|-----------|---------|-----------|
| ICMP3125  | 1             | 1 (4)         | 3 (2)     | 2 (3)   | 4 (1)     |
| PXO142    | 1             | 3 (1)         | 3 (1)     | 1 (4)   | 2 (3)     |
| PXO83     | 1             | 3 (1)         | 3 (1)     | 1 (4)   | 3 (1)     |
| avg. rank | 1             | 2.00          | 1.33      | 3.67    | 1.67      |
| ICMP3125  | 10            | 6 (1)         | 5 (3)     | 5 (3)   | 6 (1)     |
| PXO142    | 10            | 4 (3)         | 5 (1)     | 4 (3)   | 5 (1)     |
| PXO83     | 10            | 3 (4)         | 4 (2)     | 4 (2)   | 5 (1)     |
| avg. rank | 10            | 2.67          | 2.00      | 2.67    | 1.00      |
| ICMP3125  | 20            | 6 (4)         | 7 (2)     | 7 (2)   | 9 (1)     |
| PXO142    | 20            | 5 (2)         | 5 (2)     | 5 (2)   | 6 (1)     |
| PXO83     | 20            | 3 (4)         | 4 (2)     | 4 (2)   | 7 (1)     |
| avg. rank | 20            | 3.33          | 2.00      | 2.00    | 1.00      |
| ICMP3125  | 50            | 8 (3)         | 10 (1)    | 8 (3)   | 10 (1)    |
| PXO142    | 50            | 5 (3)         | 6 (2)     | 5 (3)   | 7 (1)     |
| PXO83     | 50            | 4 (3)         | 6 (2)     | 4 (3)   | 7 (1)     |
| avg. rank | 50            | 3.00          | 1.67      | 3.00    | 1.00      |
| ICMP3125  | TALEs AUC     | 328 (3)       | 355 (2)   | 321 (4) | 418 (1)   |
| PXO142    | TALEs AUC     | 232 (3)       | 247 (2)   | 232 (3) | 301 (1)   |
| PXO83     | TALEs AUC     | 179 (4)       | 214 (2)   | 197 (3) | 320 (1)   |
| avg. rank | TALEs AUC     | 3.33          | 2.00      | 3.33    | 1.00      |

**Table D.** Performance evaluation on the level of TALEs for three *Xoo* strains. For each strain and each approach, we list the number of TALEs with at least one predicted target gene that is also up-regulated in the infection for different thresholds on the number of predictions per TALE, i.e., prediction cutoffs. For each threshold, we additionally report the average rank of each tool.

| strain    | # predictions | Target.Finder | TALgetter | Talvez  | PrediTALE |
|-----------|---------------|---------------|-----------|---------|-----------|
| ICMP3125  | 1             | 1 (1)         | 1 (1)     | 1 (1)   | 1 (1)     |
| PXO142    | 1             | 1 (1)         | 0 (2)     | 0 (2)   | 0 (2)     |
| PXO83     | 1             | 1 (1)         | 1 (1)     | 0 (3)   | 0 (3)     |
| avg. rank | 1             | 1.00          | 1.33      | 2.00    | 2.00      |
| ICMP3125  | 10            | 3 (1)         | 2 (4)     | 3 (1)   | 3 (1)     |
| PXO142    | 10            | 1 (2)         | 1 (2)     | 1 (2)   | 2 (1)     |
| PXO83     | 10            | 1 (1)         | 1 (1)     | 1 (1)   | 1 (1)     |
| avg. rank | 10            | 1.33          | 2.33      | 1.33    | 1.00      |
| ICMP3125  | 20            | 3 (2)         | 3 (2)     | 3 (2)   | 4 (1)     |
| PXO142    | 20            | 1 (2)         | 1 (2)     | 1 (2)   | 2 (1)     |
| PXO83     | 20            | 1 (1)         | 1 (1)     | 1 (1)   | 1 (1)     |
| avg. rank | 20            | 1.67          | 1.67      | 1.67    | 1.00      |
| ICMP3125  | 50            | 5 (1)         | 3 (4)     | 4 (2)   | 4 (2)     |
| PXO142    | 50            | 1 (2)         | 1 (2)     | 1 (2)   | 2 (1)     |
| PXO83     | 50            | 1 (1)         | 1 (1)     | 1 (1)   | 1 (1)     |
| avg. rank | 50            | 1.33          | 2.33      | 1.67    | 1.33      |
| ICMP3125  | Genes AUC     | 191 (1)       | 132 (4)   | 142 (3) | 181 (2)   |
| PXO142    | Genes AUC     | 50 (2)        | 46 (4)    | 49 (3)  | 91 (1)    |
| PXO83     | Genes AUC     | 50 (1)        | 50 (1)    | 49 (3)  | 46 (4)    |
| avg. rank | Genes AUC     | 1.33          | 3.00      | 3.00    | 2.33      |

**Table E.** Performance evaluation on the level of target genes for three *Xoo* strains. For each strain and each approach, we list the number of predicted target genes that are also up-regulated in the infection (q-value < 0.01, log fold change > 2) for different thresholds on the number of predictions per TALE, i.e., prediction cutoffs. For each threshold, we additionally report the average rank of each tool.

| strain    | # predictions | Target.Finder | TALgetter | Talvez  | PrediTALE |
|-----------|---------------|---------------|-----------|---------|-----------|
| ICMP3125  | 1             | 1 (1)         | 1 (1)     | 1 (1)   | 1 (1)     |
| PXO142    | 1             | 1 (1)         | 0 (2)     | 0 (2)   | 0 (2)     |
| PXO83     | 1             | 1 (1)         | 1 (1)     | 0 (3)   | 0 (3)     |
| avg. rank | 1             | 1.00          | 1.33      | 2.00    | 2.00      |
| ICMP3125  | 10            | 3 (1)         | 2 (4)     | 3 (1)   | 3 (1)     |
| PXO142    | 10            | 1 (1)         | 1 (1)     | 1 (1)   | 1 (1)     |
| PXO83     | 10            | 1 (1)         | 1 (1)     | 1 (1)   | 1 (1)     |
| avg. rank | 10            | 1.00          | 2.00      | 1.00    | 1.00      |
| ICMP3125  | 20            | 3 (2)         | 3 (2)     | 3 (2)   | 4 (1)     |
| PXO142    | 20            | 1 (1)         | 1 (1)     | 1 (1)   | 1 (1)     |
| PXO83     | 20            | 1 (1)         | 1 (1)     | 1 (1)   | 1 (1)     |
| avg. rank | 20            | 1.33          | 1.33      | 1.33    | 1.00      |
| ICMP3125  | 50            | 4 (1)         | 3 (3)     | 3 (3)   | 4 (1)     |
| PXO142    | 50            | 1 (1)         | 1 (1)     | 1 (1)   | 1 (1)     |
| PXO83     | 50            | 1 (1)         | 1 (1)     | 1 (1)   | 1 (1)     |
| avg. rank | 50            | 1.00          | 1.67      | 1.67    | 1.00      |
| ICMP3125  | TALEs AUC     | 171 (2)       | 132 (4)   | 140 (3) | 181 (1)   |
| PXO142    | TALEs AUC     | 50 (1)        | 46 (4)    | 49 (2)  | 48 (3)    |
| PXO83     | TALEs AUC     | 50 (1)        | 50 (1)    | 49 (3)  | 46 (4)    |
| avg. rank | TALEs AUC     | 1.33          | 3.00      | 2.67    | 2.67      |

**Table F.** Performance evaluation on the level of TALEs for three *Xoo* strains. For each strain and each approach, we list the number of TALEs with at least one predicted target gene that is also up-regulated in the infection (q-value < 0.01, log fold change > 2) for different thresholds on the number of predictions per TALE, i.e., prediction cutoffs. For each threshold, we additionally report the average rank of each tool.

| strain    | # predictions | Target.Finder | TALgetter | Talvez  | PrediTALE |
|-----------|---------------|---------------|-----------|---------|-----------|
| ICMP3125  | 1             | 1 (4)         | 3 (2)     | 3 (2)   | 4 (1)     |
| PXO142    | 1             | 3 (1)         | 3 (1)     | 1 (4)   | 2 (3)     |
| PXO83     | 1             | 3 (1)         | 3 (1)     | 2 (4)   | 3 (1)     |
| avg. rank | 1             | 2.00          | 1.33      | 3.33    | 1.67      |
| ICMP3125  | 10            | 6 (3)         | 6 (3)     | 8 (2)   | 9 (1)     |
| PXO142    | 10            | 5 (2)         | 5 (2)     | 5 (2)   | 8 (1)     |
| PXO83     | 10            | 3 (4)         | 4 (2)     | 4 (2)   | 7 (1)     |
| avg. rank | 10            | 3.00          | 2.33      | 2.00    | 1.00      |
| ICMP3125  | 20            | 8 (2)         | 8 (2)     | 8 (2)   | 11 (1)    |
| PXO142    | 20            | 5 (2)         | 5 (2)     | 5 (2)   | 8 (1)     |
| PXO83     | 20            | 5 (2)         | 5 (2)     | 4 (4)   | 7 (1)     |
| avg. rank | 20            | 2.00          | 2.00      | 2.67    | 1.00      |
| ICMP3125  | 50            | 10 (3)        | 15 (1)    | 10 (3)  | 14 (2)    |
| PXO142    | 50            | 5 (3)         | 6 (2)     | 5 (3)   | 9 (1)     |
| PXO83     | 50            | 6 (3)         | 10 (1)    | 6 (3)   | 7 (2)     |
| avg. rank | 50            | 3.00          | 1.33      | 3.00    | 1.67      |
| ICMP3125  | Genes AUC     | 387 (4)       | 490 (2)   | 412 (3) | 563 (1)   |
| PXO142    | Genes AUC     | 242 (3)       | 266 (2)   | 240 (4) | 402 (1)   |
| PXO83     | Genes AUC     | 226 (4)       | 302 (2)   | 241 (3) | 328 (1)   |
| avg. rank | Genes AUC     | 3.67          | 2.00      | 3.33    | 1.00      |

**Table G.** Performance evaluation on the level of target genes for three *Xoo* strains when filtering for predictions of TALE boxes on the same strand as the downstream gene. For each strain and each approach, we list the number of predicted target genes that are also up-regulated in the infection for different thresholds on the number of predictions per TALE, i.e., prediction cutoffs. For each threshold, we additionally report the average rank of each tool.

| strain    | # predictions | Target.Finder | TALgetter | Talvez  | PrediTALE |
|-----------|---------------|---------------|-----------|---------|-----------|
| ICMP3125  | 1             | 1 (4)         | 3 (2)     | 3 (2)   | 4 (1)     |
| PXO142    | 1             | 3 (1)         | 3 (1)     | 1 (4)   | 2 (3)     |
| PXO83     | 1             | 3 (1)         | 3 (1)     | 2 (4)   | 3 (1)     |
| avg. rank | 1             | 2.00          | 1.33      | 3.33    | 1.67      |
| ICMP3125  | 10            | 6 (3)         | 6 (3)     | 7 (2)   | 8 (1)     |
| PXO142    | 10            | 5 (2)         | 5 (2)     | 5 (2)   | 6 (1)     |
| PXO83     | 10            | 3 (4)         | 4 (2)     | 4 (2)   | 7 (1)     |
| avg. rank | 10            | 3.00          | 2.33      | 2.00    | 1.00      |
| ICMP3125  | 20            | 7 (2)         | 7 (2)     | 7 (2)   | 9 (1)     |
| PXO142    | 20            | 5 (2)         | 5 (2)     | 5 (2)   | 6 (1)     |
| PXO83     | 20            | 4 (3)         | 5 (2)     | 4 (3)   | 7 (1)     |
| avg. rank | 20            | 2.33          | 2.00      | 2.33    | 1.00      |
| ICMP3125  | 50            | 7 (3)         | 10 (1)    | 7 (3)   | 10 (1)    |
| PXO142    | 50            | 5 (3)         | 6 (2)     | 5 (3)   | 7 (1)     |
| PXO83     | 50            | 5 (3)         | 8 (1)     | 5 (3)   | 7 (2)     |
| avg. rank | 50            | 3.00          | 1.33      | 3.00    | 1.33      |
| ICMP3125  | TALEs AUC     | 325 (3)       | 389 (2)   | 323 (4) | 440 (1)   |
| PXO142    | TALEs AUC     | 242 (3)       | 266 (2)   | 240 (4) | 312 (1)   |
| PXO83     | TALEs AUC     | 190 (4)       | 271 (2)   | 217 (3) | 328 (1)   |
| avg. rank | TALEs AUC     | 3.33          | 2.00      | 3.67    | 1.00      |

**Table H.** Performance evaluation on the level of TALEs for three *Xoo* strains when filtering for predictions of TALE boxes on the same strand as the downstream gene. For each strain and each approach, we list the number of TALEs with at least one predicted target gene that is also up-regulated in the infection for different thresholds on the number of predictions per TALE, i.e., prediction cutoffs. For each threshold, we additionally report the average rank of each tool.

| strain    | # predictions | Target.Finder | TALgetter | Talvez   | PrediTALE |
|-----------|---------------|---------------|-----------|----------|-----------|
| B8-12     | 1             | 6 (2)         | 5 (3)     | 4 (4)    | 7 (1)     |
| BLS256    | 1             | 5 (2)         | 5 (2)     | 5 (2)    | 7 (1)     |
| BLS279    | 1             | 4 (2)         | 3 (4)     | 4 (2)    | 5 (1)     |
| BXOR1     | 1             | 4 (2)         | 2 (4)     | 5 (1)    | 3 (3)     |
| CFBP2286  | 1             | 4 (2)         | 4 (2)     | 4 (2)    | 5 (1)     |
| CFBP7331  | 1             | 4 (1)         | 2 (4)     | 3 (2)    | 3 (2)     |
| CFBP7341  | 1             | 4 (1)         | 2 (3)     | 3 (2)    | 2 (3)     |
| CFBP7342  | 1             | 5 (2)         | 2 (4)     | 4 (3)    | 6 (1)     |
| L8        | 1             | 9 (2)         | 8 (3)     | 6 (4)    | 12 (1)    |
| RS105     | 1             | 3 (2)         | 3 (2)     | 3 (2)    | 4 (1)     |
| avg. rank | 1             | 1.8           | 3.1       | 2.4      | 1.5       |
| B8-12     | 10            | 16 (4)        | 19 (2)    | 22 (1)   | 18 (3)    |
| BLS256    | 10            | 15 (4)        | 16 (3)    | 24 (1)   | 20 (2)    |
| BLS279    | 10            | 12 (4)        | 15 (3)    | 17 (1)   | 17 (1)    |
| BXOR1     | 10            | 17 (3)        | 15 (4)    | 19 (1)   | 18 (2)    |
| CFBP2286  | 10            | 11 (3)        | 11 (3)    | 13 (1)   | 12 (2)    |
| CFBP7331  | 10            | 10 (4)        | 12 (3)    | 14 (2)   | 15 (1)    |
| CFBP7341  | 10            | 10 (4)        | 11 (2)    | 11 (2)   | 14 (1)    |
| CFBP7342  | 10            | 11 (2)        | 11 (2)    | 10 (4)   | 13 (1)    |
| L8        | 10            | 18 (4)        | 24 (2)    | 24 (2)   | 28 (1)    |
| RS105     | 10            | 12 (4)        | 14 (1)    | 14 (1)   | 14 (1)    |
| avg. rank | 10            | 3.6           | 2.5       | 1.6      | 1.5       |
| B8-12     | 20            | 23 (4)        | 27 (2)    | 25 (3)   | 29 (1)    |
| BLS256    | 20            | 22 (4)        | 26 (2)    | 26 (2)   | 28 (1)    |
| BLS279    | 20            | 19 (4)        | 22 (2)    | 21 (3)   | 27 (1)    |
| BXOR1     | 20            | 18 (4)        | 20 (3)    | 23 (2)   | 26 (1)    |
| CFBP2286  | 20            | 13 (4)        | 17 (2)    | 14 (3)   | 18 (1)    |
| CFBP7331  | 20            | 15 (3)        | 15 (3)    | 16 (2)   | 19 (1)    |
| CFBP7341  | 20            | 14 (2)        | 13 (3)    | 12 (4)   | 16 (1)    |
| CFBP7342  | 20            | 16 (1)        | 16 (1)    | 13 (4)   | 14 (3)    |
| L8        | 20            | 29 (4)        | 35 (2)    | 30 (3)   | 39 (1)    |
| RS105     | 20            | 17 (3)        | 21 (1)    | 17 (3)   | 20 (2)    |
| avg. rank | 20            | 3.3           | 2.1       | 2.9      | 1.3       |
| B8-12     | 50            | 45 (1)        | 41 (3)    | 40 (4)   | 45 (1)    |
| BLS256    | 50            | 41 (3)        | 40 (4)    | 43 (2)   | 52 (1)    |
| BLS279    | 50            | 36 (2)        | 33 (3)    | 33 (3)   | 47 (1)    |
| BXOR1     | 50            | 33 (2)        | 31 (4)    | 33 (2)   | 36 (1)    |
| CFBP2286  | 50            | 19 (4)        | 20 (3)    | 23 (2)   | 25 (1)    |
| CFBP7331  | 50            | 24 (2)        | 24 (2)    | 21 (4)   | 26 (1)    |
| CFBP7341  | 50            | 22 (2)        | 22 (2)    | 18 (4)   | 23 (1)    |
| CFBP7342  | 50            | 26 (2)        | 25 (3)    | 24 (4)   | 27 (1)    |
| L8        | 50            | 51 (3)        | 53 (2)    | 48 (4)   | 59 (1)    |
| RS105     | 50            | 29 (2)        | 26 (4)    | 30 (1)   | 29 (2)    |
| avg. rank | 50            | 2.3           | 3.0       | 3.0      | 1.1       |
| B8-12     | Genes AUC     | 1331 (3)      | 1411 (2)  | 1297 (4) | 1563 (1)  |
| BLS256    | Genes AUC     | 1210 (4)      | 1345 (3)  | 1446 (2) | 1587 (1)  |
| BLS279    | Genes AUC     | 1018 (4)      | 1127 (2)  | 1102 (3) | 1529 (1)  |
| BXOR1     | Genes AUC     | 1129 (3)      | 1072 (4)  | 1203 (2) | 1331 (1)  |
| CFBP2286  | Genes AUC     | 655 (4)       | 759 (3)   | 809 (2)  | 913 (1)   |
| CFBP7331  | Genes AUC     | 789 (2)       | 770 (4)   | 788 (3)  | 998 (1)   |
| CFBP7341  | Genes AUC     | 762 (2)       | 699 (3)   | 643 (4)  | 877 (1)   |
| CFBP7342  | Genes AUC     | 877 (1)       | 839 (3)   | 742 (4)  | 860 (2)   |
| L8        | Genes AUC     | 1568 (4)      | 1859 (2)  | 1631 (3) | 2125 (1)  |
| RS105     | Genes AUC     | 864 (4)       | 969 (2)   | 920 (3)  | 1047 (1)  |
| avg. rank | Genes AUC     | 3.1           | 2.8       | 3.0      | 1.1       |

**Table I.** Performance evaluation on the level of target genes for ten *Xoc* strains. For each strain and each approach, we list the number of predicted target genes that are also up-regulated in the infection for different cutoffs on the number of predictions per TALE, i.e., prediction ranks. For each threshold, we additionally report the average rank of each tool.

| strain    | # predictions | Target.Finder | TALgetter | Talvez  | PrediTALE |
|-----------|---------------|---------------|-----------|---------|-----------|
| B8-12     | 1             | 6 (2)         | 5 (3)     | 4 (4)   | 7 (1)     |
| BLS256    | 1             | 5 (2)         | 5 (2)     | 5 (2)   | 7 (1)     |
| BLS279    | 1             | 4 (2)         | 3 (4)     | 4 (2)   | 5 (1)     |
| BXOR1     | 1             | 4 (2)         | 2 (4)     | 5 (1)   | 3 (3)     |
| CFBP2286  | 1             | 4 (2)         | 4 (2)     | 4 (2)   | 5 (1)     |
| CFBP7331  | 1             | 4 (1)         | 2 (4)     | 3 (2)   | 3 (2)     |
| CFBP7341  | 1             | 4 (1)         | 2 (3)     | 3 (2)   | 2 (3)     |
| CFBP7342  | 1             | 5 (2)         | 2 (4)     | 4 (3)   | 6 (1)     |
| L8        | 1             | 9 (2)         | 8 (3)     | 6 (4)   | 12 (1)    |
| RS105     | 1             | 3 (2)         | 3 (2)     | 3 (2)   | 4 (1)     |
| avg. rank | 1             | 1.8           | 3.1       | 2.4     | 1.5       |
| B8-12     | 10            | 11 (4)        | 13 (2)    | 16 (1)  | 13 (2)    |
| BLS256    | 10            | 10 (4)        | 11 (3)    | 17 (1)  | 15 (2)    |
| BLS279    | 10            | 8 (4)         | 10 (3)    | 12 (1)  | 12 (1)    |
| BXOR1     | 10            | 13 (3)        | 11 (4)    | 15 (1)  | 14 (2)    |
| CFBP2286  | 10            | 9 (4)         | 10 (2)    | 12 (1)  | 10 (2)    |
| CFBP7331  | 10            | 7 (4)         | 9 (1)     | 9 (1)   | 9 (1)     |
| CFBP7341  | 10            | 7 (3)         | 9 (1)     | 7 (3)   | 9 (1)     |
| CFBP7342  | 10            | 10 (1)        | 10 (1)    | 9 (4)   | 10 (1)    |
| L8        | 10            | 14 (4)        | 18 (2)    | 18 (2)  | 20 (1)    |
| RS105     | 10            | 8 (4)         | 10 (2)    | 11 (1)  | 10 (2)    |
| avg. rank | 10            | 3.5           | 2.1       | 1.6     | 1.5       |
| B8-12     | 20            | 15 (4)        | 19 (1)    | 17 (3)  | 19 (1)    |
| BLS256    | 20            | 15 (4)        | 18 (2)    | 17 (3)  | 19 (1)    |
| BLS279    | 20            | 12 (4)        | 15 (2)    | 14 (3)  | 19 (1)    |
| BXOR1     | 20            | 14 (3)        | 14 (3)    | 17 (2)  | 18 (1)    |
| CFBP2286  | 20            | 10 (4)        | 13 (1)    | 12 (3)  | 13 (1)    |
| CFBP7331  | 20            | 9 (4)         | 10 (2)    | 10 (2)  | 11 (1)    |
| CFBP7341  | 20            | 8 (3)         | 9 (2)     | 8 (3)   | 10 (1)    |
| CFBP7342  | 20            | 11 (1)        | 10 (3)    | 11 (1)  | 10 (3)    |
| L8        | 20            | 18 (4)        | 24 (1)    | 20 (3)  | 24 (1)    |
| RS105     | 20            | 11 (4)        | 15 (1)    | 12 (3)  | 15 (1)    |
| avg. rank | 20            | 3.5           | 1.8       | 2.6     | 1.2       |
| B8-12     | 50            | 24 (1)        | 22 (3)    | 20 (4)  | 23 (2)    |
| BLS256    | 50            | 21 (2)        | 20 (4)    | 21 (2)  | 24 (1)    |
| BLS279    | 50            | 20 (2)        | 18 (3)    | 17 (4)  | 24 (1)    |
| BXOR1     | 50            | 19 (4)        | 21 (1)    | 20 (2)  | 20 (2)    |
| CFBP2286  | 50            | 12 (4)        | 13 (3)    | 16 (1)  | 15 (2)    |
| CFBP7331  | 50            | 12 (3)        | 13 (2)    | 10 (4)  | 14 (1)    |
| CFBP7341  | 50            | 11 (3)        | 13 (2)    | 9 (4)   | 14 (1)    |
| CFBP7342  | 50            | 13 (2)        | 13 (2)    | 14 (1)  | 13 (2)    |
| L8        | 50            | 24 (3)        | 26 (2)    | 23 (4)  | 28 (1)    |
| RS105     | 50            | 17 (2)        | 16 (4)    | 17 (2)  | 18 (1)    |
| avg. rank | 50            | 2.6           | 2.6       | 2.8     | 1.4       |
| B8-12     | TALEs AUC     | 862 (3)       | 878 (2)   | 822 (4) | 923 (1)   |
| BLS256    | TALEs AUC     | 772 (4)       | 825 (3)   | 878 (2) | 965 (1)   |
| BLS279    | TALEs AUC     | 664 (4)       | 704 (2)   | 704 (2) | 937 (1)   |
| BXOR1     | TALEs AUC     | 759 (3)       | 749 (4)   | 830 (2) | 840 (1)   |
| CFBP2286  | TALEs AUC     | 507 (4)       | 575 (3)   | 612 (2) | 623 (1)   |
| CFBP7331  | TALEs AUC     | 447 (4)       | 502 (2)   | 457 (3) | 561 (1)   |
| CFBP7341  | TALEs AUC     | 427 (3)       | 498 (2)   | 386 (4) | 544 (1)   |
| CFBP7342  | TALEs AUC     | 545 (1)       | 522 (4)   | 534 (3) | 543 (2)   |
| L8        | TALEs AUC     | 960 (4)       | 1115 (2)  | 978 (3) | 1188 (1)  |
| RS105     | TALEs AUC     | 575 (4)       | 665 (2)   | 600 (3) | 717 (1)   |
| avg. rank | TALEs AUC     | 3.4           | 2.6       | 2.8     | 1.1       |

**Table J.** Performance evaluation on the level of TALEs for ten *Xoo* strains. For each strain and each approach, we list the number of TALEs with at least one predicted target gene that is also up-regulated in the infection for different cutoffs on the number of predictions per TALE, i.e., prediction ranks. For each threshold, we additionally report the average rank of each tool.

| strain    | # predictions | Target.Finder | TALgetter | Talvez   | PrediTALE |
|-----------|---------------|---------------|-----------|----------|-----------|
| B8-12     | 1             | 6 (2)         | 5 (3)     | 4 (4)    | 7 (1)     |
| BLS256    | 1             | 5 (2)         | 5 (2)     | 5 (2)    | 7 (1)     |
| BLS279    | 1             | 4 (2)         | 3 (4)     | 4 (2)    | 5 (1)     |
| BXOR1     | 1             | 4 (2)         | 2 (4)     | 5 (1)    | 3 (3)     |
| CFBP2286  | 1             | 4 (2)         | 4 (2)     | 4 (2)    | 5 (1)     |
| CFBP7331  | 1             | 4 (1)         | 2 (4)     | 3 (2)    | 3 (2)     |
| CFBP7341  | 1             | 4 (1)         | 2 (3)     | 3 (2)    | 2 (3)     |
| CFBP7342  | 1             | 5 (2)         | 2 (4)     | 4 (3)    | 6 (1)     |
| L8        | 1             | 9 (2)         | 8 (3)     | 6 (4)    | 12 (1)    |
| RS105     | 1             | 3 (2)         | 3 (2)     | 3 (2)    | 4 (1)     |
| avg. rank | 1             | 1.8           | 3.1       | 2.4      | 1.5       |
| B8-12     | 10            | 16 (4)        | 19 (2)    | 23 (1)   | 18 (3)    |
| BLS256    | 10            | 15 (4)        | 16 (3)    | 24 (1)   | 20 (2)    |
| BLS279    | 10            | 12 (4)        | 15 (3)    | 17 (1)   | 17 (1)    |
| BXOR1     | 10            | 17 (3)        | 15 (4)    | 19 (1)   | 18 (2)    |
| CFBP2286  | 10            | 11 (3)        | 11 (3)    | 13 (1)   | 12 (2)    |
| CFBP7331  | 10            | 10 (4)        | 12 (3)    | 14 (2)   | 15 (1)    |
| CFBP7341  | 10            | 10 (4)        | 11 (2)    | 11 (2)   | 14 (1)    |
| CFBP7342  | 10            | 11 (2)        | 11 (2)    | 10 (4)   | 13 (1)    |
| L8        | 10            | 18 (4)        | 24 (2)    | 24 (2)   | 28 (1)    |
| RS105     | 10            | 12 (4)        | 14 (2)    | 15 (1)   | 14 (2)    |
| avg. rank | 10            | 3.6           | 2.6       | 1.6      | 1.6       |
| B8-12     | 20            | 23 (4)        | 27 (2)    | 26 (3)   | 29 (1)    |
| BLS256    | 20            | 22 (4)        | 26 (2)    | 26 (2)   | 28 (1)    |
| BLS279    | 20            | 19 (4)        | 22 (2)    | 21 (3)   | 27 (1)    |
| BXOR1     | 20            | 18 (4)        | 20 (3)    | 23 (2)   | 27 (1)    |
| CFBP2286  | 20            | 13 (4)        | 17 (2)    | 14 (3)   | 18 (1)    |
| CFBP7331  | 20            | 15 (3)        | 15 (3)    | 16 (2)   | 19 (1)    |
| CFBP7341  | 20            | 14 (2)        | 13 (3)    | 12 (4)   | 16 (1)    |
| CFBP7342  | 20            | 17 (1)        | 16 (2)    | 13 (4)   | 14 (3)    |
| L8        | 20            | 29 (4)        | 35 (2)    | 30 (3)   | 39 (1)    |
| RS105     | 20            | 17 (4)        | 21 (1)    | 18 (3)   | 20 (2)    |
| avg. rank | 20            | 3.4           | 2.2       | 2.9      | 1.3       |
| B8-12     | 50            | 45 (1)        | 41 (3)    | 41 (3)   | 45 (1)    |
| BLS256    | 50            | 41 (3)        | 41 (3)    | 43 (2)   | 52 (1)    |
| BLS279    | 50            | 37 (2)        | 33 (4)    | 34 (3)   | 47 (1)    |
| BXOR1     | 50            | 35 (3)        | 31 (4)    | 36 (2)   | 38 (1)    |
| CFBP2286  | 50            | 20 (4)        | 21 (3)    | 23 (2)   | 26 (1)    |
| CFBP7331  | 50            | 25 (2)        | 24 (3)    | 22 (4)   | 26 (1)    |
| CFBP7341  | 50            | 22 (2)        | 22 (2)    | 18 (4)   | 23 (1)    |
| CFBP7342  | 50            | 27 (1)        | 25 (3)    | 24 (4)   | 27 (1)    |
| L8        | 50            | 52 (3)        | 53 (2)    | 49 (4)   | 59 (1)    |
| RS105     | 50            | 30 (2)        | 26 (4)    | 31 (1)   | 30 (2)    |
| avg. rank | 50            | 2.3           | 3.1       | 2.9      | 1.1       |
| B8-12     | Genes AUC     | 1331 (4)      | 1411 (2)  | 1342 (3) | 1563 (1)  |
| BLS256    | Genes AUC     | 1210 (4)      | 1346 (3)  | 1446 (2) | 1587 (1)  |
| BLS279    | Genes AUC     | 1046 (4)      | 1127 (3)  | 1130 (2) | 1529 (1)  |
| BXOR1     | Genes AUC     | 1163 (3)      | 1072 (4)  | 1242 (2) | 1395 (1)  |
| CFBP2286  | Genes AUC     | 668 (4)       | 782 (3)   | 809 (2)  | 921 (1)   |
| CFBP7331  | Genes AUC     | 803 (3)       | 770 (4)   | 817 (2)  | 998 (1)   |
| CFBP7341  | Genes AUC     | 762 (2)       | 699 (3)   | 643 (4)  | 877 (1)   |
| CFBP7342  | Genes AUC     | 911 (1)       | 839 (3)   | 742 (4)  | 860 (2)   |
| L8        | Genes AUC     | 1596 (4)      | 1859 (2)  | 1659 (3) | 2125 (1)  |
| RS105     | Genes AUC     | 892 (4)       | 969 (2)   | 965 (3)  | 1063 (1)  |
| avg. rank | Genes AUC     | 3.3           | 2.9       | 2.7      | 1.1       |

**Table K.** Performance evaluation on the level of target genes for ten *Xoc* strains. For each strain and each approach, we list the number of predicted target genes that are also up-regulated in the infection (q-value < 0.05, log fold change > 2) for different cutoffs on the number of predictions per TALE, i.e., prediction ranks. For each threshold, we additionally report the average rank of each tool.

| strain    | # predictions | Target.Finder | TALgetter | Talvez   | PrediTALE |
|-----------|---------------|---------------|-----------|----------|-----------|
| B8-12     | 1             | 6 (2)         | 5 (3)     | 4 (4)    | 7 (1)     |
| BLS256    | 1             | 5 (2)         | 5 (2)     | 5 (2)    | 7 (1)     |
| BLS279    | 1             | 4 (2)         | 3 (4)     | 4 (2)    | 5 (1)     |
| BXOR1     | 1             | 4 (2)         | 2 (4)     | 5 (1)    | 3 (3)     |
| CFBP2286  | 1             | 4 (2)         | 4 (2)     | 4 (2)    | 5 (1)     |
| CFBP7331  | 1             | 4 (1)         | 2 (4)     | 3 (2)    | 3 (2)     |
| CFBP7341  | 1             | 4 (1)         | 2 (3)     | 3 (2)    | 2 (3)     |
| CFBP7342  | 1             | 5 (2)         | 2 (4)     | 4 (3)    | 6 (1)     |
| L8        | 1             | 9 (2)         | 8 (3)     | 6 (4)    | 12 (1)    |
| RS105     | 1             | 3 (2)         | 3 (2)     | 3 (2)    | 4 (1)     |
| avg. rank | 1             | 1.8           | 3.1       | 2.4      | 1.5       |
| B8-12     | 10            | 11 (4)        | 13 (2)    | 17 (1)   | 13 (2)    |
| BLS256    | 10            | 10 (4)        | 11 (3)    | 17 (1)   | 15 (2)    |
| BLS279    | 10            | 8 (4)         | 10 (3)    | 12 (1)   | 12 (1)    |
| BXOR1     | 10            | 13 (3)        | 11 (4)    | 15 (1)   | 14 (2)    |
| CFBP2286  | 10            | 9 (4)         | 10 (2)    | 12 (1)   | 10 (2)    |
| CFBP7331  | 10            | 7 (4)         | 9 (1)     | 9 (1)    | 9 (1)     |
| CFBP7341  | 10            | 7 (3)         | 9 (1)     | 7 (3)    | 9 (1)     |
| CFBP7342  | 10            | 10 (1)        | 10 (1)    | 9 (4)    | 10 (1)    |
| L8        | 10            | 14 (4)        | 18 (2)    | 18 (2)   | 20 (1)    |
| RS105     | 10            | 8 (4)         | 10 (2)    | 12 (1)   | 10 (2)    |
| avg. rank | 10            | 3.5           | 2.1       | 1.6      | 1.5       |
| B8-12     | 20            | 15 (4)        | 19 (1)    | 18 (3)   | 19 (1)    |
| BLS256    | 20            | 15 (4)        | 18 (2)    | 17 (3)   | 19 (1)    |
| BLS279    | 20            | 12 (4)        | 15 (2)    | 14 (3)   | 19 (1)    |
| BXOR1     | 20            | 14 (3)        | 14 (3)    | 17 (2)   | 18 (1)    |
| CFBP2286  | 20            | 10 (4)        | 13 (1)    | 12 (3)   | 13 (1)    |
| CFBP7331  | 20            | 9 (4)         | 10 (2)    | 10 (2)   | 11 (1)    |
| CFBP7341  | 20            | 8 (3)         | 9 (2)     | 8 (3)    | 10 (1)    |
| CFBP7342  | 20            | 11 (1)        | 10 (3)    | 11 (1)   | 10 (3)    |
| L8        | 20            | 18 (4)        | 24 (1)    | 20 (3)   | 24 (1)    |
| RS105     | 20            | 11 (4)        | 15 (1)    | 13 (3)   | 15 (1)    |
| avg. rank | 20            | 3.5           | 1.8       | 2.6      | 1.2       |
| B8-12     | 50            | 24 (1)        | 22 (3)    | 20 (4)   | 23 (2)    |
| BLS256    | 50            | 21 (2)        | 20 (4)    | 21 (2)   | 24 (1)    |
| BLS279    | 50            | 21 (2)        | 18 (3)    | 18 (3)   | 24 (1)    |
| BXOR1     | 50            | 19 (4)        | 21 (1)    | 20 (2)   | 20 (2)    |
| CFBP2286  | 50            | 13 (4)        | 14 (3)    | 16 (1)   | 16 (1)    |
| CFBP7331  | 50            | 13 (2)        | 13 (2)    | 11 (4)   | 14 (1)    |
| CFBP7341  | 50            | 11 (3)        | 13 (2)    | 9 (4)    | 14 (1)    |
| CFBP7342  | 50            | 13 (2)        | 13 (2)    | 14 (1)   | 13 (2)    |
| L8        | 50            | 25 (3)        | 26 (2)    | 24 (4)   | 28 (1)    |
| RS105     | 50            | 18 (1)        | 16 (4)    | 17 (3)   | 18 (1)    |
| avg. rank | 50            | 2.4           | 2.6       | 2.8      | 1.3       |
| B8-12     | TALEs AUC     | 862 (4)       | 878 (2)   | 864 (3)  | 923 (1)   |
| BLS256    | TALEs AUC     | 772 (4)       | 825 (3)   | 878 (2)  | 965 (1)   |
| BLS279    | TALEs AUC     | 692 (4)       | 704 (3)   | 732 (2)  | 937 (1)   |
| BXOR1     | TALEs AUC     | 759 (3)       | 749 (4)   | 830 (2)  | 840 (1)   |
| CFBP2286  | TALEs AUC     | 520 (4)       | 598 (3)   | 612 (2)  | 631 (1)   |
| CFBP7331  | TALEs AUC     | 461 (4)       | 502 (2)   | 486 (3)  | 561 (1)   |
| CFBP7341  | TALEs AUC     | 427 (3)       | 498 (2)   | 386 (4)  | 544 (1)   |
| CFBP7342  | TALEs AUC     | 545 (1)       | 522 (4)   | 534 (3)  | 543 (2)   |
| L8        | TALEs AUC     | 988 (4)       | 1115 (2)  | 1006 (3) | 1188 (1)  |
| RS105     | TALEs AUC     | 603 (4)       | 665 (2)   | 642 (3)  | 717 (1)   |
| avg. rank | TALEs AUC     | 3.5           | 2.7       | 2.7      | 1.1       |

**Table L.** Performance evaluation on the level of TALEs for ten *Xoo* strains. For each strain and each approach, we list the number of TALEs with at least one predicted target gene that is also up-regulated in the infection (q-value < 0.05, log fold change > 2) for different cutoffs on the number of predictions per TALE, i.e., prediction ranks. For each threshold, we additionally report the average rank of each tool.

| measure   | Target Finder | TALgetter | Talvez | PrediTALE | Quade | TALgetter vs TALESF | Talvez vs Target Finder | Talvez vs TALgetter | PrediTALE vs Target Finder | PrediTALE vs TALgetter | PrediTALE vs Talvez |
|-----------|---------------|-----------|--------|-----------|-------|---------------------|-------------------------|---------------------|----------------------------|------------------------|---------------------|
| TALEs R1  | 1.8           | 3.1       | 2.4    | 1.5       | **    | —                   | -                       |                     |                            | +++                    | ++                  |
| TALEs R10 | 3.5           | 2.1       | 1.6    | 1.5       | ***   | +                   | +++                     | ++                  | +++                        |                        |                     |
| TALEs R20 | 3.5           | 1.8       | 2.6    | 1.2       | ***   | +++                 | +                       | -                   | +++                        |                        | +++                 |
| TALEs R50 | 2.4           | 2.6       | 2.8    | 1.3       | **    |                     |                         |                     | ++                         | +++                    | +++                 |
| TALEs AUC | 3.5           | 2.7       | 2.7    | 1.1       | ***   | ++                  | ++                      |                     | +++                        | +++                    | +++                 |
| Genes R1  | 1.8           | 3.1       | 2.4    | 1.5       | **    | —                   | -                       |                     |                            | +++                    | ++                  |
| Genes R10 | 3.6           | 2.6       | 1.6    | 1.6       | ***   | +                   | +++                     | +                   | +++                        | +                      |                     |
| Genes R20 | 3.4           | 2.2       | 2.9    | 1.3       | ***   | +++                 | +                       |                     | +++                        | ++                     | +++                 |
| Genes R50 | 2.3           | 3.1       | 2.9    | 1.1       | **    |                     |                         |                     | +++                        | +++                    | +++                 |
| Genes AUC | 3.3           | 2.9       | 2.7    | 1.1       | ***   |                     | +                       |                     | +++                        | +++                    | +++                 |

**Table M.** Testing the significance of differences in prediction performance (q-value  $< 0.05$ , log fold change  $> 2$ ). For each tool and each measure (TALEs/Genes; rank cutoff), we report the average rank per tool, the significance of the Quade test (\*: $< 0.05$ ; \*\*: $< 0.01$ ; \*\*\*: $< 0.001$ ), and the significance of the pairwise comparison in a post-hoc test. Here, '+' and '-' indicate that the first tool has gained a significantly better or worse performance than the second one, respectively. The number of symbols encodes the significance level in analogy to the Quade test.

| strain    | # predictions | Target.Finder | TALgetter | Talvez   | PrediTALE |
|-----------|---------------|---------------|-----------|----------|-----------|
| B8-12     | 1             | 8 (2)         | 8 (2)     | 5 (4)    | 11 (1)    |
| BLS256    | 1             | 7 (3)         | 8 (2)     | 5 (4)    | 10 (1)    |
| BLS279    | 1             | 6 (3)         | 7 (2)     | 5 (4)    | 8 (1)     |
| BXOR1     | 1             | 5 (2)         | 5 (2)     | 6 (1)    | 4 (4)     |
| CFBP2286  | 1             | 5 (3)         | 6 (2)     | 4 (4)    | 7 (1)     |
| CFBP7331  | 1             | 6 (2)         | 7 (1)     | 5 (3)    | 5 (3)     |
| CFBP7341  | 1             | 6 (1)         | 2 (3)     | 3 (2)    | 2 (3)     |
| CFBP7342  | 1             | 5 (4)         | 7 (1)     | 6 (3)    | 7 (1)     |
| L8        | 1             | 11 (2)        | 9 (3)     | 6 (4)    | 14 (1)    |
| RS105     | 1             | 5 (3)         | 7 (2)     | 4 (4)    | 9 (1)     |
| avg. rank | 1             | 2.5           | 2.0       | 3.3      | 1.7       |
| B8-12     | 10            | 22 (4)        | 26 (3)    | 33 (1)   | 30 (2)    |
| BLS256    | 10            | 18 (4)        | 26 (3)    | 29 (1)   | 28 (2)    |
| BLS279    | 10            | 18 (4)        | 27 (3)    | 28 (2)   | 31 (1)    |
| BXOR1     | 10            | 23 (4)        | 28 (1)    | 28 (1)   | 28 (1)    |
| CFBP2286  | 10            | 17 (3)        | 16 (4)    | 18 (2)   | 19 (1)    |
| CFBP7331  | 10            | 14 (4)        | 21 (3)    | 23 (2)   | 24 (1)    |
| CFBP7341  | 10            | 14 (2)        | 12 (4)    | 14 (2)   | 17 (1)    |
| CFBP7342  | 10            | 14 (4)        | 18 (2)    | 18 (2)   | 22 (1)    |
| L8        | 10            | 28 (4)        | 38 (2)    | 36 (3)   | 40 (1)    |
| RS105     | 10            | 16 (4)        | 20 (3)    | 23 (2)   | 26 (1)    |
| avg. rank | 10            | 3.7           | 2.8       | 1.8      | 1.2       |
| B8-12     | 20            | 36 (4)        | 42 (2)    | 40 (3)   | 48 (1)    |
| BLS256    | 20            | 31 (4)        | 40 (2)    | 36 (3)   | 46 (1)    |
| BLS279    | 20            | 32 (4)        | 41 (2)    | 38 (3)   | 45 (1)    |
| BXOR1     | 20            | 36 (3)        | 35 (4)    | 38 (1)   | 37 (2)    |
| CFBP2286  | 20            | 25 (3)        | 26 (2)    | 22 (4)   | 29 (1)    |
| CFBP7331  | 20            | 27 (4)        | 30 (1)    | 30 (1)   | 30 (1)    |
| CFBP7341  | 20            | 20 (2)        | 17 (3)    | 16 (4)   | 21 (1)    |
| CFBP7342  | 20            | 24 (2)        | 24 (2)    | 23 (4)   | 28 (1)    |
| L8        | 20            | 43 (4)        | 57 (2)    | 47 (3)   | 58 (1)    |
| RS105     | 20            | 28 (3)        | 31 (2)    | 28 (3)   | 35 (1)    |
| avg. rank | 20            | 3.3           | 2.2       | 2.9      | 1.1       |
| B8-12     | 50            | 75 (4)        | 78 (2)    | 78 (2)   | 84 (1)    |
| BLS256    | 50            | 72 (4)        | 78 (3)    | 79 (2)   | 96 (1)    |
| BLS279    | 50            | 67 (4)        | 71 (3)    | 72 (2)   | 85 (1)    |
| BXOR1     | 50            | 59 (3)        | 56 (4)    | 64 (1)   | 63 (2)    |
| CFBP2286  | 50            | 38 (2)        | 33 (4)    | 36 (3)   | 39 (1)    |
| CFBP7331  | 50            | 50 (2)        | 46 (3)    | 45 (4)   | 51 (1)    |
| CFBP7341  | 50            | 37 (1)        | 33 (3)    | 30 (4)   | 37 (1)    |
| CFBP7342  | 50            | 47 (3)        | 48 (2)    | 42 (4)   | 52 (1)    |
| L8        | 50            | 85 (4)        | 102 (2)   | 88 (3)   | 103 (1)   |
| RS105     | 50            | 47 (4)        | 49 (3)    | 51 (2)   | 57 (1)    |
| avg. rank | 50            | 3.1           | 2.9       | 2.7      | 1.1       |
| B8-12     | Genes AUC     | 2123 (4)      | 2382 (2)  | 2293 (3) | 2647 (1)  |
| BLS256    | Genes AUC     | 1865 (4)      | 2260 (2)  | 2211 (3) | 2675 (1)  |
| BLS279    | Genes AUC     | 1829 (4)      | 2207 (2)  | 2176 (3) | 2614 (1)  |
| BXOR1     | Genes AUC     | 1963 (3)      | 1909 (4)  | 2102 (2) | 2125 (1)  |
| CFBP2286  | Genes AUC     | 1221 (4)      | 1240 (2)  | 1235 (3) | 1453 (1)  |
| CFBP7331  | Genes AUC     | 1507 (4)      | 1537 (2)  | 1528 (3) | 1708 (1)  |
| CFBP7341  | Genes AUC     | 1194 (2)      | 977 (3)   | 928 (4)  | 1217 (1)  |
| CFBP7342  | Genes AUC     | 1385 (3)      | 1438 (2)  | 1324 (4) | 1665 (1)  |
| L8        | Genes AUC     | 2525 (4)      | 3182 (2)  | 2762 (3) | 3339 (1)  |
| RS105     | Genes AUC     | 1398 (4)      | 1637 (2)  | 1571 (3) | 1901 (1)  |
| avg. rank | Genes AUC     | 3.6           | 2.3       | 3.1      | 1.0       |

**Table N.** Performance evaluation on the level of target genes for ten *Xoc* strains. For each strain and each approach, we list the number of predicted target genes that are also up-regulated in the infection (q-value < 0.01, log fold change > 1) for different cutoffs on the number of predictions per TALE, i.e., prediction ranks. For each threshold, we additionally report the average rank of each tool.

| strain    | # predictions | Target.Finder | TALgetter | Talvez   | PrediTALE |
|-----------|---------------|---------------|-----------|----------|-----------|
| B8-12     | 1             | 8 (2)         | 8 (2)     | 5 (4)    | 11 (1)    |
| BLS256    | 1             | 7 (3)         | 8 (2)     | 5 (4)    | 10 (1)    |
| BLS279    | 1             | 6 (3)         | 7 (2)     | 5 (4)    | 8 (1)     |
| BXOR1     | 1             | 5 (2)         | 5 (2)     | 6 (1)    | 4 (4)     |
| CFBP2286  | 1             | 5 (3)         | 6 (2)     | 4 (4)    | 7 (1)     |
| CFBP7331  | 1             | 6 (2)         | 7 (1)     | 5 (3)    | 5 (3)     |
| CFBP7341  | 1             | 6 (1)         | 2 (3)     | 3 (2)    | 2 (3)     |
| CFBP7342  | 1             | 5 (4)         | 7 (1)     | 6 (3)    | 7 (1)     |
| L8        | 1             | 11 (2)        | 9 (3)     | 6 (4)    | 14 (1)    |
| RS105     | 1             | 5 (3)         | 7 (2)     | 4 (4)    | 9 (1)     |
| avg. rank | 1             | 2.5           | 2.0       | 3.3      | 1.7       |
| B8-12     | 10            | 15 (4)        | 16 (3)    | 21 (1)   | 20 (2)    |
| BLS256    | 10            | 13 (4)        | 16 (3)    | 19 (1)   | 19 (1)    |
| BLS279    | 10            | 13 (4)        | 16 (3)    | 18 (2)   | 19 (1)    |
| BXOR1     | 10            | 15 (4)        | 17 (3)    | 18 (1)   | 18 (1)    |
| CFBP2286  | 10            | 13 (3)        | 13 (3)    | 15 (1)   | 15 (1)    |
| CFBP7331  | 10            | 10 (4)        | 13 (2)    | 12 (3)   | 14 (1)    |
| CFBP7341  | 10            | 9 (2)         | 9 (2)     | 9 (2)    | 10 (1)    |
| CFBP7342  | 10            | 11 (3)        | 13 (2)    | 11 (3)   | 15 (1)    |
| L8        | 10            | 17 (4)        | 23 (1)    | 20 (3)   | 22 (2)    |
| RS105     | 10            | 12 (4)        | 13 (3)    | 17 (1)   | 17 (1)    |
| avg. rank | 10            | 3.6           | 2.5       | 1.8      | 1.2       |
| B8-12     | 20            | 20 (4)        | 25 (1)    | 23 (2)   | 23 (2)    |
| BLS256    | 20            | 18 (4)        | 22 (1)    | 20 (3)   | 22 (1)    |
| BLS279    | 20            | 18 (4)        | 23 (1)    | 20 (3)   | 22 (2)    |
| BXOR1     | 20            | 22 (1)        | 18 (4)    | 22 (1)   | 21 (3)    |
| CFBP2286  | 20            | 15 (4)        | 17 (2)    | 17 (2)   | 18 (1)    |
| CFBP7331  | 20            | 15 (2)        | 15 (2)    | 16 (1)   | 15 (2)    |
| CFBP7341  | 20            | 10 (2)        | 10 (2)    | 10 (2)   | 11 (1)    |
| CFBP7342  | 20            | 14 (2)        | 13 (3)    | 12 (4)   | 16 (1)    |
| L8        | 20            | 21 (4)        | 28 (1)    | 23 (3)   | 26 (2)    |
| RS105     | 20            | 17 (4)        | 20 (1)    | 18 (3)   | 20 (1)    |
| avg. rank | 20            | 3.1           | 1.8       | 2.4      | 1.6       |
| B8-12     | 50            | 26 (4)        | 27 (2)    | 27 (2)   | 28 (1)    |
| BLS256    | 50            | 26 (2)        | 26 (2)    | 26 (2)   | 27 (1)    |
| BLS279    | 50            | 24 (3)        | 25 (2)    | 24 (3)   | 26 (1)    |
| BXOR1     | 50            | 23 (2)        | 21 (4)    | 24 (1)   | 23 (2)    |
| CFBP2286  | 50            | 19 (3)        | 17 (4)    | 20 (2)   | 21 (1)    |
| CFBP7331  | 50            | 17 (3)        | 18 (2)    | 17 (3)   | 20 (1)    |
| CFBP7341  | 50            | 13 (3)        | 15 (2)    | 13 (3)   | 18 (1)    |
| CFBP7342  | 50            | 19 (3)        | 20 (1)    | 19 (3)   | 20 (1)    |
| L8        | 50            | 28 (3)        | 29 (1)    | 27 (4)   | 29 (1)    |
| RS105     | 50            | 19 (4)        | 21 (2)    | 21 (2)   | 23 (1)    |
| avg. rank | 50            | 3.0           | 2.2       | 2.5      | 1.1       |
| B8-12     | TALEs AUC     | 1031 (4)      | 1145 (2)  | 1118 (3) | 1152 (1)  |
| BLS256    | TALEs AUC     | 971 (4)       | 1064 (2)  | 1022 (3) | 1091 (1)  |
| BLS279    | TALEs AUC     | 954 (4)       | 1058 (2)  | 1008 (3) | 1109 (1)  |
| BXOR1     | TALEs AUC     | 973 (3)       | 909 (4)   | 1023 (1) | 1005 (2)  |
| CFBP2286  | TALEs AUC     | 735 (4)       | 766 (3)   | 819 (2)  | 899 (1)   |
| CFBP7331  | TALEs AUC     | 677 (4)       | 753 (2)   | 723 (3)  | 799 (1)   |
| CFBP7341  | TALEs AUC     | 498 (4)       | 559 (2)   | 500 (3)  | 613 (1)   |
| CFBP7342  | TALEs AUC     | 693 (3)       | 764 (2)   | 679 (4)  | 863 (1)   |
| L8        | TALEs AUC     | 1146 (4)      | 1302 (1)  | 1166 (3) | 1269 (2)  |
| RS105     | TALEs AUC     | 795 (4)       | 896 (2)   | 870 (3)  | 974 (1)   |
| avg. rank | TALEs AUC     | 3.8           | 2.2       | 2.8      | 1.2       |

**Table O.** Performance evaluation on the level of TALEs for ten *Xoo* strains. For each strain and each approach, we list the number of TALEs with at least one predicted target gene that is also up-regulated in the infection (q-value < 0.01, log fold change > 1) for different cutoffs on the number of predictions per TALE, i.e., prediction ranks. For each threshold, we additionally report the average rank of each tool.

| measure   | Target Finder | TALgetter | Talvez | PrediTALe | Quade | TALgetter vs TALESF | Talvez vs Target Finder | Talvez vs TALgetter | PrediTALe vs Target Finder | PrediTALe vs TALgetter | PrediTALe vs Talvez |
|-----------|---------------|-----------|--------|-----------|-------|---------------------|-------------------------|---------------------|----------------------------|------------------------|---------------------|
| TALEs R1  | 2.5           | 2         | 3.3    | 1.7       | **    |                     | -                       | -                   | +                          | +                      | +++                 |
| TALEs R10 | 3.6           | 2.5       | 1.8    | 1.2       | ***   | ++                  | +++                     |                     | +++                        | +                      |                     |
| TALEs R20 | 3.1           | 1.8       | 2.4    | 1.6       | *     | +++                 |                         | -                   | +++                        |                        |                     |
| TALEs R50 | 3             | 2.2       | 2.5    | 1.1       | **    |                     |                         |                     | +++                        | ++                     | +++                 |
| TALEs AUC | 3.8           | 2.2       | 2.8    | 1.2       | ***   | +++                 | +                       | -                   | +++                        | +                      | +++                 |
| Genes R1  | 2.5           | 2         | 3.3    | 1.7       | **    |                     | -                       | -                   | +                          | +                      | +++                 |
| Genes R10 | 3.7           | 2.8       | 1.8    | 1.2       | ***   | +                   | +++                     | +                   | +++                        | +++                    |                     |
| Genes R20 | 3.3           | 2.2       | 2.9    | 1.1       | ***   | +++                 |                         | -                   | +++                        | +                      | +++                 |
| Genes R50 | 3.1           | 2.9       | 2.7    | 1.1       | ***   |                     | +                       |                     | +++                        | +++                    | +++                 |
| Genes AUC | 3.6           | 2.3       | 3.1    | 1         | ***   | +++                 |                         | -                   | +++                        | ++                     | +++                 |

**Table P.** Testing the significance of differences in prediction performance (q-value  $< 0.01$ , log fold change  $> 1$ ). For each tool and each measure (TALEs/Genes; rank cutoff), we report the average rank per tool, the significance of the Quade test (\*: $< 0.05$ ; \*\*: $< 0.01$ ; \*\*\*: $< 0.001$ ), and the significance of the pairwise comparison in a post-hoc test. Here, '+' and '-' indicate that the first tool has gained a significantly better or worse performance than the second one, respectively. The number of symbols encodes the significance level in analogy to the Quade test.

| strain    | # predictions | Target.Finder | TALgetter | Talvez   | PrediTALE |
|-----------|---------------|---------------|-----------|----------|-----------|
| B8-12     | 1             | 6 (2)         | 6 (2)     | 4 (4)    | 7 (1)     |
| BLS256    | 1             | 5 (4)         | 6 (2)     | 6 (2)    | 7 (1)     |
| BLS279    | 1             | 4 (2)         | 4 (2)     | 4 (2)    | 5 (1)     |
| BXOR1     | 1             | 4 (2)         | 3 (3)     | 5 (1)    | 3 (3)     |
| CFBP2286  | 1             | 4 (3)         | 5 (1)     | 4 (3)    | 5 (1)     |
| CFBP7331  | 1             | 4 (1)         | 3 (2)     | 3 (2)    | 3 (2)     |
| CFBP7341  | 1             | 4 (1)         | 2 (3)     | 3 (2)    | 2 (3)     |
| CFBP7342  | 1             | 6 (1)         | 3 (4)     | 4 (3)    | 6 (1)     |
| L8        | 1             | 9 (2)         | 9 (2)     | 7 (4)    | 11 (1)    |
| RS105     | 1             | 3 (3)         | 4 (1)     | 3 (3)    | 4 (1)     |
| avg. rank | 1             | 2.1           | 2.2       | 2.6      | 1.5       |
| B8-12     | 10            | 20 (4)        | 23 (1)    | 22 (3)   | 23 (1)    |
| BLS256    | 10            | 18 (4)        | 22 (3)    | 24 (2)   | 25 (1)    |
| BLS279    | 10            | 15 (4)        | 19 (2)    | 17 (3)   | 21 (1)    |
| BXOR1     | 10            | 18 (3)        | 17 (4)    | 22 (2)   | 23 (1)    |
| CFBP2286  | 10            | 12 (4)        | 13 (2)    | 13 (2)   | 14 (1)    |
| CFBP7331  | 10            | 11 (4)        | 13 (2)    | 13 (2)   | 16 (1)    |
| CFBP7341  | 10            | 10 (4)        | 12 (2)    | 11 (3)   | 15 (1)    |
| CFBP7342  | 10            | 12 (1)        | 12 (1)    | 10 (4)   | 12 (1)    |
| L8        | 10            | 22 (4)        | 29 (2)    | 27 (3)   | 31 (1)    |
| RS105     | 10            | 14 (3)        | 17 (2)    | 14 (3)   | 18 (1)    |
| avg. rank | 10            | 3.5           | 2.1       | 2.7      | 1.0       |
| B8-12     | 20            | 29 (4)        | 30 (2)    | 30 (2)   | 32 (1)    |
| BLS256    | 20            | 26 (4)        | 30 (2)    | 33 (1)   | 30 (2)    |
| BLS279    | 20            | 24 (3)        | 24 (3)    | 26 (2)   | 31 (1)    |
| BXOR1     | 20            | 26 (2)        | 22 (4)    | 26 (2)   | 29 (1)    |
| CFBP2286  | 20            | 16 (3)        | 16 (3)    | 19 (2)   | 20 (1)    |
| CFBP7331  | 20            | 18 (2)        | 15 (4)    | 16 (3)   | 22 (1)    |
| CFBP7341  | 20            | 18 (2)        | 14 (3)    | 14 (3)   | 19 (1)    |
| CFBP7342  | 20            | 22 (1)        | 18 (2)    | 15 (4)   | 16 (3)    |
| L8        | 20            | 35 (4)        | 40 (2)    | 37 (3)   | 44 (1)    |
| RS105     | 20            | 20 (4)        | 21 (2)    | 21 (2)   | 23 (1)    |
| avg. rank | 20            | 2.9           | 2.7       | 2.4      | 1.3       |
| B8-12     | 50            | 43 (4)        | 45 (3)    | 47 (1)   | 47 (1)    |
| BLS256    | 50            | 42 (4)        | 44 (3)    | 53 (2)   | 56 (1)    |
| BLS279    | 50            | 38 (3)        | 37 (4)    | 40 (2)   | 47 (1)    |
| BXOR1     | 50            | 35 (4)        | 36 (3)    | 41 (2)   | 42 (1)    |
| CFBP2286  | 50            | 22 (4)        | 23 (3)    | 25 (2)   | 26 (1)    |
| CFBP7331  | 50            | 26 (3)        | 27 (2)    | 25 (4)   | 28 (1)    |
| CFBP7341  | 50            | 25 (1)        | 24 (2)    | 21 (4)   | 24 (2)    |
| CFBP7342  | 50            | 28 (3)        | 32 (1)    | 28 (3)   | 29 (2)    |
| L8        | 50            | 50 (4)        | 54 (3)    | 58 (2)   | 63 (1)    |
| RS105     | 50            | 28 (3)        | 27 (4)    | 35 (1)   | 29 (2)    |
| avg. rank | 50            | 3.3           | 2.8       | 2.3      | 1.3       |
| B8-12     | Genes AUC     | 1469 (4)      | 1626 (2)  | 1624 (3) | 1685 (1)  |
| BLS256    | Genes AUC     | 1388 (4)      | 1544 (3)  | 1772 (2) | 1799 (1)  |
| BLS279    | Genes AUC     | 1239 (4)      | 1342 (3)  | 1353 (2) | 1675 (1)  |
| BXOR1     | Genes AUC     | 1249 (3)      | 1233 (4)  | 1417 (2) | 1436 (1)  |
| CFBP2286  | Genes AUC     | 817 (4)       | 879 (3)   | 950 (2)  | 1008 (1)  |
| CFBP7331  | Genes AUC     | 871 (3)       | 891 (2)   | 846 (4)  | 1059 (1)  |
| CFBP7341  | Genes AUC     | 857 (2)       | 811 (3)   | 736 (4)  | 924 (1)   |
| CFBP7342  | Genes AUC     | 1008 (1)      | 970 (2)   | 859 (4)  | 913 (3)   |
| L8        | Genes AUC     | 1756 (4)      | 2033 (2)  | 2005 (3) | 2255 (1)  |
| RS105     | Genes AUC     | 999 (4)       | 1083 (3)  | 1177 (1) | 1140 (2)  |
| avg. rank | Genes AUC     | 3.3           | 2.7       | 2.7      | 1.3       |

**Table Q.** Performance evaluation on the level of target genes for ten *Xoc* strains when filtering for predictions of TALE boxes on the same strand as the downstream gene. For each strain and each approach, we list the number of predicted target genes that are also up-regulated in the infection for different cutoffs on the number of predictions per TALE, i.e., prediction ranks. For each threshold, we additionally report the average rank of each tool.

| strain    | # predictions | Target.Finder | TALgetter | Talvez   | PrediTALE |
|-----------|---------------|---------------|-----------|----------|-----------|
| B8-12     | 1             | 6 (2)         | 6 (2)     | 4 (4)    | 7 (1)     |
| BLS256    | 1             | 5 (4)         | 6 (2)     | 6 (2)    | 7 (1)     |
| BLS279    | 1             | 4 (2)         | 4 (2)     | 4 (2)    | 5 (1)     |
| BXOR1     | 1             | 4 (2)         | 3 (3)     | 5 (1)    | 3 (3)     |
| CFBP2286  | 1             | 4 (3)         | 5 (1)     | 4 (3)    | 5 (1)     |
| CFBP7331  | 1             | 4 (1)         | 3 (2)     | 3 (2)    | 3 (2)     |
| CFBP7341  | 1             | 4 (1)         | 2 (3)     | 3 (2)    | 2 (3)     |
| CFBP7342  | 1             | 6 (1)         | 3 (4)     | 4 (3)    | 6 (1)     |
| L8        | 1             | 9 (2)         | 9 (2)     | 7 (4)    | 11 (1)    |
| RS105     | 1             | 3 (3)         | 4 (1)     | 3 (3)    | 4 (1)     |
| avg. rank | 1             | 2.1           | 2.2       | 2.6      | 1.5       |
| B8-12     | 10            | 14 (4)        | 16 (1)    | 16 (1)   | 16 (1)    |
| BLS256    | 10            | 13 (4)        | 14 (3)    | 17 (1)   | 17 (1)    |
| BLS279    | 10            | 11 (4)        | 13 (2)    | 12 (3)   | 15 (1)    |
| BXOR1     | 10            | 13 (3)        | 13 (3)    | 16 (1)   | 16 (1)    |
| CFBP2286  | 10            | 10 (4)        | 11 (2)    | 12 (1)   | 11 (2)    |
| CFBP7331  | 10            | 7 (4)         | 9 (1)     | 8 (3)    | 9 (1)     |
| CFBP7341  | 10            | 7 (3)         | 9 (1)     | 7 (3)    | 9 (1)     |
| CFBP7342  | 10            | 10 (1)        | 9 (2)     | 9 (2)    | 9 (2)     |
| L8        | 10            | 17 (4)        | 21 (1)    | 20 (3)   | 21 (1)    |
| RS105     | 10            | 10 (4)        | 12 (2)    | 11 (3)   | 13 (1)    |
| avg. rank | 10            | 3.5           | 1.8       | 2.1      | 1.2       |
| B8-12     | 20            | 19 (1)        | 18 (4)    | 19 (1)   | 19 (1)    |
| BLS256    | 20            | 17 (4)        | 18 (3)    | 19 (2)   | 20 (1)    |
| BLS279    | 20            | 16 (3)        | 15 (4)    | 17 (2)   | 20 (1)    |
| BXOR1     | 20            | 17 (3)        | 16 (4)    | 18 (2)   | 19 (1)    |
| CFBP2286  | 20            | 12 (3)        | 12 (3)    | 13 (1)   | 13 (1)    |
| CFBP7331  | 20            | 9 (3)         | 10 (2)    | 9 (3)    | 12 (1)    |
| CFBP7341  | 20            | 10 (2)        | 10 (2)    | 8 (4)    | 12 (1)    |
| CFBP7342  | 20            | 13 (1)        | 11 (3)    | 12 (2)   | 11 (3)    |
| L8        | 20            | 21 (3)        | 24 (2)    | 21 (3)   | 25 (1)    |
| RS105     | 20            | 14 (2)        | 14 (2)    | 14 (2)   | 15 (1)    |
| avg. rank | 20            | 2.5           | 2.9       | 2.2      | 1.2       |
| B8-12     | 50            | 23 (2)        | 25 (1)    | 22 (3)   | 22 (3)    |
| BLS256    | 50            | 19 (4)        | 24 (1)    | 21 (3)   | 22 (2)    |
| BLS279    | 50            | 20 (2)        | 20 (2)    | 19 (4)   | 22 (1)    |
| BXOR1     | 50            | 20 (4)        | 21 (3)    | 22 (2)   | 23 (1)    |
| CFBP2286  | 50            | 13 (4)        | 17 (1)    | 16 (2)   | 16 (2)    |
| CFBP7331  | 50            | 12 (3)        | 12 (3)    | 13 (1)   | 13 (1)    |
| CFBP7341  | 50            | 12 (2)        | 12 (2)    | 11 (4)   | 13 (1)    |
| CFBP7342  | 50            | 14 (2)        | 14 (2)    | 15 (1)   | 13 (4)    |
| L8        | 50            | 24 (4)        | 27 (1)    | 27 (1)   | 27 (1)    |
| RS105     | 50            | 17 (4)        | 18 (1)    | 18 (1)   | 18 (1)    |
| avg. rank | 50            | 3.1           | 1.7       | 2.2      | 1.7       |
| B8-12     | TALEs AUC     | 901 (4)       | 971 (1)   | 912 (3)  | 924 (2)   |
| BLS256    | TALEs AUC     | 797 (4)       | 924 (2)   | 916 (3)  | 981 (1)   |
| BLS279    | TALEs AUC     | 757 (4)       | 800 (2)   | 775 (3)  | 949 (1)   |
| BXOR1     | TALEs AUC     | 776 (4)       | 818 (3)   | 888 (1)  | 887 (2)   |
| CFBP2286  | TALEs AUC     | 552 (4)       | 657 (3)   | 664 (1)  | 662 (2)   |
| CFBP7331  | TALEs AUC     | 432 (4)       | 517 (2)   | 469 (3)  | 562 (1)   |
| CFBP7341  | TALEs AUC     | 458 (3)       | 514 (2)   | 421 (4)  | 557 (1)   |
| CFBP7342  | TALEs AUC     | 589 (1)       | 535 (4)   | 553 (2)  | 540 (3)   |
| L8        | TALEs AUC     | 994 (4)       | 1163 (2)  | 1099 (3) | 1186 (1)  |
| RS105     | TALEs AUC     | 638 (4)       | 732 (2)   | 704 (3)  | 752 (1)   |
| avg. rank | TALEs AUC     | 3.6           | 2.3       | 2.6      | 1.5       |

**Table R.** Performance evaluation on the level of TALEs for ten *Xoo* strains when filtering for predictions of TALE boxes on the same strand as the downstream gene. For each strain and each approach, we list the number of TALEs with at least one predicted target gene that is also up-regulated in the infection for different cutoffs on the number of predictions per TALE, i.e., prediction ranks. For each threshold, we additionally report the average rank of each tool.

| measure   | Target Finder | TALgetter | Talvez | PrediTALE | Quade | TALgetter vs TALESF | Talvez vs Target Finder | Talvez vs TALgetter | PrediTALE vs Target Finder | PrediTALE vs TALgetter | PrediTALE vs Talvez |
|-----------|---------------|-----------|--------|-----------|-------|---------------------|-------------------------|---------------------|----------------------------|------------------------|---------------------|
| Genes R1  | 2.1           | 2.2       | 2.6    | 1.5       |       |                     |                         |                     |                            |                        |                     |
| Genes R10 | 3.5           | 2.1       | 2.7    | 1         | ***   | ++                  | ++                      |                     | +++                        | +++                    | +++                 |
| Genes R20 | 2.9           | 2.7       | 2.4    | 1.3       | *     |                     |                         |                     | +++                        | +++                    | ++                  |
| Genes R50 | 3.3           | 2.8       | 2.3    | 1.3       | **    |                     | ++                      | +                   | +++                        | +++                    |                     |
| Genes AUC | 3.3           | 2.7       | 2.7    | 1.3       | ***   | +                   | +                       |                     | +++                        | +++                    | +++                 |
| TALEs R1  | 2.1           | 2.2       | 2.6    | 1.5       |       |                     |                         |                     |                            |                        |                     |
| TALEs R10 | 3.5           | 1.8       | 2.1    | 1.2       | ***   | +++                 | +++                     |                     | +++                        |                        | +                   |
| TALEs R20 | 2.5           | 2.9       | 2.2    | 1.2       | **    |                     |                         |                     | +++                        | +++                    | +++                 |
| TALEs R50 | 3.1           | 1.7       | 2.2    | 1.7       | *     | +++                 |                         |                     | ++                         |                        |                     |
| TALEs AUC | 3.6           | 2.3       | 2.6    | 1.5       | ***   | +++                 | +                       |                     | +++                        | +                      | +++                 |

**Table S.** Testing the significance of differences in prediction performance when filtering for predictions of TALE boxes on the same strand as the downstream gene. For each tool and each measure (TALEs/Genes; rank cutoff), we report the average rank per tool, the significance of the Quade test (\*:< 0.05; \*\*:< 0.01; \*\*\*:< 0.001), and the significance of the pairwise comparison in a post-hoc test. Here, '+' and '-' indicate that the first tool has gained a significantly better or worse performance than the second one, respectively. The number of symbols encodes the significance level in analogy to the Quade test.

| Tool          | Runtime (min:sec) |
|---------------|-------------------|
| PrediTALE     | 24:34             |
| Target Finder | 09:21             |
| Talvez        | 347:35            |
| TALgetter     | 42:45             |

**Table T.** Runtime of all four approaches for genome-wide scans of the rice genome for target boxes of all 28 TALEs of strain *Xoc* BLS256.