Supplementary File 5. Cross-protein prediction of mutation phenotype

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Test set | | TetR (0.11) | | MphR (0.12) | | RolR (0.09) | | TtgR (0.07) | |
|  | |  | TL |  | TL |  | TL |  | TL |
| Train  set | TetR | 0.53± 0.00 | ---------- | 0.05± 0.09 | 0.48± 0.01 | 0.0± 0.0 | 0.26± 0.02 | 0.09± 0.07 | 0.19± 0.02 |
| MphR | 0.0± 0.0 | 0.30± 0.00 | 0.69± 0.00 | ---------- | 0.02± 0.05 | 0.26± 0.00 | 0.0± 0.0 | 0.20± 0.00 |
| RolR | 0.0± 0.0 | 0.27± 0.01 | 0.05± 0.08 | 0.42± 0.02 | 0.59± 0.02 | ---------- | 0.05± 0.06 | 0.18± 0.01 |
| TtgR | 0.0± 0.0 | 0.32± 0.00 | 0.0± 0.0 | 0.45± 0.00 | 0.0± 0.0 | 0.27± 0.00 | 0.44± 0.00 | ---------- |
| no TetR | 0.04± 0.08 | 0.28± 0.01 | ---------- | ---------- | ---------- | ---------- | ---------- | ---------- |
| no MphR | ---------- | ---------- | 0.05± 0.1 | 0.44± 0.01 | ---------- | ---------- | ---------- | ---------- |
| no RolR | ---------- | ---------- | ---------- | ---------- | 0.10± 0.09 | 0.11± 0.02 | ---------- | ---------- |
| no TtgR | ---------- | ---------- | ---------- | ---------- | ---------- | ---------- | 0.12± 0.02 | 0.21± 0.01 |

The columns of TL report the average result of five times of transfer learning studies; Numbers in the first row are the random references for each protein; no TetR in the second column labels the training data set composed of all data of the other three proteins except TetR.