Supplementary Material

**Supplementary Table 6.** Metrics of Performance Evaluation

|  |  |  |
| --- | --- | --- |
| **Metrics** | **Description** | **Definition1** |
| TPR | sensitivity or true positive rate | $$TPR=\frac{TP}{P}=\frac{TP}{TP+FN}$$ |
| TNR | specificity or true negative rate | $$TNR=\frac{TN}{N}=\frac{TN}{FP+TN}$$ |
| PPV | precision or positive predictive value | $$PPV=\frac{TP}{TP+FP}$$ |
| NPV | negative predictive value | $$NPV=\frac{TN}{TN+FN}$$ |
| FPR | false positive rate | $$FPR=\frac{FP}{N}=\frac{FP}{FP+TN}$$ |
| FDR | false discovery rate | $$FDR=\frac{FP}{FP+TP}=1-PPV$$ |
| FNR | miss rate or false negative rate | $$FNR=\frac{FN}{P}=\frac{FN}{FN+TP}$$ |
| ACC | accuracy | $$ACC=\frac{TP+TN}{P+N}$$ |
| F1 | F1 Score | $$F1=\frac{2TP}{2TP+FP+FN}=\frac{2×PPV×TPR}{PPV+TPR}$$ |
| MCC | Matthews correlation coefficient | $$MCC=\frac{TP×TN-FP×FN}{\sqrt{(TP+FP)(TP+FN)(TN+FP)(TN+FN)}}$$ |

1TP: true positive, TN: true negative, FP: false positive, FN: false negative.