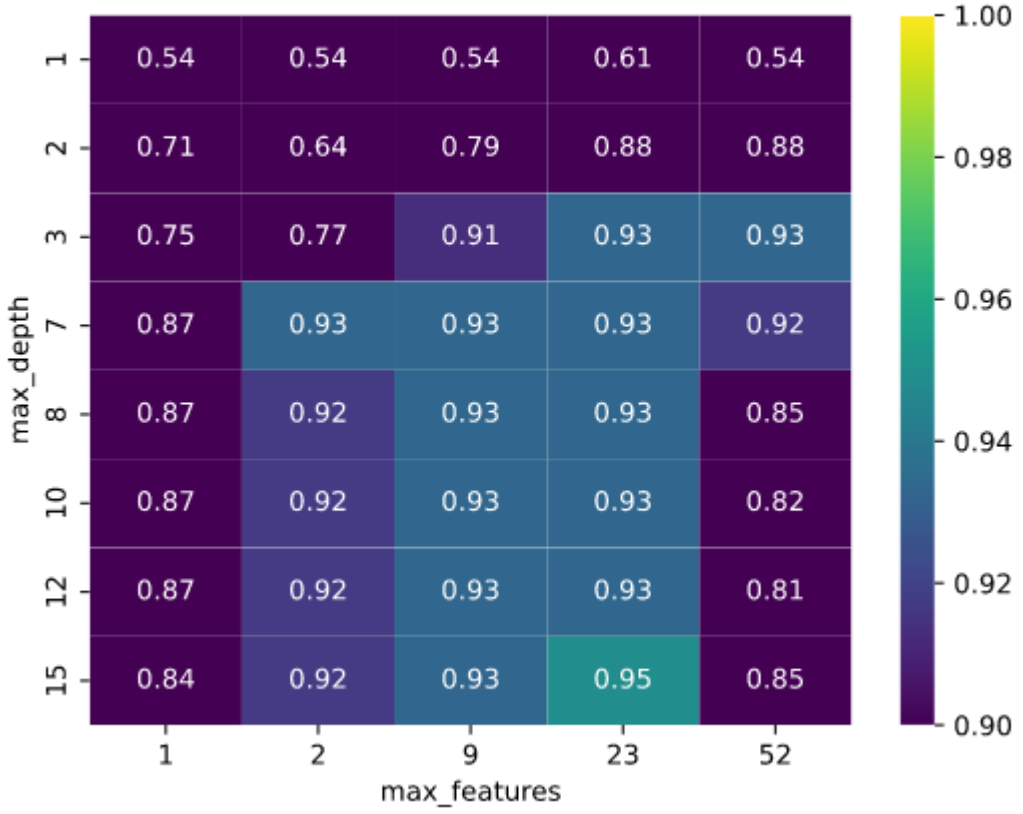
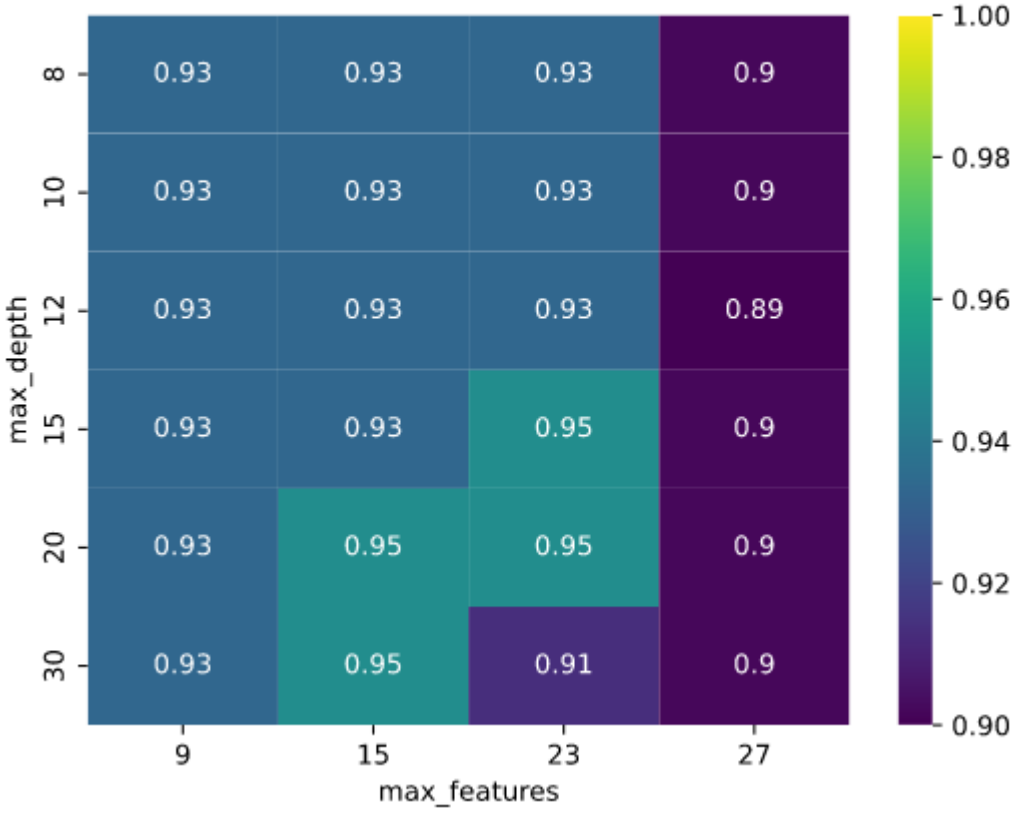
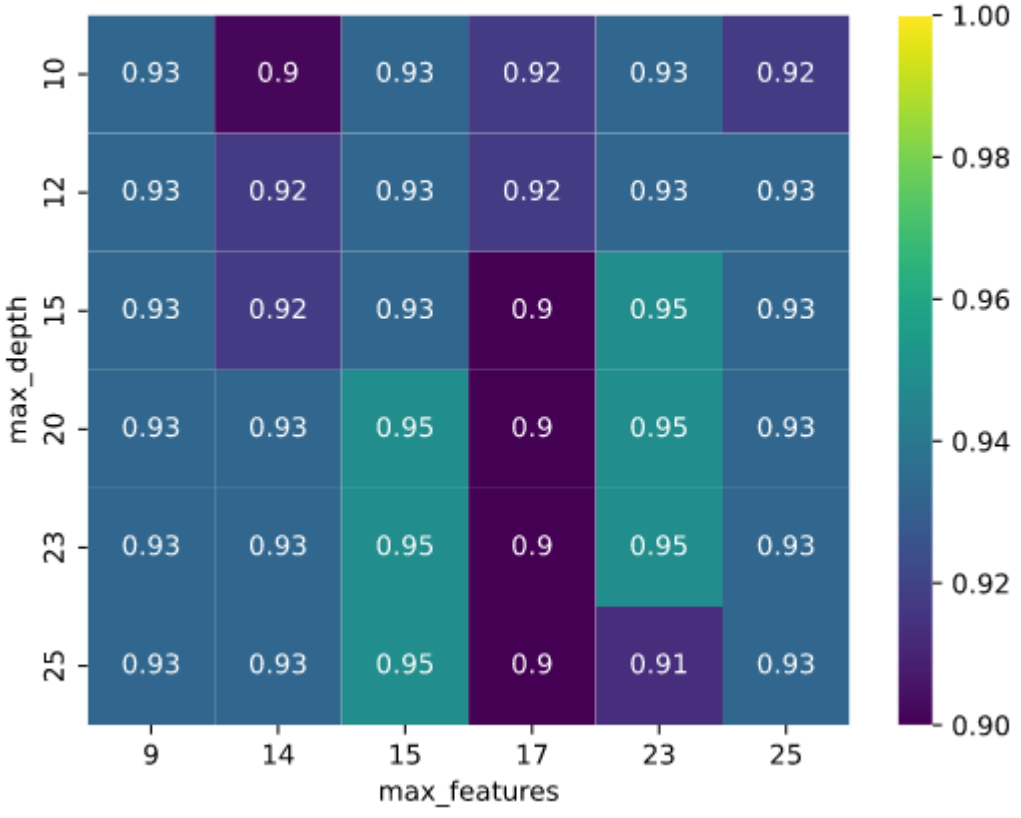
Caspofungin

Log2(522) == 9

SQRT(522) == 23




max_depth
8
10
12
15
20
30
0.93 0.93 0.93 0.9
0.93 0.93 0.93 0.9
0.93 0.93 0.93 0.89
0.93 0.93 0.95 0.9
0.93 0.95 0.95 0.9
0.93 0.95 0.91 0.9
9
15
23
27
max_features
1.00
0.98
0.96
0.94
0.92
0.90


max_depth
10
12
15
20
23
25
0.93 0.9 0.93 0.92 0.93 0.92
0.93 0.92 0.93 0.92 0.93 0.93
0.93 0.92 0.93 0.9 0.95 0.93
0.93 0.93 0.95 0.9 0.95 0.93
0.93 0.93 0.95 0.9 0.95 0.93
0.93 0.93 0.95 0.9 0.91 0.93
9
14
15
17
23
25
max_features
1.00
0.98
0.96
0.94
0.92
0.90

New gridsearch:

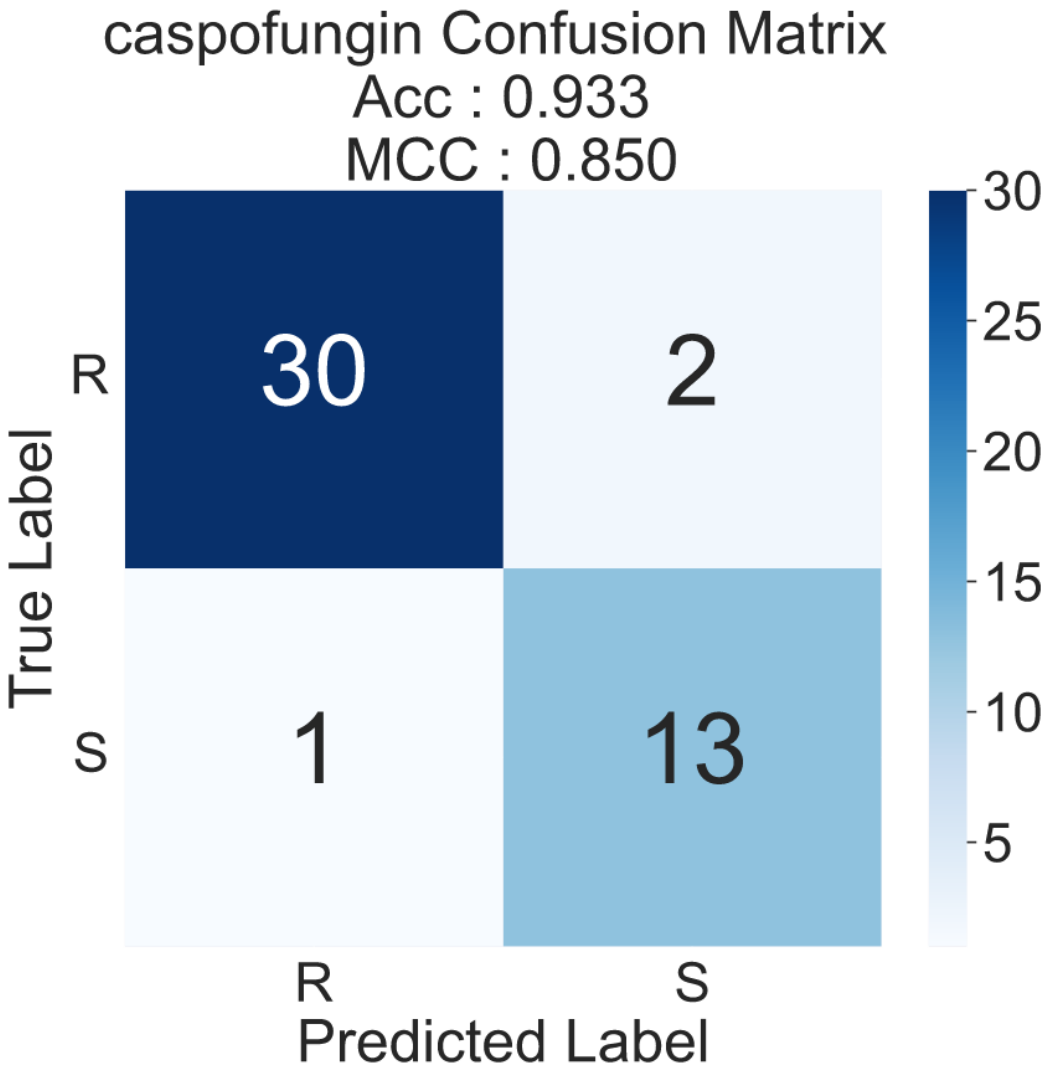
```
grid = {'n_estimators': [100],
        'max_features': [9, 14, 15, 17, 23, 25],
        'max_depth': [10,12,15,20,23,25],
        'min_samples_split': [2],
        'min_samples_leaf' : [1],
        'random_state': [18]}
```

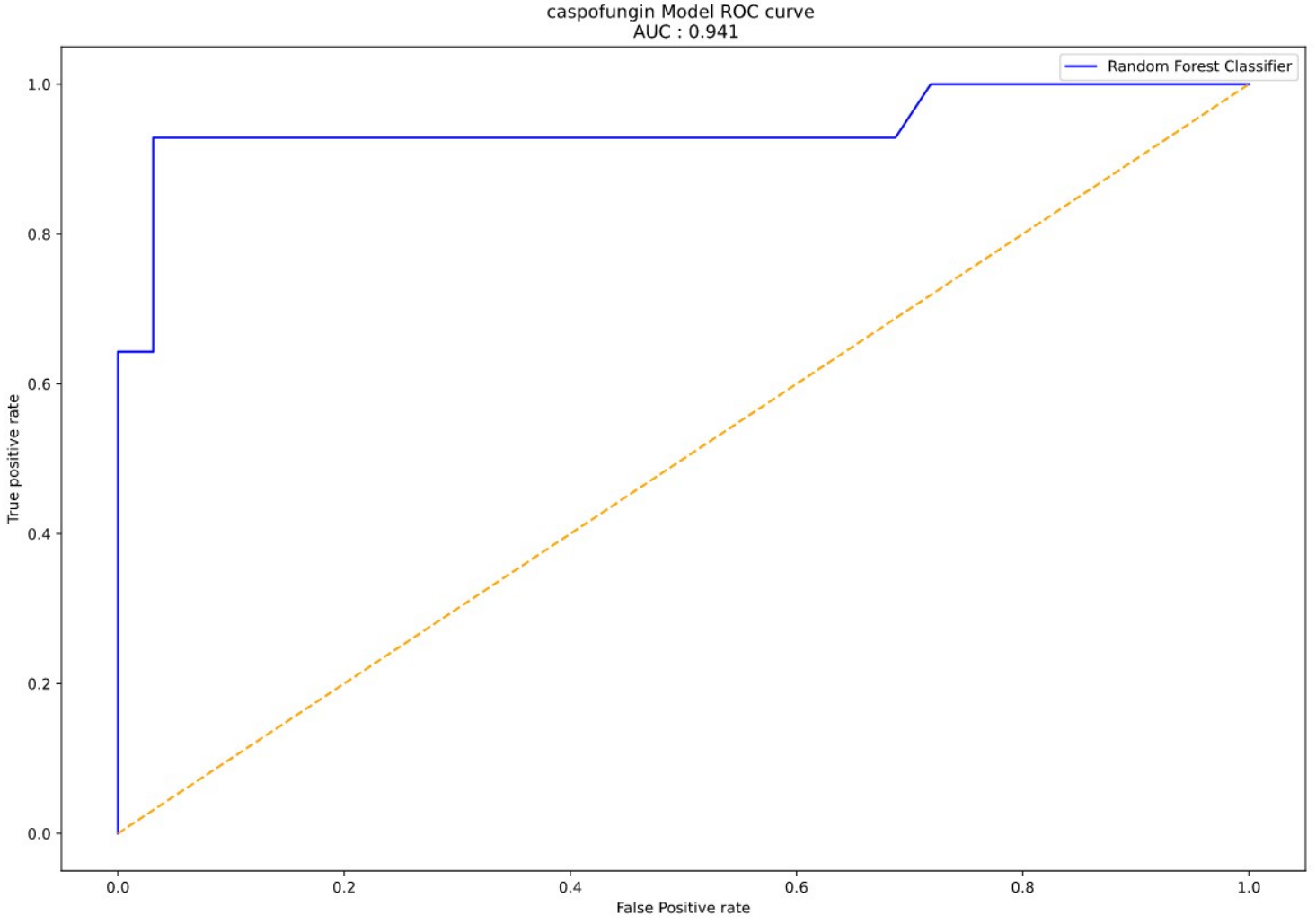
Best params caspofungin:

{'max_depth': 23, 'max_features': 9, 'min_samples_leaf': 1, 'min_samples_split': 2, 'n_estimators': 100, 'random_state': 18}

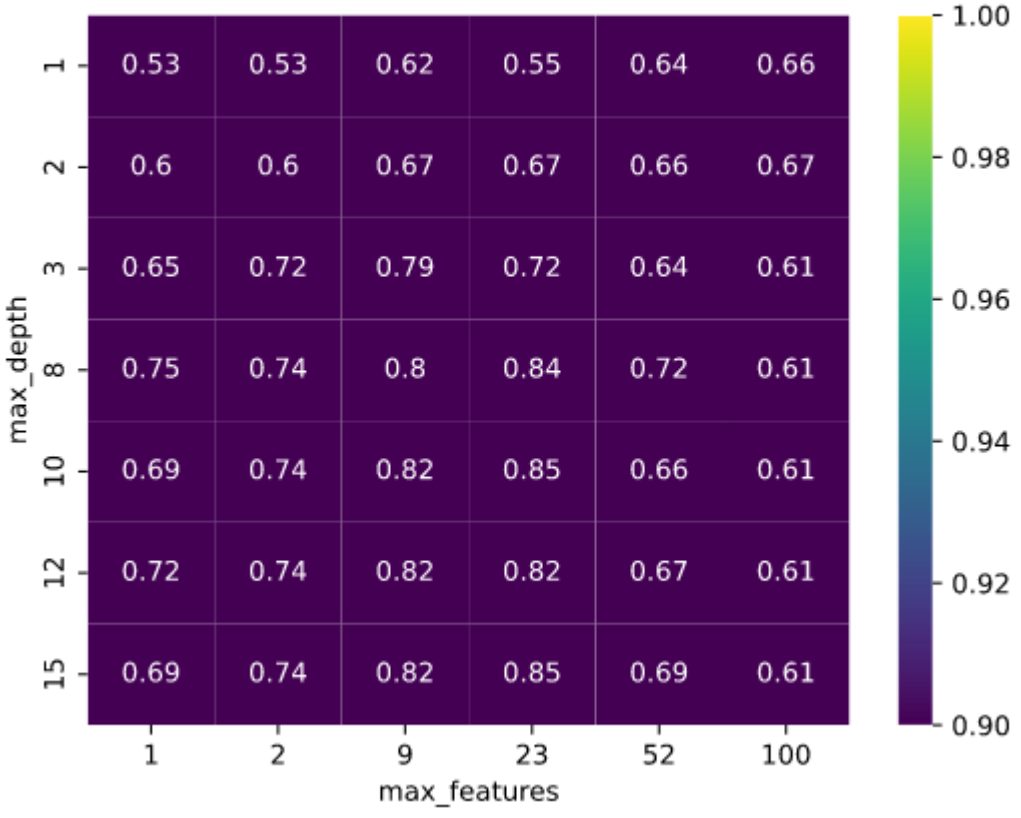
Train Balanced Acc : 0.9663919413919414

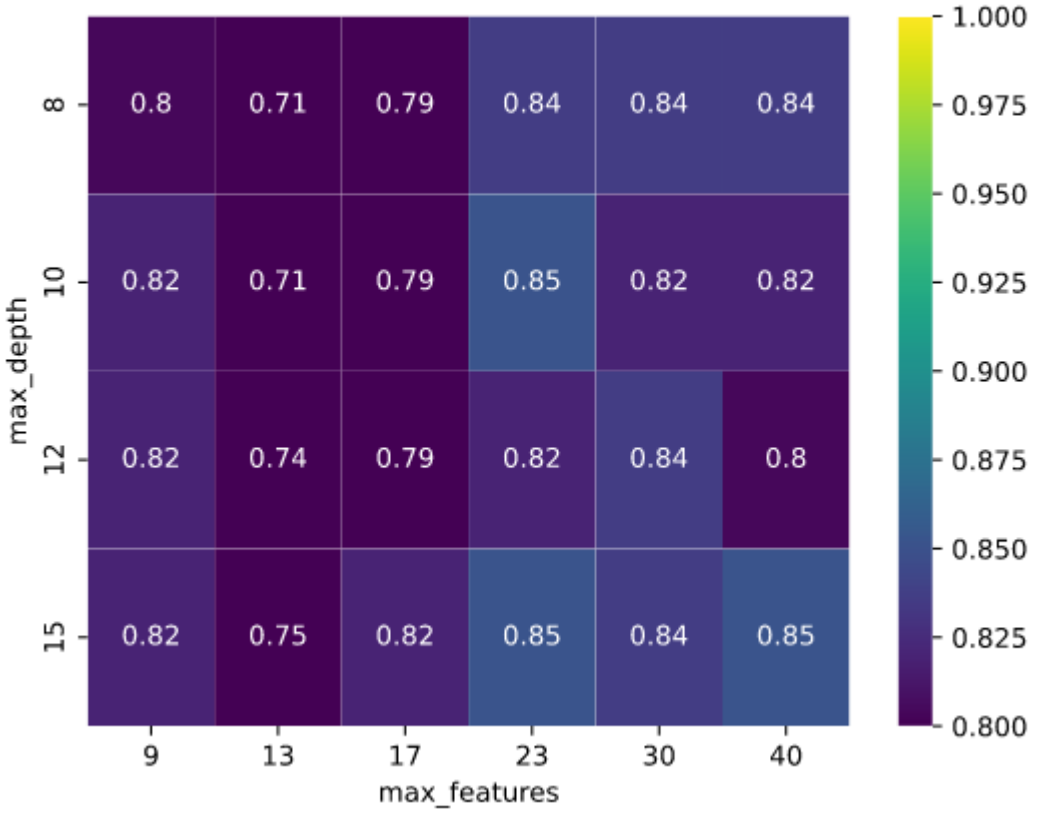
Test Balanced Acc : 0.9330357142857143


caspofungin Confusion Matrix
Acc : 0.933
MCC : 0.850
True Label
R
S
30
2
1
13
R
S
Predicted Label
30
25
20
15
10
5


caspofungin Model ROC curve
AUC : 0.941
Random Forest Classifier
True positive rate
False Positive rate
0.0
0.2
0.4
0.6
0.8
1.0

Anidulafungin


max_depth
1
2
3
8
10
12
15
0.53 0.53 0.62 0.55 0.64 0.66
0.6 0.6 0.67 0.67 0.66 0.67
0.65 0.72 0.79 0.72 0.64 0.61
0.75 0.74 0.8 0.84 0.72 0.61
0.69 0.74 0.82 0.85 0.66 0.61
0.72 0.74 0.82 0.82 0.67 0.61
0.69 0.74 0.82 0.85 0.69 0.61
1
2
9
23
52
100
max_features
1.00
0.98
0.96
0.94
0.92
0.90


max_depth
8
10
12
15
0.8
0.71
0.79
0.84
0.84
0.84
0.82
0.71
0.79
0.85
0.82
0.82
0.82
0.74
0.79
0.82
0.84
0.8
0.82
0.75
0.82
0.85
0.84
0.85
9
13
17
23
30
40
max_features
1.000
0.975
0.950
0.925
0.900
0.875
0.850
0.825
0.800

New gridsearch:

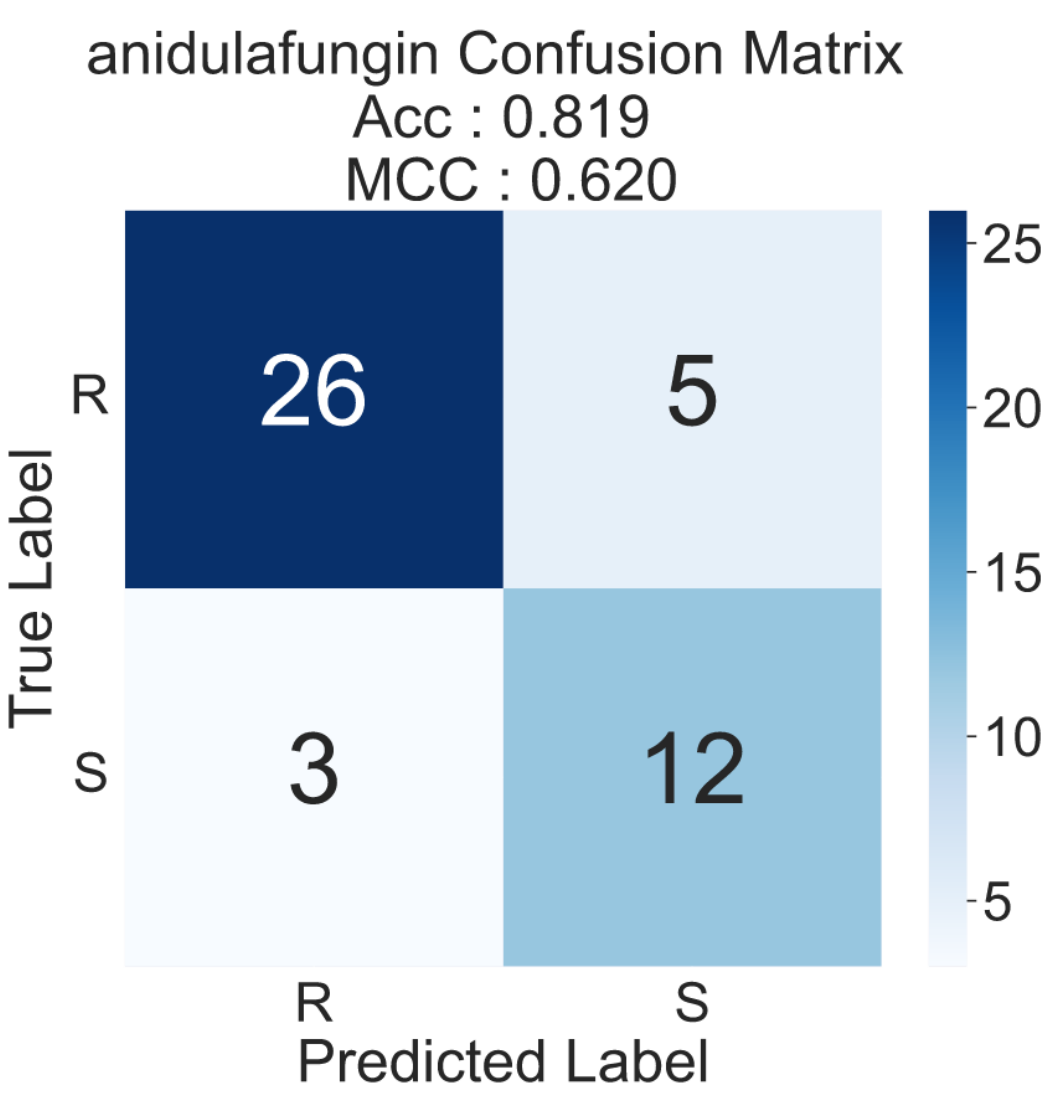
```
grid = {'n_estimators': [100],
        'max_features': [9, 13, 17, 23, 30, 40],
        'max_depth': [8, 10, 12, 15],
        'min_samples_split': [2],
        'min_samples_leaf' : [1],
        'random_state': [18]}
```

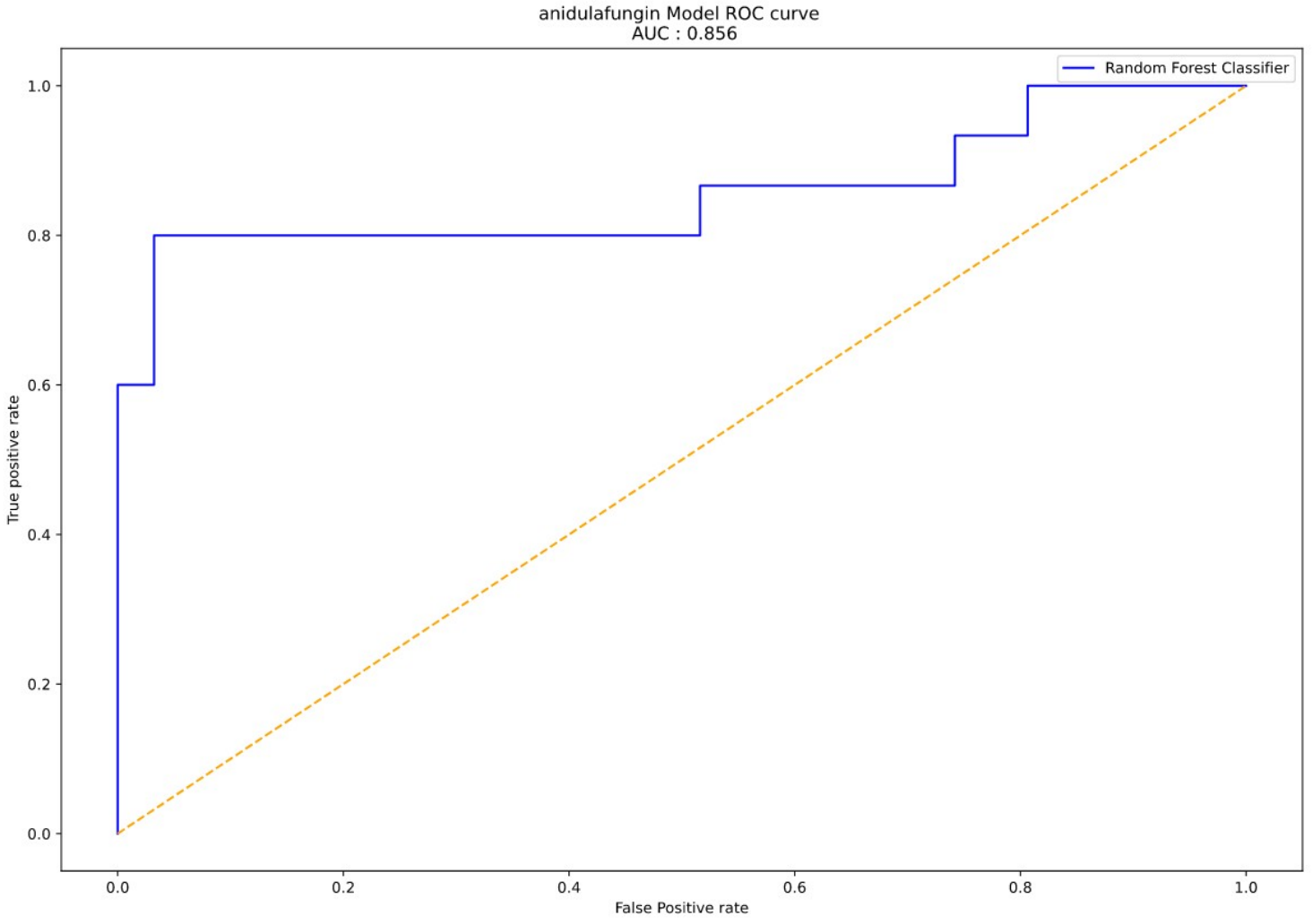
Best params anidulafungin:

{'max_depth': 15, 'max_features': 9, 'min_samples_leaf': 1, 'min_samples_split': 2, 'n_estimators': 100, 'random_state': 18}

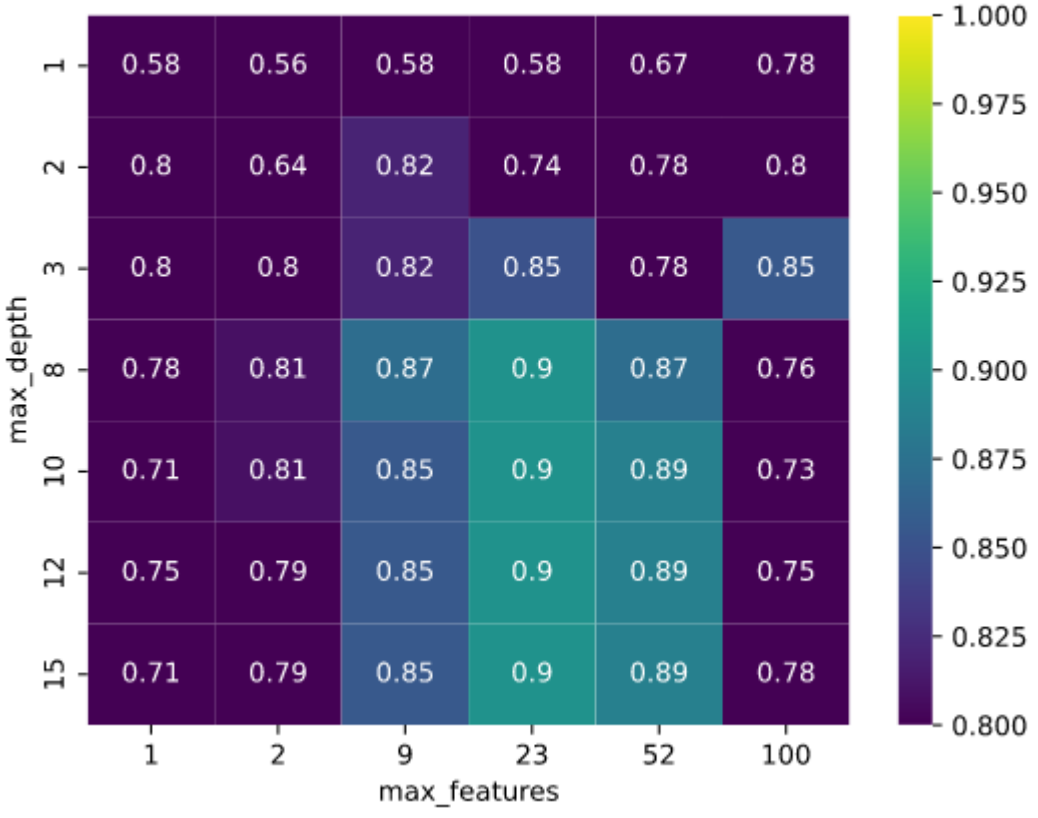
Train Balanced Acc : 0.965958605664488

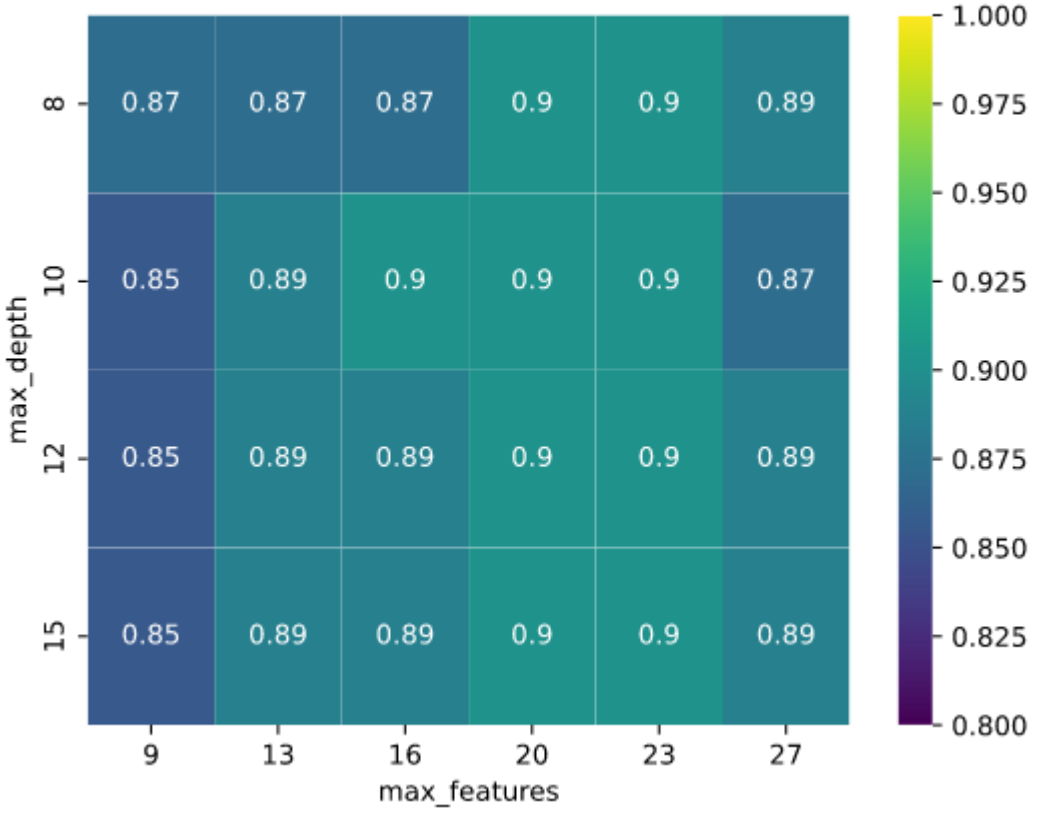
Test Balanced Acc : 0.8193548387096774

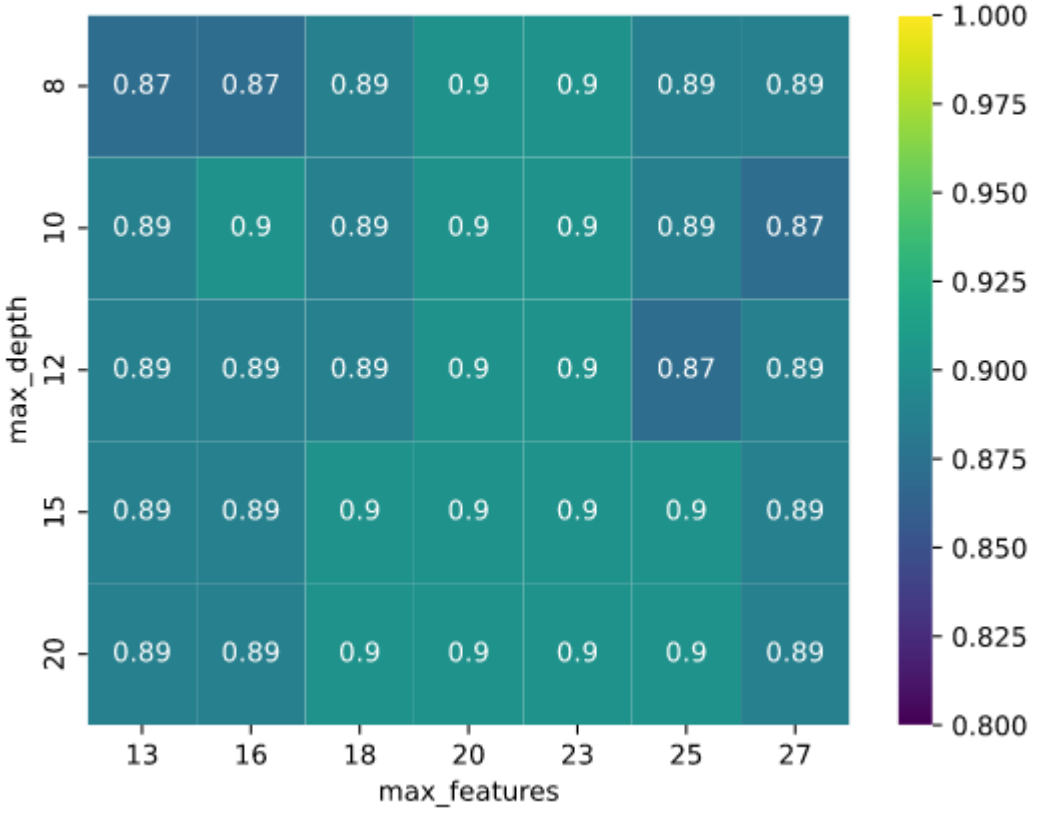

anidulafungin Confusion Matrix
Acc : 0.819
MCC : 0.620
26
5
3
12
R
S
True Label
R
S
Predicted Label
25
20
15
10
5


anidulafungin Model ROC curve
AUC : 0.856
Random Forest Classifier
True positive rate
False Positive rate
0.0
0.2
0.4
0.6
0.8
1.0

Micafungin


max_depth
1
2
3
8
10
12
15
0.58 0.56 0.58 0.58 0.67 0.78
0.8 0.64 0.82 0.74 0.78 0.8
0.8 0.8 0.82 0.85 0.78 0.85
0.78 0.81 0.87 0.9 0.87 0.76
0.71 0.81 0.85 0.9 0.89 0.73
0.75 0.79 0.85 0.9 0.89 0.75
0.71 0.79 0.85 0.9 0.89 0.78
1
2
9
23
52
100
max_features
1.000
0.975
0.950
0.925
0.900
0.875
0.850
0.825
0.800


max_depth
8
10
12
15
0.87 0.87 0.87 0.9 0.9 0.89
0.85 0.89 0.9 0.9 0.9 0.87
0.85 0.89 0.89 0.9 0.9 0.89
0.85 0.89 0.89 0.9 0.9 0.89
9
13
16
20
23
27
max_features
1.000
0.975
0.950
0.925
0.900
0.875
0.850
0.825
0.800


max_depth
8
10
12
15
20
0.87 0.87 0.89 0.9 0.9 0.89 0.89
0.89 0.9 0.89 0.9 0.9 0.89 0.87
0.89 0.89 0.89 0.9 0.9 0.87 0.89
0.89 0.89 0.9 0.9 0.9 0.9 0.89
0.89 0.89 0.9 0.9 0.9 0.9 0.89
13 16 18 20 23 25 27
max_features
1.000
0.975
0.950
0.925
0.900
0.875
0.850
0.825
0.800

New gridsearch:

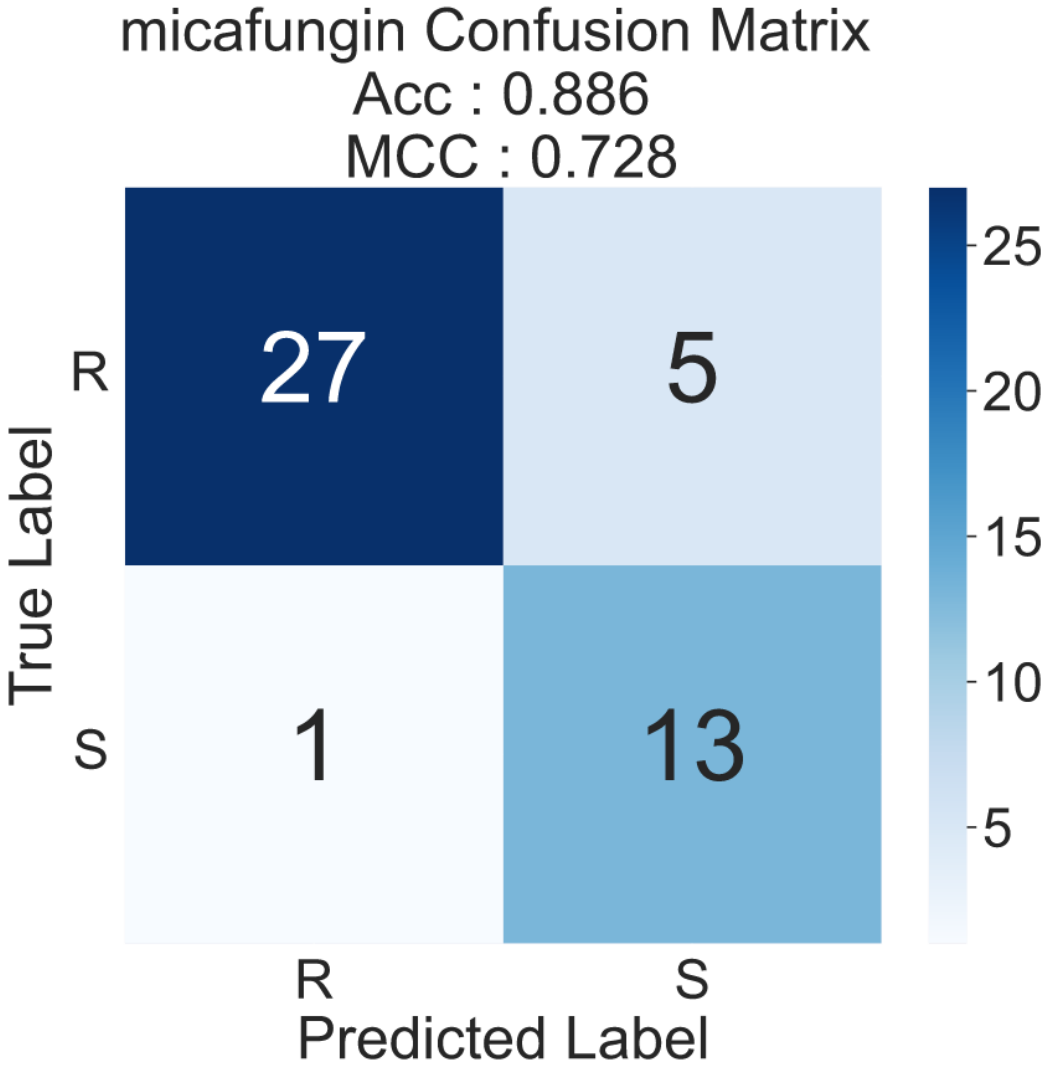
```
grid = {'n_estimators': [100],
        'max_features': [19,20,21,23,25,27],
        'max_depth': [12,13,14,15,16,17,20],
        'min_samples_split': [2],
        'min_samples_leaf' : [1],
        'random_state': [18]}
```

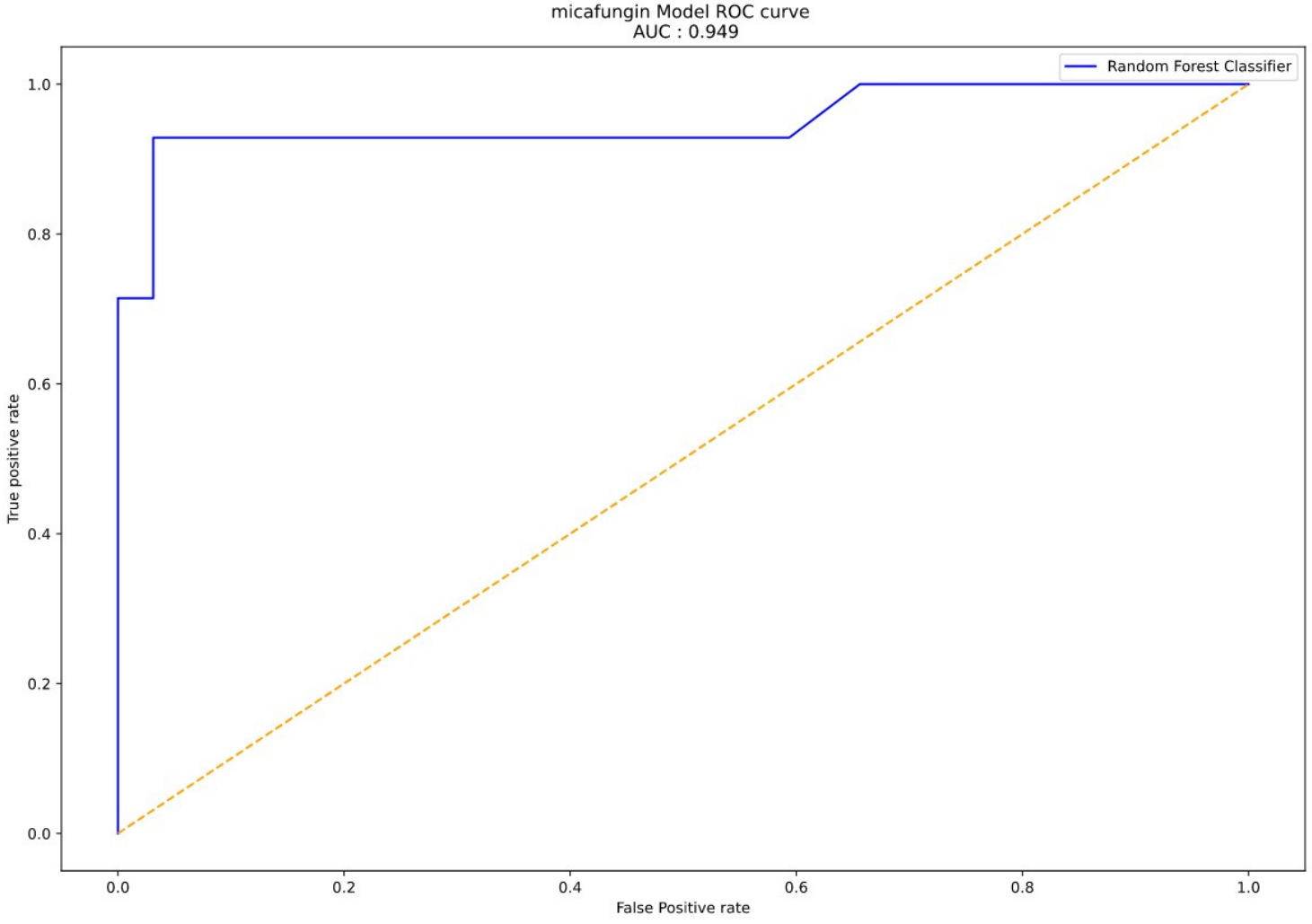
Best params micafungin:

{'max_depth': 20, 'max_features': 27, 'min_samples_leaf': 1, 'min_samples_split': 2, 'n_estimators': 100, 'random_state': 18}

Train Balanced Acc : 0.9592925659472422

Test Balanced Acc : 0.8861607142857143


micafungin Confusion Matrix
Acc : 0.886
MCC : 0.728
27
5
1
13
R
S
True Label
R
S
Predicted Label
25
20
15
10
5


micafungin Model ROC curve
AUC : 0.949
Random Forest Classifier
True positive rate
False Positive rate
0.0
0.2
0.4
0.6
0.8
1.0