

# Supplementary Material

## 1 A good CASP9 contact prediction example

A good CASP9 contact prediction example that LRcon outperforms other predictors is shown in Figure 1. The true contact map and the predicted contact maps (top  $0.2L$  predictions) at sequence separation  $s \geq 24$  of five best CASP9 predictors and LRcon are shown in Figure 1 as well. From the figure, we can see that the five best CASP9 predictors correctly identify most of the contacts (at top  $0.2L$  predictors) for this target. LRcon further improves the predictions of these predictors, yielding the highest accuracy (0.904), coverage (0.155), and F-measure (0.265).

[Figure 1 about here.]

## 2 Results on the CASP9 dataset

### 2.1 Results for the top $0.2L$ predictions

[Figure 2 about here.]

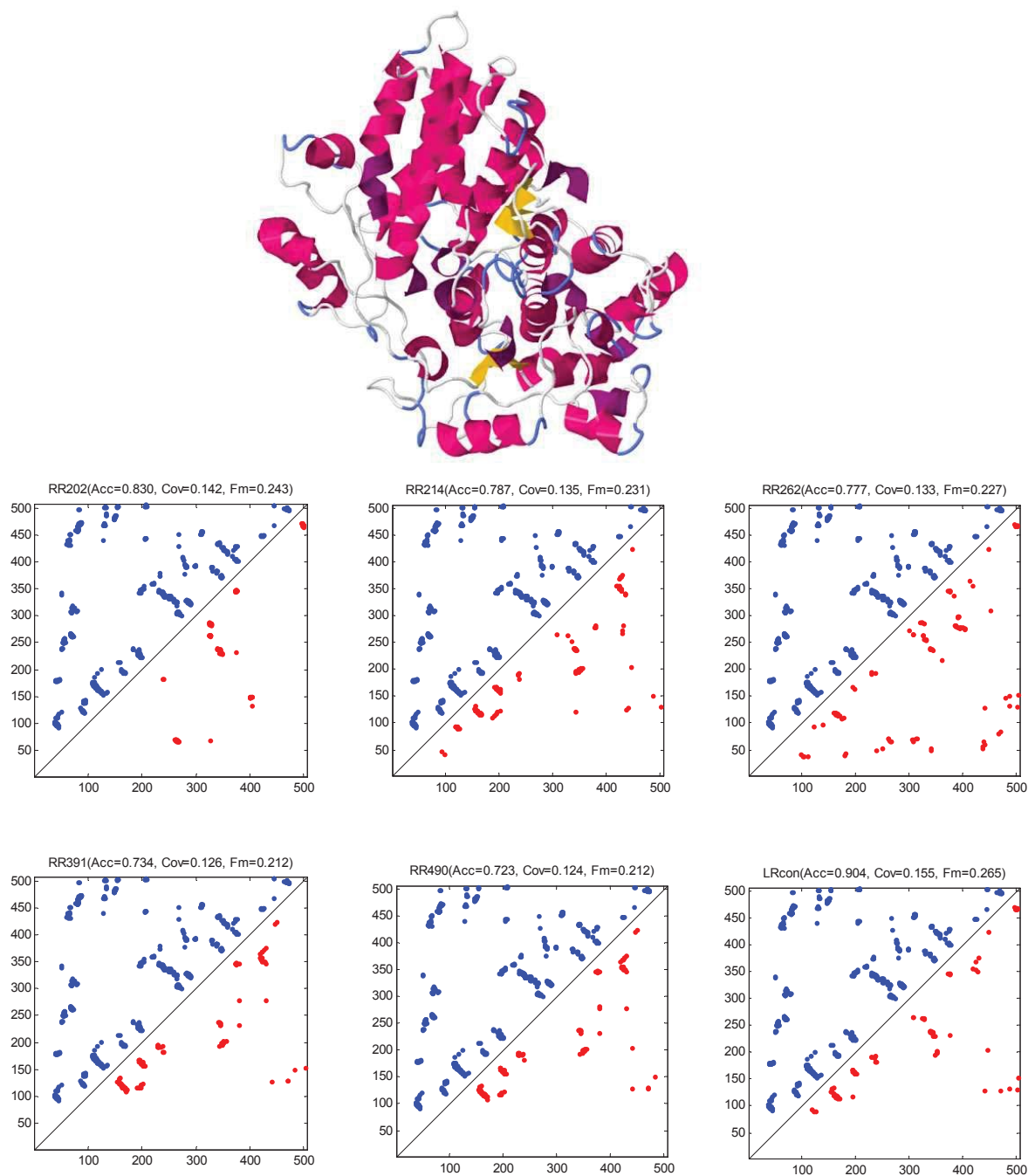


Figure 1: A good contact prediction example. The top panel is a cartoon visualization of the 3D structure of the CASP9 target T0532. The lower panels are the true contact map and predicted contact maps at sequence separation  $s \geq 24$ . The blue points in the upper triangles represent the true contact map. The red points in the lower triangles represent the top  $0.2L$  predictions of five CASP9 predictors and LRcon.

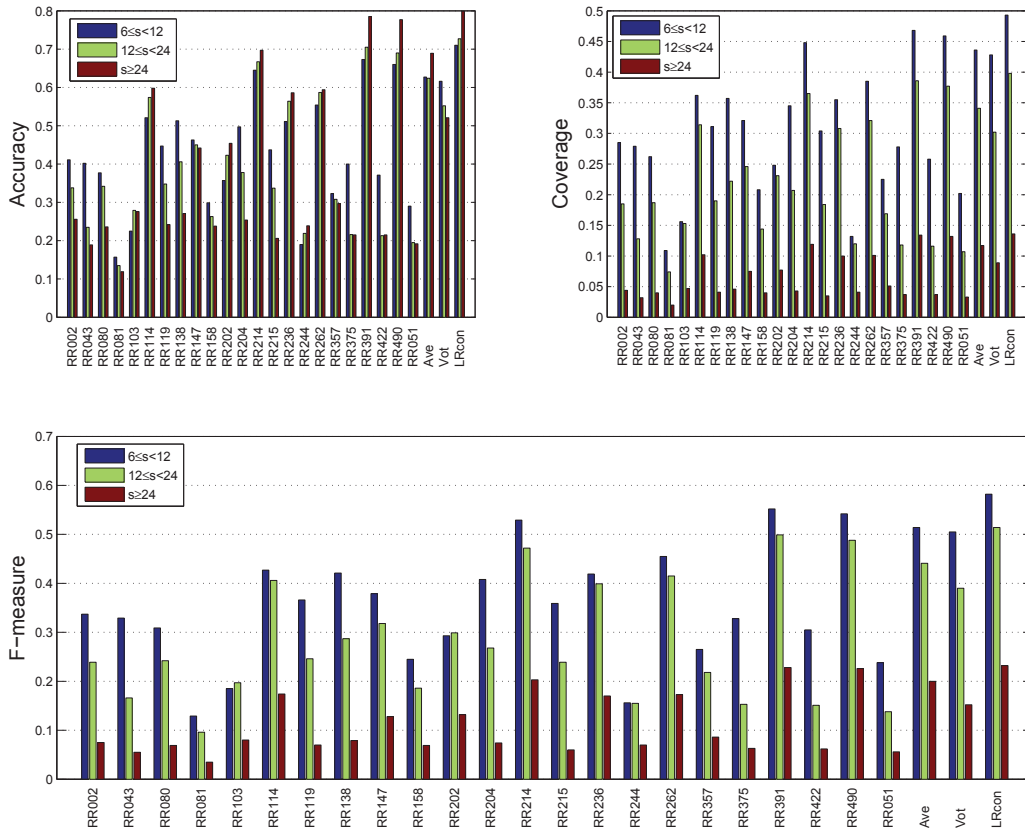


Figure 2: Histogram of the accuracies, coverage and F-measures for the top  $0.2L$  predictions of LRcon and other predictors on the CASP9 dataset D80.