

# iEnhancer-DLRA: identification of enhancers and their strengths by a self-attention fusion strategy for local and global features

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## Analysis of the selection of K:

To find the best values of the two K's (K1 and K2) of the K-mer, we conducted experiments on the enhancers' identifier and classifier. It should be noted that the experimental results are not affected by swapping the values of K1 and K2 due to the consistent structure of the LSTM network. We first fixed K1 and then continuously adjusted the value of K2 while keeping the other settings constant. We then observed the changes in four metrics: accuracy (ACC), sensitivity (SN), specificity (SP), and the Mathews correlation coefficient (MCC). We set the candidate values of K1 as 4, 5, and 6. The experiment results are shown in Figs. S1 and S2. We can see that when  $K2 = 4$  or  $K2 = 7$ , there are two peaks, indicating that 4 and 7 are the best-chosen values. When  $K1 = 4$  and  $K2 = 7$ , the ACC of the enhancers' identifier and classifier is the highest, which indicates that the use of the combination of 4 and 7 achieves optimal performance.

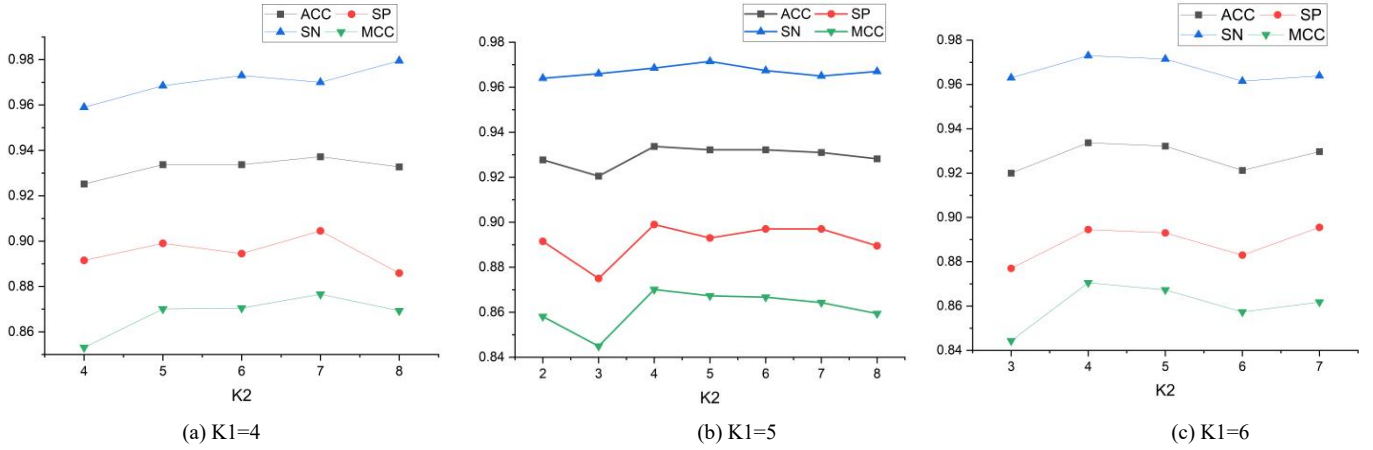


Figure S1. The performance of identifying the enhancer under different combinations of K1 and K2 on the independent datasets.

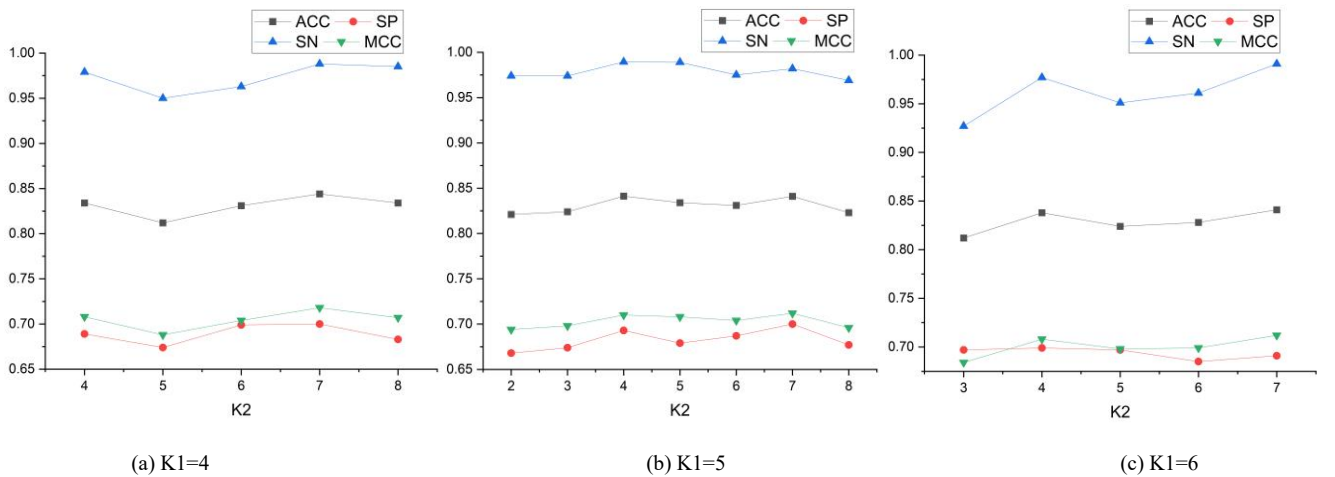


Figure S2. The performance of classifying the enhancer under different combinations of K1 and K2 on the independent datasets.