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计算机科学

基于SVM-RFE的水稻抗病基因筛选

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摘要:

提出一种改进的回归特征消去支持向量机特征选择方法(SVM-RFE)对水稻的抗病基因进行筛选. 实验结果表明: 在预测得到的20个与水稻抗病/敏感相关基因中, 有3个基因与已知的水稻抗病基因紧密相关; 2个基因与已知的水稻抗病基因有一定的相关性. 通过该方法能找到影响水稻生长状态（正常/染病）的基因.

关键词: 回归特征消去支持向量机; 基因筛选; 水稻抗病

Disease Resistance Related Gene Screening in Oryza sativa Using SVM RFE

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Abstract:

An improved support vector machine recursive feature extraction (SVM-RFE) algorithm was used to screen the disease resistance genes. In the 20 important genes, we found that 3 of them have strong relation to the disease resistance as reported and 2 of them have relation to the stress response. It shows that this method can find out which genes could impact the rice growth status (normal/disease). It might provide a guide on finding other unknown rice disease resistance/sensibility genes in biology.

Keywords: support vector machine recursive feature elimination (SVM\ RFE); gene screening rice disease resistance

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