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论文

1BL·1RS特异性分子标记的筛选及其对不同来源小麦品种1RS易位染色体的鉴定

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摘要：

1BL?1RS易位系在我国小麦育种和生产中占有重要地位，快速而准确地鉴定1BL?1RS易位系对小麦品质改良具有重要意义。本研究选用15个1BL?1RS特异性STS、SCAR和RAPD标记及22个1RS染色体上的SSR标记，检测不同来源的1BL?1RS易位系78份以及非1BL?1RS易位系品种10份和黑麦材料3份，其中1BL?1RS易位系包括周8425B及其衍生系36份、兰考906及其衍生系5份、矮孟牛及其衍生系8份和洛类1BL?1RS易位系品种29份。结果表明，7个STS标记、1个SCAR标记、3个RAPD标记和3个黑麦SSR标记可作为鉴别1BL?1RS易位系的可靠分子标记，其中ω-sec-p1/ω-sec-p2、ω-sec-p3/ω-sec-p4、H20和SECA2/SECA3标记最好，扩增效果稳定，重复性好，条带清晰，实验操作简单。周8425B及其衍生系、兰考906及其衍生系、矮孟牛及其衍生系与洛类1BL?1RS易位系的1RS染色体在分子标记检测中没有差异。

关键词： 小麦1BL·1RS易位系 STS标记 SCAR标记 RAPD标记 SSR标记

Evaluation of Molecular Markers Specific for 1BL·1RS Translocation and Characterization of 1RS Chromosome in Wheat Varieties from Different Origins

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Abstract:

For the purpose of discriminating the 1BL?1RS translocation for wheat quality improvement, a total of ten STS, one SCAR and four RAPD markers specific to 1BL?1RS translocations as well as 22 SSR markers located on 1RS were employed to detect 78 accessions of 1BL?1RS translocations, 10 non-1BL?1RS translocations, and three rye materials. The 1BL?1RS translocations included Zhou 8425B and its 36 derivatives, Lankao 906 and its five derivatives, Aimengniu and its eight derivatives, and Lovrin series with 1BL?1RS translocation (29 accessions). With the help of seven STS, one SCAR, three RAPD, and three SSR markers, the 1BL?1RS translocations were identified effectively. Markers ω-sec-p1/ω-sec-p2, ω-sec-p3/ω-sec-p4, H20, and SECA2/SECA3 were the best with stable amplification, clear bands on electrophoresis gel, good repeatability, and simple operation. In the 78 1BL?1RS translocations, no diversities were observed according to the markers located on 1RS.

Keywords: 1BL·1RS translocation of wheat STS marker SCAR marker RAPD marker SSR marker

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