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利用生物化学标记分析鉴定一个抗小麦黄矮病的小麦新种质①

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摘要 利用多个生化标记系统对一个抗上麦黄矮病新种质(HG295)进行了分析鉴定。胚乳水溶蛋白等电聚焦表明,在pH8.0-10.2范围内,中5有3条在其小麦亲本南大2419、克强中均不存在的特异带,其中只有第2条在HG295中得到表达。在HG295中,2Ds控制的那条水溶蛋白带发生了缺失。HG295中2DS的缺失在Per-5与ESt-6电泳分析中进一步得到确证。Est-7酶谱表明,中5与HG295均表达1条来源于中间偃麦草[Thinopyrumintermedium(Host)B arkworth and Dewey or Agropyrum Intermedium(Host)Beauv]的特异带,在HG295中可能发生2DL的缺失。过氧化物的歧化酶分析表明,在HG295中确实发生了 2DL的缺失,并且与中5一样表达1条可能来源于中间偃麦草的特异带。各种结果都表明HG295是一个2E(X)/2D双体异代换系。

关键词 小麦黄矮病 水溶蛋白 过氧化物酶 过氧化物歧化酶 双体导代换系

分类号

Characterization of a Wheat Germaplasm for BYDV Resistance Using Biochemical Mrkers①

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Abstract

Several biochemical marker systems were used to characterize a BYDV resistant wheat germplasm,HG295.IEF phenotype of water soluble protein from endoperm indicated that Zhong 5 expressed three novel bands in the pH range 8.0-10.2,the second of them was also expressed in HG295.Moreover,the 2DS WSP band was missing in HG295. The absence of 2DS in HG295 was also confirmed by Per-5 and Est-6 analysis. The phenotype of Est-7 indicated that the 2DL was possibly missing in HG295 . The absence of 2DL was further confirmed by Superoxide dismutase (SOD-1) phenotype of HG295 ,Moreover,both Zhong 5 and HG295 expressed a novel SOD-1 band other than their wheat background .Various results provided convincing evidences that HG295 is a 2E(X)/2D substitution line.

Key words Wheat yellow dwarf WSP Per SOD Biovalant substitution line

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