

4 份野生瓜类材料抗病性及形态特征和SSR 亲缘关系研究

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The Study of Disease Resistant, Morphological Characteristics and Genetic Relationship Using SSR Markers in 4 Materials of Wild Cucurbit

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摘要 对4份野生瓜类材料进行抗病性鉴定、形态学性状调查、细胞学鉴定及SSR亲缘关系分析。结果表明, 4份野生材料分别为野生红瓜 [*Coccinia grandis* (L.) Voigt], 野生小马泡 (*Cucumis bisexualis* A. M. Lu et G. C. Wang ex Lu et Z. Y. Zhang), 野生栝楼 (*Trichosanthes* L.) 和野生红籽瓜 (*Citrullus lanatus* ssp. *vulgaris* var. *megalaspermus* Lin et Chao), 染色体数依次为 $2n = 24$, $2n = 24$, $2n = 22$, $2n = 22$ 。4份野生材料野生性状明显, 部分食用价值低劣, 难以直接利用, 但其表现出植株生长茂盛, 其中野生红瓜、野生栝楼和野生红籽瓜材料高抗枯萎病和白粉病, 野生小马泡材料感枯萎病和白粉病。从130对SSR引物组合中筛选出15对引物分析供试材料, 共得到271条清晰可辨条带, 其中多态性条带124条, 多态性条带百分率为45.8%。4份野生材料与4种瓜类(甜瓜、黄瓜、西瓜、南瓜)栽培品系间的相似系数为0.62 ~ 0.96。WINBOOT程序聚类分析表明, 野生红瓜、野生小马泡、野生栝楼和野生红籽瓜分别与黄瓜、甜瓜、南瓜和西瓜亲缘关系最近。

关键词: 野生瓜类 形态学性状 抗病性 染色体 SSR 标记 亲缘关系

Abstract: The disease resistance identification, morphological characteristics, cytological identification and genetic relationships were analyzed using SSR markers for 4 materials of wild cucurbit. The results indicated that the 4 wild materials were wild ivy gourd [*Coccinia grandis* (L.) Voigt], wild bisexual cucumis (*Cucumis bisexualis* A. M. Lu et G. C. Wang ex Lu et Z. Y. Zhang), wild snakegourd (*Trichosanthes* L.), wild red-seed using watermelon (*Citrullus lanatus* ssp. *vulgaris* var. *megalaspermus* Lin et Chao), respectively. The chromosome numbers of 4 wild materials were $2n = 24$, $2n = 24$, $2n = 22$, $2n = 22$, respectively. The wild characters of 4 wild materials were obvious, and some of the experimental species can't be used directly because of their poor-fruit quality, but they showed the exuberant vitality. The wild ivy gourd, wild snakegourd, wild red-seed using watermelon were high resistant accessions of the two diseases, and the wild bisexual cucumis was susceptible accession of fusarium wilt and powdery mildew. 15 pairs of SSR primer selected from 130 pairs of primer generated total of 271 bands, 124 (45.8%) of which were polymorphic through the analysis of the investigated accessions. The genetic similarity coefficient among 4 materials of wild cucurbit and 4 kinds of cultivated cucurbit materials including melon, cucumber, watermelon and pumpkin ranged from 0.62 to 0.96. The WINBOOT software showed that the wild ivy gourd, wild bisexual cucumis, wild snakegourd and wild red-seed using watermelon had narrow genetic relationship with cucumber, melon, pumpkin and watermelon, respectively.

Keywords: wild cucurbit, morphological characteristics, disease resistance, chromosome, SSR marker, genetic relationship

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- [1] 苗晗, 顾兴芳, 张圣平, 张忠华, 黄三文, 王焯, 方智远. 黄瓜苗期主要农艺性状相关 QTL 定位分析[J]. 园艺学报, 2012,39(5): 879-887
- [2] 杨丽丽, 庄艳, 王忆, 张新忠, 韩振海. 不同抗性苹果果实受轮纹病菌侵染后亚显微结构的变化[J]. 园艺学报, 2012,39(5): 963-969
- [3] 劳世辉, 盛鸥, 魏岳荣, 易干军, 邓夫平. 香蕉A基因组6个品种的核型分析[J]. 园艺学报, 2012,39(3): 436-442
- [4] 林肖剑, 许学文, 钱红梅, 齐晓花, 徐强, 陈学好. 黄瓜抗白粉病染色体片段导入系的SSR鉴定[J]. 园艺学报, 2012,39(3): 485-492
- [5] 罗双霞, 陈雪平, 申书兴. 大白菜单体的鉴定及其染色体行为研究[J]. 园艺学报, 2012,39(3): 561-566
- [6] 李琳琳, 李天来, 余朝阁, 张抗抗. 钙素对SA诱导番茄幼苗抗灰霉病的调控作用[J]. 园艺学报, 2012,39(2): 273-280
- [7] 邱蓉, 程中平, 王章利. 中国扁桃亚属植物亲缘关系及其演化途径研究[J]. 园艺学报, 2012,39(2): 205-214
- [8] 申二巧, 张成合, 李晓锋, 轩淑欣, 申书兴. 菜薹随体—染色体初级三体的筛选与遗传分析[J]. 园艺学报, 2011,38(8): 1553-1556
- [9] 王冲, 雷家军, 邢桂梅, 姜闯. 君子兰未成熟胚四倍体诱导及染色体数鉴定[J]. 园艺学报, 2011,38(7): 1371-1376
- [10] 齐建勋, 郝艳宾, 朱艳, 吴春林, 王维霞, 冷平. 核桃属种质资源的EST-SSR标记研究[J]. 园艺学报, 2011,38(3): 441-448
- [11] 解静, 罗自生. 1-甲基环丙烯对番茄冷害的影响[J]. 园艺学报, 2011,38(2): 281-281 - 287
- [12] 张芳, 邢世岩, 韩晨静, 唐海霞. 叶籽银杏种质资源染色体核型分析及进化趋势[J]. 园艺学报, 2011,38(12): 2245-2252
- [13] 冯大领, 石学萍, 杨煜, 王彦华, 轩淑欣, 赵建军, 申书兴. 大白菜细菌人工染色体文库的构建及鉴定[J]. 园艺学报, 2011,38(1): 151-151 - 158
- [14] 宋杨, 张春雨, 张志东, 温景辉, 李亚东, 吴林, 刘海广. 黑穗醋栗品种亲缘关系的ISSR分析[J]. 园艺学报, 2011,38(09): 1747-1752
- [15] 郭凌飞, 邹明宏, 杜丽清, 曾辉, 陆超忠, 刘晓静. 利用ISSR分析澳洲坚果的亲缘关系[J]. 园艺学报, 2011,38(09): 1741-1746