

园艺—研究报告

国产决明属生理生化特性与系统分类的关系

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摘要:

以国产决明属(Cassia)4种植物为实验材料,采用愈创木酚法和聚丙烯酰胺垂直板凝胶电泳对其抗逆指标和过氧化物酶(POD)同工酶进行测定,分析其系统树与传统决明属系统分类之间的差异。结果表明:发芽1天的过氧化物酶活性和3天的MDA含量差异显著,可作为探讨其亲缘关系的指标之一。发现POD同工酶带12条,4种决明没有共同拥有的条带,决明属植物的特征性酶带主要分布在b区和a区。与传统分类不同,抗逆指标和同工酶分析结果都表明,槐叶决明(Cassia sophera)与豆茶决明(C. nomame)亲缘关系最近,翅荚决明(C. alata)次之,决明(C. tora)与其他种亲缘关系最远,属于另一支。

关键词: 生理生化特性

Relationship between Biochemistry Characteristics and System Classification of Cassia in China

Abstract:

In order to draw a phylogenetic tree of 4 species of Cassia in China, the study used guaiacol method and polyacrylamide vertical slab gel electrophoresis to test the resistance indicators and peroxidase isozyme, and analyzed the differences between the result and traditional systematics. Peroxidase activity of 1 day, MDA of 3 days significantly differed among species, so it can be used as one of the indicators to explore their genetic relationship. 12 POD enzyme bands were found, characteristic enzyme bands are mainly in b-zone and a-zone. Differed from traditional Systematics, both resistance indicators and POD zymogram revealed that Cassia sophera is closer to C. nomame than C. alata in Systematics, while C. tora belong to another branch.

Keywords: biochemistry characteristic

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参考文献:

[1]中国科学院《中国植物志》编委会.中国植物志(第三十九卷) [M],北京: 科学出版社,1988: 123-140 [2]华东师范大学.[J].上海师范学院.种子植物属种检索表(上册) [M,1982,:- [3]Ongkarn Vanijajiva, Wallie Suvachittanont, Puangpen Sirirugsa.Isozyme analysis of relationships among Boesenbergia (Zingiberaceae) and related genera in Southern Thailand[J].Biochemical Systematics and Ecology,2003,31(5): 499-511 [4]Larisa P.Garkava, Kimmo Rumpunen, Igor VBartish.Genetic relationships in Chaenomeles (Rosaceae) revealed by isozyme analysis[J].Scientia Horticulturae,2000,85: 1-2 [5]Huang Z, Yu T, Su L, et al.Identification of chromosome regions

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associated with seedling vigor in rice[J].Acta Genetica Sinica,2004,31:596-603 [6]孙彩霞,沈秀瑛,谷铁实.不同基因型玉米种子萌发特性与芽、苗期抗旱性的关系[J].种子,2001,(5):32-35 [7]Soltani A, Zeinali E, Galeshi S.Genetic variation for and inter relationships among seed vigor traits in wheat from the Caspian Sea coast of Iran[J].Seed Science and Technology,2001,29:653-662 [8]何家庆,王兴,姚晴晴.聚乙二醇对望江南种子萌发的影响[J].中草药,2009,40(9):1466-1469 [9]张立军,樊金娟.植物生理学实验教程[M].北京:中国农业大学出版社,2007: [10]Bao Liang-xu, Ning Su, Fei Yuan, et al.Influence of transgenic and non-transgenic cottonseeds on the peroxidase isozymes of *Pleurotus ostreatus*[J].Food Control,2007,18(4):281-286 [11]毕辛华,戴心维.种子学[M].北京:中国农业出版社,1993,:302- [12]Karpinska B, Karlsson M, Schinkel H, et al.A novel superoxide dismutase with a high isoelect ric point in higher plant [J].Expression regulation and protein localization. Plant Physiology,2001,126:1668-1677 [13]C.Abdul Jaleel, R.Gopi, B. Sankar, et al.. Studies on germination, seedling vigour, lipid peroxidation and proline metabolism in *Catharanthus roseus* seedlings under salt stress[J]...South African Journal of Botany,2007,73(2):190-195 [14]国家药典委员会.中国药典(一部) [M].北京:化学工业出版社,2005,:98- [15]Crockett CO., Guede-Guina F, Pugh D..Cassia alata and the preclinical search for therapeutic agents for the treatment of opportunistic infections in AIDS patients[J].Cell Molecular Biology,1992,35(5):505-511 [16]全国草品种审定委员.中国审定登记草品种集[M].北京:中国农业出版社,1999-2006:110

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1. 汤照云, 刘 彤, 王艳艳.不同光照条件下新疆小拟南芥可塑性反应的生理生化特性[J]. 中国农学通报, 2006,22(11): 158-158
2. 谢和霞, 罗兴录, 蒙显标, 潘英华, 岑忠用, 邱国桂.不同木薯品种种茎发芽特性研究[J]. 中国农学通报, 2005,21(7): 170-170
3. 赵 敏, 扬风云, 尹会兰.6-BA和保水剂对切花月季瓶插寿命的影响[J]. 中国农学通报, 2004,20(4): 236-236
4. 刘 磊, 刘世琦, 许 莉, 齐连东, 张云起.洋葱抽薹与未抽薹植株生理生化特性对比研究[J]. 中国农学通报, 2006,22(1): 149-149
5. 崔秀敏, 王秀峰, 许 衡.甜椒对不同程度水分胁迫-复水的生理生化响应[J]. 中国农学通报, 2005,21(5): 225-225
6. 窦瑞木 雷清泉 曹克强.中药白鲜皮内生细菌TS-5生化特性及对番茄灰霉病菌的抑制作用[J]. 中国农学通报, 2010,26(13): 324-327
7. 胡秀彩 杨正行 刘欢 张艳华 程超.斑马鱼肠道细菌的分离与生理生化特性[J]. 中国农学通报, 2010,26(24): 412-415
8. 姜一凡, 徐维杰, 廖飞雄, 钱仁卷.花卉空间诱变效应及育种研究进展[J]. 中国农学通报, 2007,23(8): 339-339