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[1]黄姗姗,段玉玺,陈立杰,等.诱导大豆抗逆细菌的筛选及分子鉴定[J].大豆科学,2011,30(02):205-210.[doi:10.11861/j.issn.1000-9841.2011.02.0205]

HUANG Shan-shan,DUAN Yu-xi,CHEN Li-jie, et al.Screening and Molecular Identification of Bacteria Induced Anti-adversity Effect in Soybean[J].Soybean Science,2011,30(02):205-210.[doi:10.11861/j.issn.1000-9841.2011.02.0205]

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诱导大豆抗逆细菌的筛选及分子鉴定

《大豆科学》 [ISSN:1000-9841 /CN:23-1227/S] 卷: 第30卷 期数: 2011年02期 页码: 205-210 栏目:
出版日期: 2011-04-25

Title: Screening and Molecular Identification of Bacteria Induced Anti-adversity Effect in Soybean

文章编号: 1000-9841 (2011) 02-0205-06

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关键词: 细菌 (KeySearch.aspx?type=KeyWord&Sel=细菌); 大豆胞囊线虫 (KeySearch.aspx?type=KeyWord&Sel=大豆胞囊线虫); 根腐病 (KeySearch.aspx?type=KeyWord&Sel=根腐病); 诱导抗性 (KeySearch.aspx?type=KeyWord&Sel=诱导抗性); 16SrDNA (KeySearch.aspx?type=KeyWord&Sel=16SrDNA)

Keywords: Bacteria (KeySearch.aspx?type=KeyWord&Sel=Bacteria); Heterodera glycines (KeySearch.aspx?type=KeyWord&Sel=Heterodera glycines); Root rot (KeySearch.aspx?type=KeyWord&Sel=Root rot); Induced resistance (KeySearch.aspx?type=KeyWord&Sel=Induced resistance); 16SrDNA (KeySearch.aspx?type=KeyWord&Sel=16SrDNA)

分类号: S 565.1

DOI: 10.11861/j.issn.1000-9841.2011.02.0205 (http://dx.doi.org/10.11861/j.issn.1000-9841.2011.02.0205)

文献标志码: A

摘要: 为筛选出既能诱导大豆抗寒又能抗胞囊线虫的细菌,将室内初筛诱导大豆抗寒的14株细菌菌株发酵液对大豆进行种子包衣后播种于辽宁省和黑龙江省大豆胞囊线虫重病田,然后调查大豆苗期生长以及胞囊线虫发生情况,并对表现优秀的菌株进行分子鉴定。结果表明: Sneb69、Sneb82、Sneb179和Sneb218发酵液对大豆苗期生长有明显抗寒作用;从根上胞囊量、土中胞囊量、根内线虫量3个方面调查发现对大豆胞囊线虫有显著的抑制作用,且在不同地区不同重复中均保持稳定的抗病能力;Sneb82和Sneb218对根腐病有一定的抑制效果;从6个大豆生理指标上与对照进行比较,结果差异明显,证明菌株Sneb69、Sneb82、Sneb179、Sneb218为良好的抗逆菌;经16SrDNA序列同源性分析,初步判定菌株Sneb69、Sneb82、Sneb218为巨大芽孢杆菌(Bacillus megaterium),Sneb179为铜绿假单胞菌(Pseudomonas aeruginosa)。

Abstract: To provide theoretic base for screening of bacteria induced anti-adversity effect from bacteria induced cold resistance in soybean, soybean seeds coated by bacteria were grown on farmland where Heterodera glycines occurred seriously in Liaoning and Heilongjiang province with liquid nutrient medium treatment as control, and then investigated the growth of soybean seedlings and the cyst nematode occurrence, and performed molecular identification of outstanding strains. Sneb69, Sneb82, Sneb179 and Sneb218 showed significant cold resistant effect for soybean seedlings. It was also showed that bacteria could control soybean cyst effectively as the treatment of soybean coated by strain Sneb69, Sneb82, Sneb179 and Sneb218 showed soybean cyst control effect by analyzing the number of cyst on the root, the number of cyst in the soil and the number of soybean cyst nematodes in the root. In different district, bacteria treatments showed stable resistance to adverse environment, it proved Sneb69, Sneb82, Sneb179 and Sneb218 would become the potential agents to resist adverse environment. Sneb82 and Sneb218 showed inhibitory effect on root rot. Six physiological indicators of soybean under bacteria strain showed better performance compared with the control, indicating strain Sneb69, Sneb82,

Sneb179 and Sneb218 had good adversity tolerance ability. 16SrDNA sequence analysis showed Sneb69, Sneb82 and Sneb218 were related to *Bacillus megaterium* and Sneb179 were related to *Pseudomonas aeruginosa*.

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备注/Memo 基金项目: 公益性行业(农业)科研专项资助项目(200903040-03); 国家现代农业产业技术体系岗位科学家专项资助项目。
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更新日期/Last Update: 2014-09-11

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