

北京动物园动物肠道菌携带抗药性质粒的分离

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摘要 分离 254种动物的肠道菌, 其中兽类127种、鸟类78种、爬行类33种、两栖类4种、鱼类12种。用5种抗生素进行抗性测定后, 分离到271株抗性菌株。用接触转移实验测定, 其中41株的抗性可以转移, 抗性不能转移的菌株经SDS消除实验测定, 结果有154株的抗性可以消除。将抗性能转移的菌株和10%的抗性不能转移但经SDS可以消除的菌株, 用抽提DNA或制备溶菌物进行DNA琼脂糖凝胶电泳测定, 除染色体带外, 均有质粒带, 说明这些可转移和消除的抗性都是由抗药性质粒所控制。其中P族质粒4个, 能启动染色体转移的质粒4个。

关键词

分类号

Isolation of the Drug Resistant Plasmids of the Animal Intestinal Bacteria in Beijing Zoo

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Abstract

This paper deals with the results of isolating the drug resistant factors (R factors) of the animal intestinal bacteria in Zoo.

We have isolated the intestinal bacteria of 254 species of the animals.Among them,127 species were from beasts,78 species from birds,33 species from reptile,4 species from amphibian,and 12 species from fish.

Identifying with five kinds of antibiotic,we have obtained 271 strains of the drug resistant bacteria,detecting with the conjugative transfer experiment, we have got 41 strains of the drug resistant transferable bacteria.Among the intransferable strains of the drug resistance curing with SDS,the drug resistance of 154 strains were curable.It is confirmed that these drug resistance transferable or curable were all determined by the drug resistant plasmids.The highest frequency of conjugative transfer of the 41 trans-ferable strains was 10-2,the lowest frequency was 10-6 .The frequency of curinv of the curable bacteria ordinary was 2% (The highest frequency was 80% and the lowest was 0.1%).Identifying with the bacterium classification,among the 41 strains of the transferable bacteria,28 strains were E.coli,1 strain was E.intermedium,6 strains were P.inter-medium,1 strain was S.enteritidis,1 strain was Pr.vulgaris and 4 strains were on named.

Among the 154 strains.of the curable drug resistance determined by the intransferable plasmids,76 strains were E.coli,3 strains were E.intermedium,7 strains were P.aerogenoides,5 strains were P.coliforme,1 strain was P.intermedium,1 strain was Paracoloba-ctrium aerogenoides Borman ,stuart at wheeler,3 strain were Pr.vulgaris,4 strains were Pr.lettgeri,10 strains were S.enteritidis,4 strains were Scholeraesuis,4 strains were S.gallinarum,14 strains were Citrobacter,6 strains were Shigella,3 strains were Alcaligenes fecalis,3 strains were Pseudomona aeruginosa,1 strain was Providencia and 9 strains were no named.The plasmids of the 4 strains are P family plasmid.The plasmid of the other 4 strains can mobilize the transfer of the chromosome.The frequency of recombination was 2.2×10^{-7} .

Key words

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