the relationship between plasmid and some antibotics resistance in pseudomonaeruginosa

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Pe. ”erug.inosa has been considered to be one ofthe causes of serious diseases in man and it infrequentlyis the cause of infection in normal individuals unless they have suffered from ma~~r trauma or burns.It is involved in respiratory. cutaneous and disseminatedinfections in individuals who have defective host de f,mses of cutaneous batTLers, granulocytes or a mmuno-:Several plasmids encoding resistance to one or more. antibioti.; could be identified from cl a n i ce lisolates Ps. aeruginosd.The present investigation was carried out in order to clarify the 400. and 50Ug/ml respectively and for isolate no 5 were; 12.5,25. 100, 200 and 100 ~g/ml respectively.Single colonies of isolate no. 1 c;howed greatvariations in their levels of resistance to the differentantibiotics indicating that the resistant genes arelocated in different plasmids. Isolate no. 2 singlecolonies were similar in their resistance to gentamicinlevels indicating chromosomal mode of inheritance.In isolate no. 3. Km and Sm resistant genes were encodedby the same plasmids. Isolates no. 4 and 5 singlecolonies showed different levels of resistance to. Km.SOl and Gm with great agreement for resistance levelsindicating the existence of the genes in the sameplasmids. The percentages of E. coli k12 transformants whichresist 10 ~g/ml of each antibiotics ranged from 11.75 when plasmid DNA was used as donor. The highestlevels of resistance appeared for E. coli. k12 transformantsto streptomycin followed by those; Km. Gm and Tm respectively.Transformation of the Gram positive S. aureus andB. eubt il is with plasmid DNA isolated from Ps. aeruginosawas unsuccessful.E. coli k12 ~ransformants indicated that theresistance to fun which can be acquired with a plasmid is probably 10 ~g Km/ml medium. Theof 50 ~g Km resistance can be obtained from dose of plas~id as no. 20. 30 or 40 ~g Km/ml lowest single level doubler”,o,isLance could be ”btained. This increase in thedouble dose had been attributed to gene interactionsand c;~n~ regulatory mechanisms. Tree plasmids wererespo”sible for the level of kanamycin resistancereclched 100 I1g/ml, 4 plasmids for the level of 200 I1g/ml. One plasmids tively.Each plasmid gave a resistance level of I1g medium. The possibility of gene interactions canbe eXIsted. the same c.lppeClredfor tobramycin.Positive correlation between bilharzia.plasmid was estimated to give 50 I1g Sm/ml levels, 2 for the level of 100 I1g, 3 and 4for the levels of 150 and 200 I1g/ml res~ecl:~ esistance Gm/ml also cancerhigh bacterial counts and high phage contents and noclear correlation was noticed between phage contentsand the resistance of any of the antibiotics studied.In conclusion plasmids play an essential role inantibiotics resistance. To

solve this problem it isessential to look for plasmid curing. Curing can occurspontaneously during growth and cell divisions or followingtreatments with some agents such as elevatedtemperatures. acridine hydrochloride. ascorbic acid andthe bes~ ~herapeutic tz”eatnents might be through safeva cci net ioris.