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## **Insights on Klebsiella pneumoniae biofilms**

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## Insights on *Klebsiella pneumoniae* biofilms

*Klebsiella pneumoniae* is a gram negative facultative anaerobic bacilli causing a wide spectrum of infections responsible for considerable degree of morbidity and mortality. Biofilms are microbial derived communities consisting of cells that are irrevocably adhered to a substratum or to each other. Biofilm production in *K.pneumoniae* is an important virulence factor. Besides, multi-drug resistance especially due to Extended Spectrum Beta Lactamase(ESBL) has led to persistent infections especially in patients with medical devices. The major problem with biofilm infections is the difficulty in their elimination thereby causing Device Related infections(DRIs). Objectives of the study: 1. To detect biofilm production in *K. pneumoniae* isolated from respiratory tract infections. 2. To compare antibiogram and biofilm production of ESBL and Non-ESBL strains of *K. pneumoniae* isolated from respiratory tract infections. Materials and methods: *K.pneumoniae* isolated from Respiratory tract infections were taken for the study. Identification of *K. pneumoniae* strains and antibiotic sensitivity was done by Kirby Bauer disc diffusion method and Vitek 2 compact system. Biofilm production by modified microtitre plate method of O'Toole and Kolter with and without Endotracheal tubes and quantified by colony counting, Spectrophotometry and by Scanning Electron Microscopy (SEM): Conclusion: All the strains of *K. pneumoniae* causing respiratory tract infections were biofilm producers. Although ESBL producers showed increased OD570 values, the difference in biofilm production between ESBL and Non-ESBL was not statistically significant. The present study may help in assessing the seriousness of drug resistance caused by biofilm formation in *Klebsiella pneumoniae* and adopt various strategies to combat the increasing incidence of antibiotic resistance.