Reviewer's report

Title: Gene expression changes linked to antimicrobial resistance, oxidative stress, iron depletion and retained motility are observed when Burkholderia cenocepacia grows in cystic fibrosis sputum

Version: 1 Date: 15 July 2008

Reviewer: Leo Eberl

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Review

In this paper a novel Burkholderia cenocepacia microarray was designed on the basis of the genome of strain J2315. This microarray was used to identify genes that are differentially expressed in CF sputum. Similar work was previously done only with P. aeruginosa using UV-irradiated of artificial CF sputa. In the present work non-sterilized sputum samples were used for the first time. The identified genes show that functions related to iron uptake, protection against reactive oxygen and nitrogen species, secretion and motility and antimicrobial resistance are among the most altered in sputum. Some of the identified genes encode for known virulence factors (confirming the quality of the approach) while others are new and suggest novel pathways. This is a very helpful list of genes that is of great interest for scientist in the field and I am sure that it will lay the basis for further more in depth going analyses. Moreover, the paper also describes for the first time the B. cenocepacia chip in detail and shows that it is an extremely valuable research tool. The authors employed quantitative PCR to verify the results from the transcriptome analysis for some of the identified genes. Overall, this is a straightforward paper that reports on a thoroughly performed transcriptome analysis. The data are well presented and will be of great value for further investigations.