

**P21 TAXONOMY OF THE *ACINETOBACTER CALCOACETICUS* –  
*ACINETOBACTER BAUMANNII* COMPLEX WITH THE PROPOSALS OF  
*ACINETOBACTER PITTII* SP. NOV. (FORMERLY GENOMIC SPECIES 3) AND  
*ACINETOBACTER NOSOCOMIALIS* SP. NOV. (FORMELY GENOMIC SPECIES 13TU)**

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The *A. calcoaceticus*-*A. baumannii* (ACB) complex includes *A. calcoaceticus*, *A. baumannii*, and four genomic species with provisional designations, i.e. gen. sp. 3, gen. sp. 13TU, gen. sp. ‘close to 13TU’ and gen. sp. ‘between 1 and 3’. Studies have shown that gen. sp. 3 and 13TU are medically important groups commonly isolated from hospitalized patients. The present study investigated intra- and inter-species diversity of the ACB complex with the aim to propose formal species names for gen. sp. 3 and 13TU. 78 strains of the ACB complex were studied, which were allocated to *A. baumannii* (n=25), *A. calcoaceticus* (n=11), gen. sp. 3 (n=18), gen. sp. 13TU (n=20), gen. sp. ‘close to 3TU’ (n=2) or gen. sp. ‘between 1 and 3’ (n=2). Strains were selected to cover the breadth of the known intra-species diversity and were investigated by AFLP, amplified rDNA restriction analysis and by 45 nutritional or physiological tests. Subsets were studied by 16S rRNA gene (n=21) and *rpoB* sequence analyses (n=47), multilocus sequence analysis (MLSA) (n=39) or had been classified previously by DNA–DNA reassociation (n=35). 190 strains representing other *Acinetobacter* species were also included for comparative analysis.

Using AFLP, the species of the ACB complex formed well-separated clusters at the species cut-off level of 50 % similarity. The results of 16S rDNA and *rpoB* analyses, and MLSA supported the monophyly and genomic distinctness of the ACB complex and each of its individual species. The only exception was *A. baumannii* which clustered separately from the other ACB species using 16S rRNA sequence analysis. Phenotypic analysis corroborated both the metabolic versatility of the ACB complex and its phenotypic distinctness from the other *Acinetobacter* species. Although no phenotypic features were identified that could unambiguously differentiate between the ACB complex species, uneven distribution of some properties or their combinations among the species was found. While the growth at 44°C and inability to assimilate malonate, L-tartrate and citraconate were distinguishing features for most gen. sp. 13TU strains, the vast majority of the gen. sp. 3 strains could be separated from the other species by the ability to assimilate L-tartrate and to grow at 41°C but not at 44°C.

Considering the genomic distinctness and medical relevance of gen. sp. 3 and 13TU, the names *Acinetobacter pittii* sp. nov. and *Acinetobacter nosocomialis* sp. nov. are proposed for these genomic species, respectively. The type strain of *A. pittii* sp. nov. is LMG 1035<sup>T</sup> (= ATCC 19004<sup>T</sup>) and that of *A. nosocomialis* sp. nov. is LMG 10619<sup>T</sup> (= CCM 7791<sup>T</sup>).