Cystic fibrosis is one of the most common autosomal recessive hereditary disease. Nowadays, people, with this disease, because early diagnosis and treatment of other associated symptoms a better prognosis than a few years ago. CF is a disease that is subject to mutation of the CFTR (Cystic Fibrosis Transmembrane Conductance Regulator) on the seventh chromosome. Defect in the CFTR protein leads to failure of resorption and secretion of electrolytes chloride channel and thereby creating viscous mucus in the lungs, which is the main cause of chronic bacterial infections of the lower airways. Among the most common pathogens causing severe respiratory infections in CF patients include: Staphylococcus aureus, Pseudomonas aeruginosa, Burkholderia cepacia complex. In patients with CF is now showing in the airways of new bacterial species whose biological properties are not yet known and their role in the etiopathogenesis of the disease and epidemiology are not exactly known. In these days their detection is used by specific amplification methods, or sequencing of the 16S rRNA gene. Emerging pathogens such as the genus Pandoraea and Inguilinus that belong non-fermenting Gram-negative groups in the rods, and therefore are often exchange for other bacterial species that are phenotypically similar to them. In the experimental part I introduced selective cultivation and genotypic methods using primers already known and proposed the original primers for the identification of genus and species reference strains and clinical isolates Pandorea sp. and Inquilinus sp., allowing a specific detection in patients with CF.