Comparative study between traditional methods and new technique (dna based technology method) in the diagnosis of mycobaacterium tuberculosis

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The capacity of organisms to respond their osmotic environments is an important physiological process that determines their abilities to survive in a variety of habitats. The primary response of bacteria to exposure to a high osmotic environment is the accumulation of certain solutes, K+, glutamate, trehalose, proline, and glycinebetaine, at concentrations that are proportional to the osmolarity of the medium. The supposed function of these solutes is to maintain the osmolarity of the cytoplasm at a value greater than the osmolarity of the medium and thus provide turgor pressure within the cells, in other cases microorganisms can restore their osmotic implance by specific enzymes synthesis, as our enzyme Choline dehydrogenase (CHDH) which play a dual role assimilating carbon and nitrogen from choline or choline precursors and producing glycine betaine, which is a solute that able to restore and maintain the osmotic balance of living cells protecting them against the high-osmolarity stress in theirsurrounding medium.As shown in this thesis (CHDH) enzyme was coded by betA gene which found at Ps. aeruginosa species , first of all the bacteria was isolated by Acetamide media which was a specific media for growing Ps.aeruginosa and was well identified by some physiological tests as (Gelatin hydrolysis, pyocyanine pigments production, Casien hydrolysis and egg yolk reaction) then the betA gene isolated using specific primers and was found the gene size at its expected size 1.7 Kb after that the betA gene was transformed using pGEM-T-Easy vector into E.coli bacterium after that transformation process was evaluated by several methods:-- White colony was selected (positive colony) and proceeded a PCR reaction with specific primers of betA gene, found specific band at 1.7 Kb.CONTROL OF The capacity of organisms to respond their osmotic environments is an important physiological process that determines their abilities to survive in a variety of habitats. The primary response of bacteria to exposure to a high osmotic environment is the accumulation of certain solutes, K+, glutamate, trehalose, proline, and glycinebetaine, at concentrations that are proportional to the osmolarity of the medium. The supposed function of these solutes is to maintain the osmolarity of the cytoplasm at a value greater than the osmolarity of the medium and thus provide turgor pressure within the cells, in other cases microorganisms can restore their osmotic implance by specific enzymes

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