

Abstract

The bacterial genus *Mycobacterium*, is an important genus belonging to the phylum *Actinomycetota*. It includes both saprophytic and obligately parasitic species, such as *Mycobacterium tuberculosis*. The genus *Mycobacterium* has the ability to form biofilms. Biofilms are multicellular and three-dimensional communities of microorganisms that are encased in an extracellular matrix. Involved in its formation are glycopeptides, short-chain mycolic acids, monomeromycolyl diacylglycerol, biofilm-associated genes and chaperonins such as GroEL and isonitrile lipopeptide synthetase. Biofilms provide mycobacteria with significant resistance, for example to chemicals, protection, for example from the host immune system, and are the cause of antibiotic resistance. Biofilms are important pathogenicity factors in medicine due to the action of antibiotic resistance, but also due to the action of chronic infections, catheter and implant colonisation, due to immunomodulatory effects, and also greatly complicate diagnosis by masking the presence of bacteria. The toxin-antitoxin system also plays a role in the antibiotic resistance of mycobacteria. Biofilms can be detected by many methods such as various microscopic methods such as confocal laser scanning microscopy, staining techniques such as cellulose staining, and even mass spectrophotometry.

Key words: *Mycobacterium*, biofilm, resistance, *Mycobacterium tuberculosis*, antibiotics, adhesion, nontuberculous mycobacteria