

1. Record Nr.	UNINA9910688360103321
Titolo	Focus on Bacterial Biofilms // edited by Theerthankar Das
Pubbl/distr/stampa	London : , : IntechOpen, , 2022
Descrizione fisica	1 online resource (392 pages)
Disciplina	579.17
Soggetti	Biofilms
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	<p>1. Introductory Chapter: Highlighting Pros and Cons of Bacterial Biofilms -- 2. Bacterial Biofilm and the Medical Impact -- 3. Biofilm Formation by Pathogenic Bacteria: The Role of Quorum Sensing and Physical -- Chemical Interactions -- 4. Biofilm and Quorum Sensing in Helicobacter pylori -- 5. Mechanism Involved in Biofilm Formation of Enterococcus faecalis -- 6. Biofilm Development in Gram-Positive and Gram-Negative Bacteria -- 7. Molecular Pathogenesis and Clinical Impact of Biofilms in Surgery -- 8. Bacterial Biofilm: Contribution to AMR and Approaches to Tackle -- 9. The Mechanisms of Bacterial Biofilm Inhibition and Eradication: The Search for Alternative Antibiofilm Agents -- 10. Approaches to Enhance Therapeutic Activity of Drugs against Bacterial Biofilms -- 11. Development of Antibiofilm Substances by Endophytic Microorganisms with an Emphasis on Medicine -- 12. Natural Products as Antibiofilm Agents -- 13. Efficacy of Radiations against Bacterial Biofilms -- 14. Antifouling Strategies- Interference with Bacterial Adhesion -- 15. Curcuma Xanthorrhiza Roxb. An Indonesia Native Medicinal Plant with Potential Antioral Biofilm Effect -- 16. Effect of Biofilm on Production of Poultry -- 17. Chronic Intraocular Leptospiral Infection Relying on Biofilm Formation inside the Vitreous Cavity Leads to Recurrent Uveitis in Horses -- 18. Sub-Aerial Cyanobacteria: A Survey of Research with Antimicrobial Properties for Pharmaceutical Approaches -- 19. Growing Environmental Bacterium Biofilms in PEO Cryogels for Environmental Biotechnology Application.</p>

Bacterial biofilms are colonies of bacterial cells embedded in their self-produced matrix composed of polysaccharides, DNA, and proteins. They protect bacterial cells against antibiotics, antibacterial agents, soaps and detergents, and shear stress. Some of the most common biofilm-associated infections in humans include urinary tract infections, infection of wounds and surgical sites, diabetic foot ulcers, dental caries (tooth decay) and gingivitis (gum inflammation), ventilator-associated infections, sinusitis, microbial keratitis, secondary infection related to Covid-19 and other viral infections, and so on. Bacterial resistance to common antibiotics (e.g., penicillin, gentamycin, erythromycin, ciprofloxacin, etc.) is driving us to a catastrophic failure of our health systems. Strategies to develop novel antibacterial agents and technology must be prioritized to combat and eradicate biofilms and their associated challenges. This book provides a comprehensive overview of biofilms with chapters on bacterial virulence factors, quorum sensing in bacteria, antimicrobial resistance in bacteria, strategies to develop new antibacterial agents, and much more.
