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| * **Microbial Control**    + - * **Microbial infection & pathogenicity**       * *In vitro* study of new compounds against bacteria, yeasts and molds       * Evaluation of new compounds against bacterial biofilm       * *In silico* & *in vitro* study of new compounds against bacterial quorum-sensing network       * Using bacteriophages/phage derivatives against resistant bacteria       * **Microbial control of pharmaceuticals**       * Microbial enumeration tests of non-sterile products       * Tests for specified microorganisms of non-sterile products       * Antimicrobial effectiveness testing       * Measurement of antimicrobial activity (determination of MIC & MBC, and antibiotics assay)       * Designing and evaluating of disinfectants       * Designing and evaluating of mouthwashes       * **Fermentation**       * Fermentation of probiotics       * Optimization & production of active metabolites * **Pharmaceutical Control**   + - * **Modification of pharmaceuticals and dosage forms**       * Formulation, shelf-life and kinetic calculations of dosage forms       * Interaction of drugs and macromolecules (complexes) and study of their characteristics and kinetics to improve drug properties       * Use of modern drug delivery systems (nanoparticles) in semi-solid dosage forms in order to improve their properties and stability       * Preparation of metal nanoparticles and metal oxides and their use in formulations for pharmaceutical, stability and kinetics studies       * Bioequivalence studies of generic products * **Validation**    + - * **Method validation**       * Validation of analytical methods of pharmaceuticals |