TRMD 7300 Mechanisms of Pathogen Intervention

Professor: Ahmed Aly, PhD

Credits: 2

Semester(s) Offered: Fall

Course Description:

This course provides an advanced foundation of knowledge about the selection and mechanisms of action of different interventions against important viruses, bacteria and unicellular parasites of public health significance. The course describes how drugs, vaccines and other intervention agents reach their cellular targets and how they act in harmony with the host immune system to control or eradicate the pathogen, inside the human or the arthropod hosts.
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1. Outline the use of modern biology approaches to identify intervention targets.
2. Characterize the types of vaccines, vaccine components and pathogen immune evasion mechanisms.
3. Characterize the molecular and biochemical principles of chemotherapy against pathogens and the development of drug resistance.
4. Evaluate the different mechanisms of action of vaccines against viruses, bacteria and protozoan parasites.
5. Evaluate the different mechanisms of action of chemotherapy drugs against viruses, bacteria and protozoan parasites.
6. Characterize new vaccine or chemotherapy approaches to combat pathogens.
7. Outline the intervention strategies that target the pathogen within the vector or target the vector itself.