Describe the differences between drugs and biologicals

Describe the differences between drugs and biologicals

- Drugs are produced by chemical processes. Biologicals are produced by biological processes.
- Drugs are small molecules, which can be made with fidelity and purity. Whereas, biologicals are much bigger and more complex, thus having a larger diversity in each structure.

Why is vaccinia (cowpox) from Dr Jenner a live attenuated vaccine (LAV) for human?

Why is vaccinia (cowpox) from Dr Jenner a live attenuated vaccine (LAV) for human?

- It is attenuated (less virulent), because it is adapted to its natural host which is a cow. The similarity between cow and human is big enough for this virus to make it grow (replicate) on human tissue but at a slower rate .

Why does vaccination with cow pox provide protection against smallpox?

- Vaccinia (cowpox) and variola (smallpox) have **similar antigenic** properties. Vaccina evokes an immune response in human, which therefore provides protection against variola.

What is a killed/inactivated vaccine

- Give an example

Killed/inactivated vaccine

- An inactivated/killed vaccine is a vaccine consisting of either whole viruses or bacteria, that have been killed using physical (heat, or radiation, drying out) and chemical methods (usually formalin). The pathogens are inactivated and cannot divide, but the pathogens maintain some of their integrity (antigenic properties) to be recognized by the immune system and evoke a protective immune response
- Example: Rabies vaccine

Transmission of infectious diseases

- By contaminated water?
- By insects?
- By infected body fluids?

Transmission of infectious diseases

- By contaminated water?

  Cholera

- By insects?

  Black death,

  flies bite and transmit infectious bacteria

- By infected body fluids?

  Smallpox