

Name _____

Battling Viral Infections: Challenges and Solutions

Short Answer Key

1. Antiviral resistance occurs when viruses develop mechanisms to resist the effects of antiviral medications, making them ineffective in treating infections. It is a challenge because it limits treatment options and can lead to treatment failure.
2. Broad-spectrum antivirals are preferable because they can target a wide range of viruses, making them more effective in treating emerging viral threats and reducing the need for multiple medications.
3. Viral mutation and variability create challenges in vaccine and drug development by generating genetic diversity among viral strains, which can reduce the effectiveness of vaccines and antiviral drugs over time.
4. Vaccine development for certain viruses is difficult due to factors such as high mutation rates, antigenic variability, and the need for long-term protection against diverse strains. These challenges require extensive research and development efforts to overcome.
5. The emergence of novel viruses presents challenges in public health due to their potential to cause widespread outbreaks, strain healthcare systems, and disrupt economies. Timely detection, rapid response, and international collaboration are essential in addressing these threats.

