

## Enzyme Structure/Function - Drug Inhibitors

This case explores how enzyme structure/function has a direct effect on how drugs interact with their microbial targets.

**Due Date:** \_\_\_\_\_

**Case Opener:** Zac has been infected with HIV for 4 years. His white-cell count was originally fairly stable, but has been decreasing steadily for the last 6 months. His physician has recommended 2 different medications, but before he decides which of them to go on - he wants your opinion. His doctor has recommended either Maraviroc or Darunavir in combination with his other HIV drugs. These drugs act on different parts of HIV infection, and in two different ways. *Answer the following questions below - feel free to use Wikipedia and your book to help you answer these questions.*

### Case Questions:

\* Define the following in your own words:

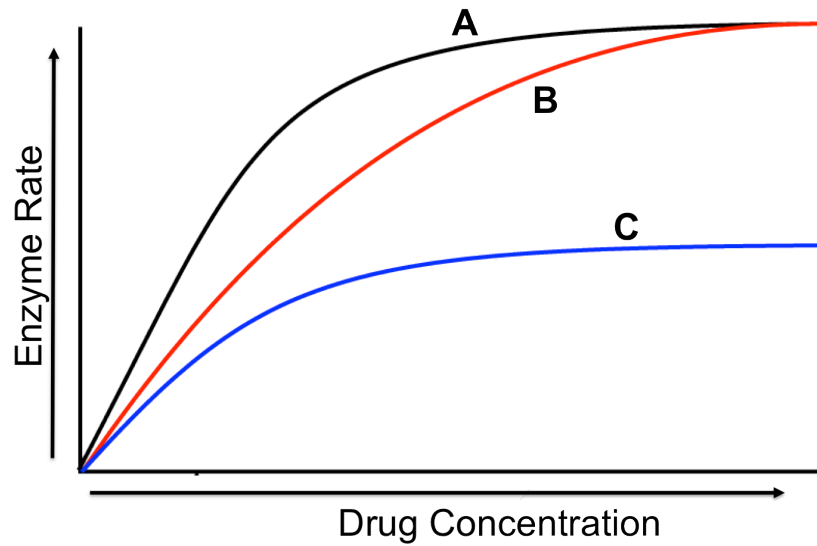
Allosteric inhibition:

Competitive inhibition:

\* Briefly describe how Maraviroc acts to mitigate HIV infection.

\* Briefly describe how Darunavir acts to mitigate HIV infection.

\*The following graph shows the inhibition of HIV replication for each of these drugs is shown below. A - no inhibitor // B - Darunavir // C - Maraviroc



Which of these drugs show competitive inhibition? Explain your answer.

Which show allosteric inhibition? Explain your answer.

\* One of the other medications used to treat HIV is AZT.  
How does AZT inhibit HIV replication?

Is AZT a competitive or allosteric inhibitor?

Why do you think it is this type of inhibitor?