

Exercises KJM 5230, No. 4, Nov. 30. 2010

Left overs from last week?

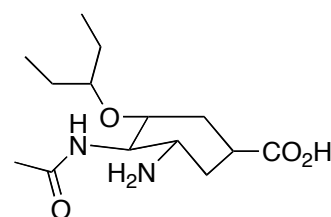
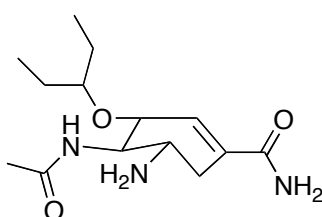
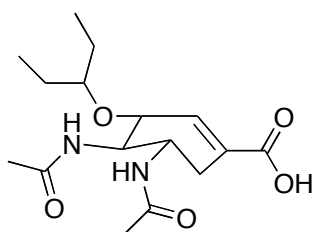
1.

Discuss replication of different classes of DNA and RNA viruses.

2.

a) Explain the mode of action for neuraminidase inhibitors

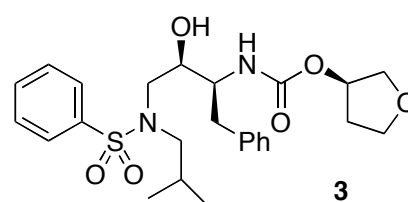
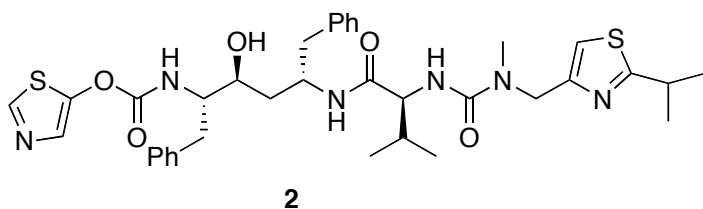
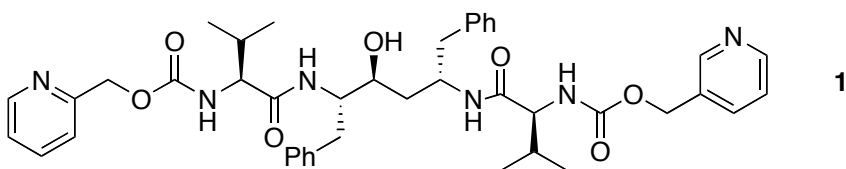
b) Would you expect the following compounds to be good neuraminidase inhibitors? Explain.



3.

a) Explain the mode of action for HIV-protease inhibitors.

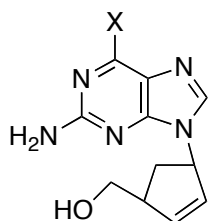
b) How does the HIV-protease inhibitors below apply with "Lipinski rule of five"? (see Exercises No. 2).



c) The pyridine rings in comp. **1** makes this comp. readily metabolized (oxidation). Suggest mechanism / enzyme system / metabolic product(s).

4.

- a) Why are essentially all antiviral nucleoside analogs pro-drugs?
- b) Discuss structural relationship(s) between NRTIs
- c) Suggest more lipophilic pro-drugs of carbovir (except abacavir) and enzymes necessary for activation
- d) Abacavir may be regarded as a more lipophilic prodrug of carbovir. Suggest metabolic pathway



X=--OH, Carbovir
X= -NHCyclopropyl: Abacavir