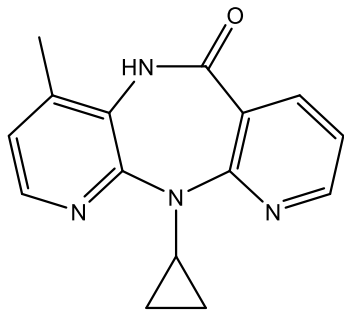
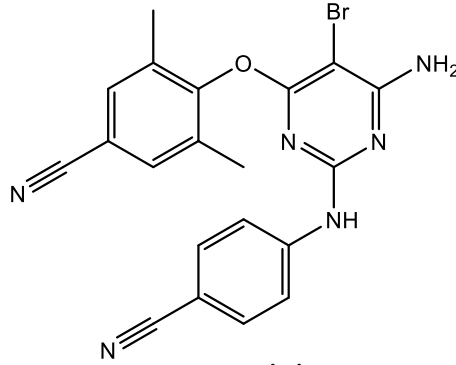


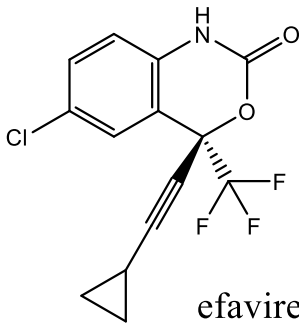
1. Choice of drug family is **HIV-1 non-nucleoside reverse transcriptase inhibitors**.



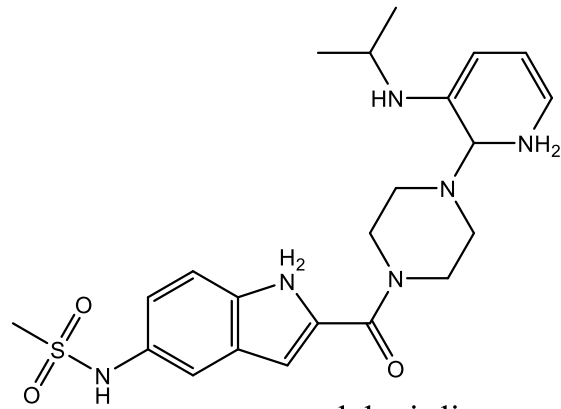
nevirapine



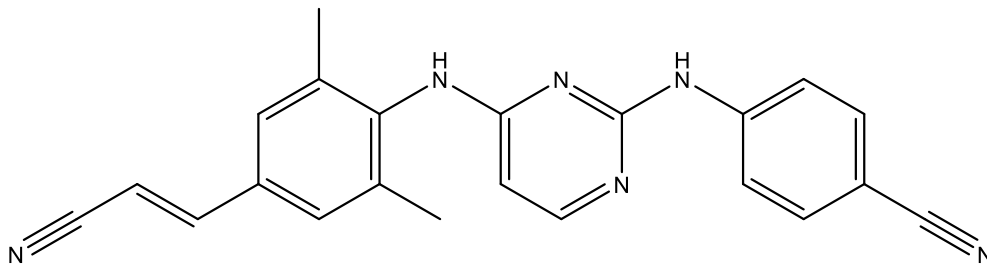
etravirine



efavirenz



delavirdine



rilpivirine

2. The biological target of this drug family is HIV-1 reverse transcriptase (which is the enzyme). The nucleoside reverse transcriptase inhibitor (NNRTIs) targets the enzyme that is responsible for the viral DNA that produces the HIV-1 virus. NNRTIs non-competitively inhibits the reversible transcriptase, which stops the production of viral DNA. This means NNRTIs block viral DNA replication. This drug family is one of the first anti- HIV therapeutics to be marketed to treat HIV-1.

PDB ID: 3MEC = reverse transcriptase with inhibitor—etravirine

Reference:

1. Lansdon, E. B.; Brendza, K. M.; Hung, M.; Wang, R.; Mukund, S.; Jin, D.; Birkus, G.; Kutty, N.; Liu, X. Crystal Structures of HIV-1 Reverse Transcriptase with Etravirine (TMC125) and Rilpivirine (TMC278): Implications for Drug Design. *Journal of Medicinal Chemistry* **2010**, *53* (10), 4295–4299.