

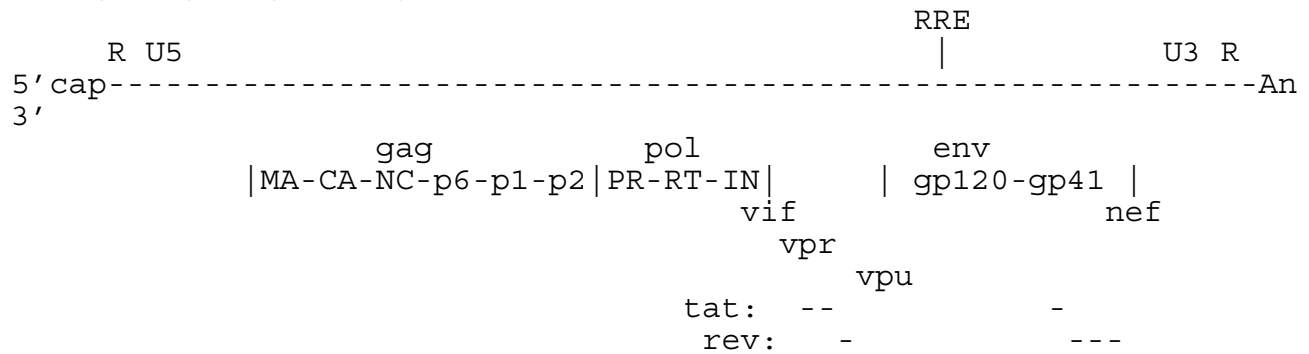
HIV-1 AND AIDS

- I. INTRODUCTION
 - A. RETROVIRUSES--RETROVIRIDAE
 - 1. MORPHOLOGY
 - 2. LIFE CYCLE
 - a. GENOMIC RNA --> dsDNA
 - b. dsDNA --> HOST GENOME
 - c. HOST GENOME --> mRNA (GENOMIC RNA)
 - 3. CLASSIFICATION BY GENERA
 - a. MAMMALIAN C TYPE VIRUS (MuLV) ONCORNAVIRUSES
 - b. MAMMALIAN B TYPE VIRUS (MMTV)
 - c. TYPE D VIRUS (M-PMV, SRV)
 - d. ALV-RELATED VIRUS (ALV, **RSV**)
 - e. HTLV-BLV
 - f. SPUMAVIRUS (HUMAN, SIMIAN, FELINE FOAMY V)
 - g. LENTIVIRUS
 - 1.) PRIMATE (SIV, **HIV-1**, **HIV-2**)
 - 2.) VISNA
 - 3.) EIAV, FIV, BIV
- II. HISTORY
 - A. FIRST APPEARANCES
 - B. FIRST RECOGNIZED
 - C. VIRAL ETIOLOGY
 - 1. ANTIGENS PRODUCED--TESTS-ELISA & WESTERN BLOT
 - 2. SEQUENCED
 - 3. MOLECULAR BIOLOGY
 - D. TREATMENTS--AZT, ddI, ddC & PROTEASE INHIITORS (11 DRUGS)
 - E. VACCINES--ABOUT 15 TRIALS UNDERWAY
- III. MOLECULAR BIOLOGY OF HIV-1
 - A. RETROVIRUS LIFE CYCLE
 - 1. INFECTION
 - 2. UNCOATING
 - 3. REVERSE TRANSCRIPTION
 - 4. INTEGRATION
 - 5. LATENCY
 - 6. TRANSCRIPTION
 - 7. GENE EXPRESSION--SPLICING
 - 8. tat & rev GENES, ETC.
 - 9. ASSEMBLY
 - 10. EXIT
- IV. PATHOLOGY
 - A. INITIAL INFECTION
 - B. LATENCY
 - C. ARC
 - D. AIDS
 - E. STAGING--WALTER REED
- V. TRANSMISSION
 - A. SEXUAL
 - B. INTRAVENOUS DRUG USE
 - C. BIRTH--PERINATAL

THE HIV-1 GENOME

TAR polyA PBS(181-200) DIS(~260) SD(~290) ϕ (~315) AUG(336)

R(1-97) U5(98-181)



HIV-1 PROTEINS

| <u>PROTEIN</u> | <u>MAP (N)</u> | <u>SIZE (KB)</u> | <u>FUNCTION</u> |
|----------------|----------------|------------------|--|
| MA | 336 | 18 | Matrix protein |
| CA | | 24 | Capsid or Core protein |
| NC | | 17 | Nucleocapsid, binds ϕ & primer tRNA |
| P6 | | 6 | Interacts with Vpr |
| P1, P2 | | 1,2 | ?? |
| PR | | 10 | Proteinase |
| RT | | 66/51 | Reverse transcriptase-RNase H |
| IN | | 31 | Integrase |
| Gp120 | | 120 | Spike protein |
| Gp41 | | 41 | Transmembrane protein |
| Tat | | 16 | Binds to TAR, Promotes transcription of unspliced mRNAs. |
| Rev | | 19 | Binds to RRE, Transport of mRNAs |
| Vif | | 23 | Viral infectivity factor; a late function, maturation ? |
| Vpr | | 14 | Nuclear protein, function unclear, Blocks cell cycle in S or G2 |
| Vpu | | 16 | Late function, viral release ? |
| Nef | | 27 | (3'-orf) Down regulation of CD4 |