



4) Synthesis – DNA virus path (DNA viruses replicate in the nucleus, don't have enzymes), ex. Oncovirus

- Early viral genes transcribed using host enzymes to make viral mRNA for viral enzymes (translation) needed to replicate viral DNA
- Viral DNA replication
- Late viral genes are transcribed and translated for capsid protein synthesis

4) Synthesis – negative RNA virus path (nonsense strand, carry enzymes, replicate in the cytoplasm)

- Premade *Viral RNA dependent RNA polymerase* produces +RNA strands needed for Replicating – RNA genome & mRNA for synthesis of viral proteins
- mRNA translated for viral capsid proteins and enzymes

4) Synthesis – Retrovirus path (RNA transcribed into DNA, carry enzymes, replicate in the cytoplasm), ex. HIV

- Viral DNA synthesis using *RNA dependent DNA polymerase* (viral reverse transcriptase)
- Viral DNA integrates into host DNA (provirus, which will be replicated and passed on to daughter cell through mitosis)
- Viral integrated genome transcribed and translated for capsid proteins & enzymes