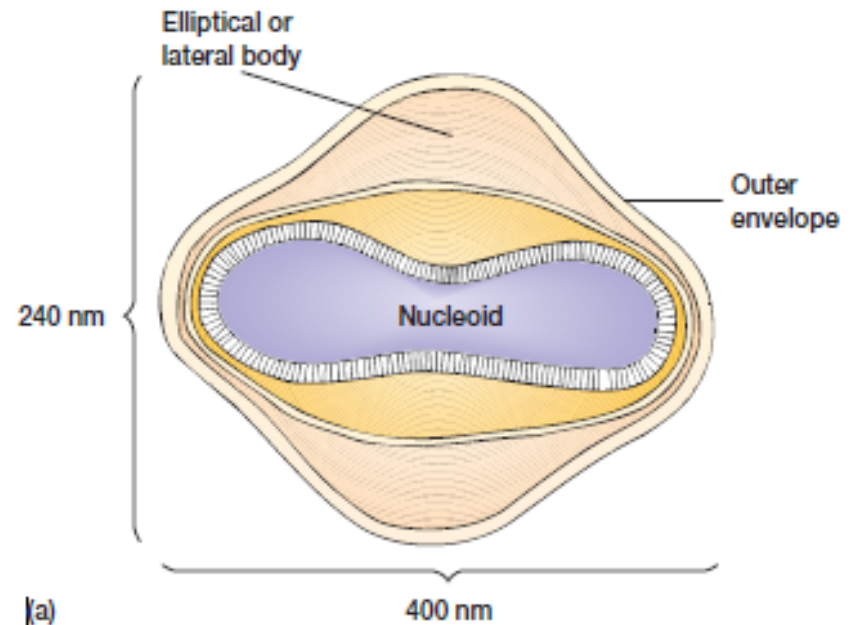


Vaccinia virus Replicaton

Dr. Ekta Khare

Vaccinia virus

- The double-stranded DNA is associated with proteins and contained in the nucleoid, a central structure shaped like a biconcave disk and surrounded by a membrane.
- Two elliptical or lateral bodies lie between the nucleoid and its outer envelope, a membrane and a thick layer covered by an array of tubules or fibers.



Vaccinia Virus

- Poxviruses such as the vaccinia virus are the largest viruses known and are morphologically complex.
- Their double-stranded DNA possesses over 200 genes.
- The virus enters through receptor-mediated endocytosis in coated vesicles; the central core escapes from the lysosome and enters the cytoplasmic matrix.
- The core contains both DNA and a DNA-dependent RNA polymerase that synthesizes early mRNAs, one of which directs the production of an enzyme that completes virus uncoating.
- DNA polymerase and other enzymes needed for DNA replication are also synthesized early in the reproductive cycle, and replication begins about 1.5 hours after infection.
- About the time DNA replication commences, late mRNA transcription is initiated.
- Many late proteins are structural proteins used in capsid construction.
- The complete reproductive cycle in poxviruses takes about 24 hours.

(3) Entry of enveloped virus by endocytosis

