

# *Herpes simplex virus*

*SROISIRI THAVEBOON*

Family : *Herpesviridae*      HSV-1, HSV-2

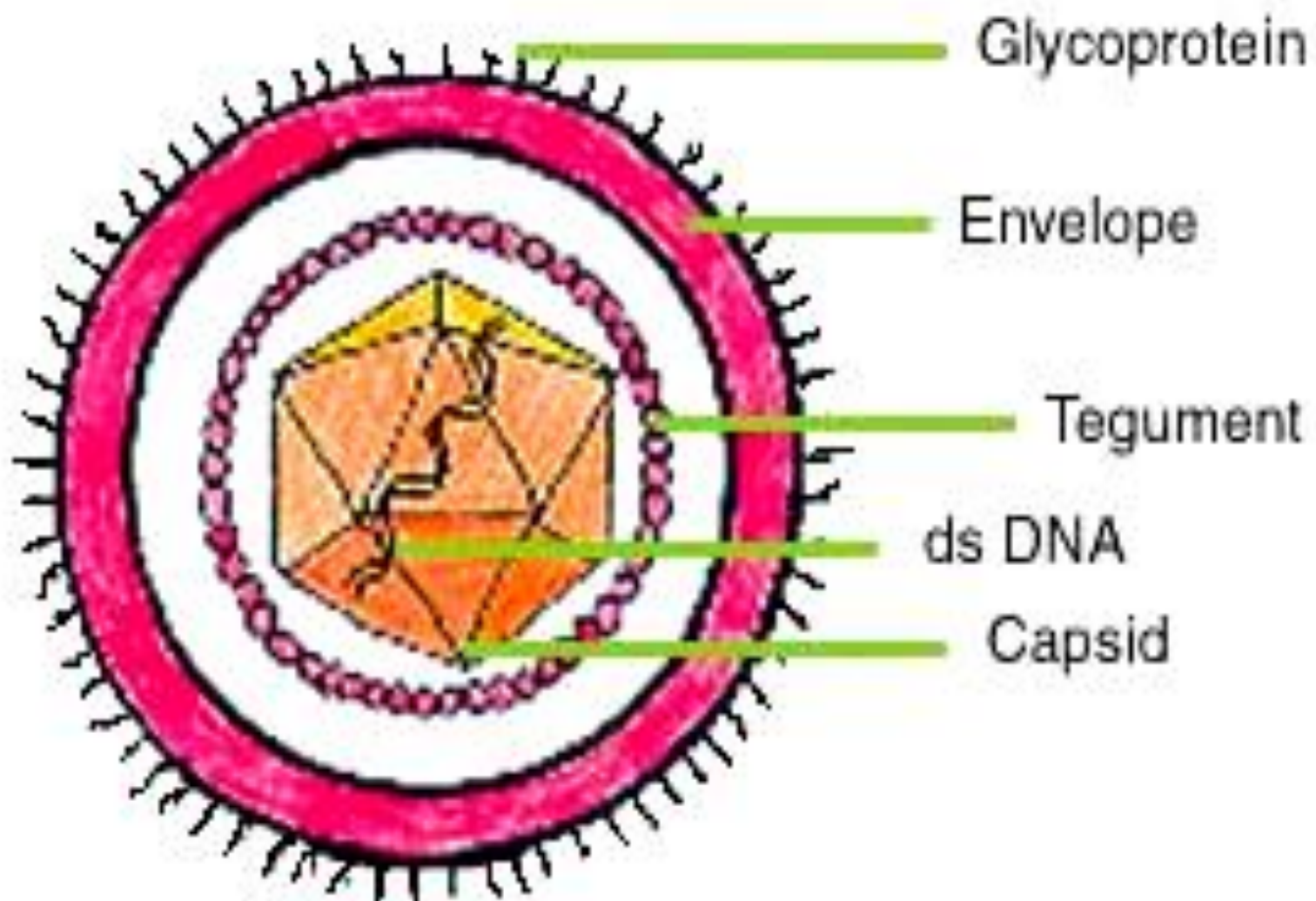
## Pathogenesis

inhalation, closed contact,  
sexual, abrasion, mucous membrane

## Virulence

age, location, immune (CMI, CD8)

- *180-250 nm*
- *ds DNA 180-230 kb*
- *icosahedral capsid, envelope*
- *lipid solvent, acid UV*
- *latent infection*





**1° infection**

**Subclinical, symptomatic**



**latent infection**

**(trigeminal gg, sacral gg)**

**exogenous  
endogenous**



**reactivation  
(fever, stress UV)**

**disease**

# Clinical

## 1. Acute gingivostomatitis

1° infection (HSV-1) vesicle,  
fever, pharyngitis, tonsilitis



trigeminal gg



reactivation

herpes labialis, fever blister, cold sore

## 2. Herpetic keratoconjunctivitis (HSV-1)

  
cure    keratitis    dendritic ulcer    → blindness

## 3. Skin infection

1° & reinfection    →    vesicle

dental personnel    →    herpetic whitlow

HSV-1, HSV-2





## 4. Herpetic meningo-encephalitis

HSV-1 (mostly)

HSV-2 (infant)



70% fatality

5. Genital herpes

HSV-2 > HSV-1

6. Neonatal herpes

HSV-2  
(perinatal)

7. Disseminated herpes in

immunocompromised host

# Lab diagnosis

No need

vesicle fluid, cells

- Tzanck test → cell stain with wright/ giemsa



multinucleated cell

- Ag immunofluorescence

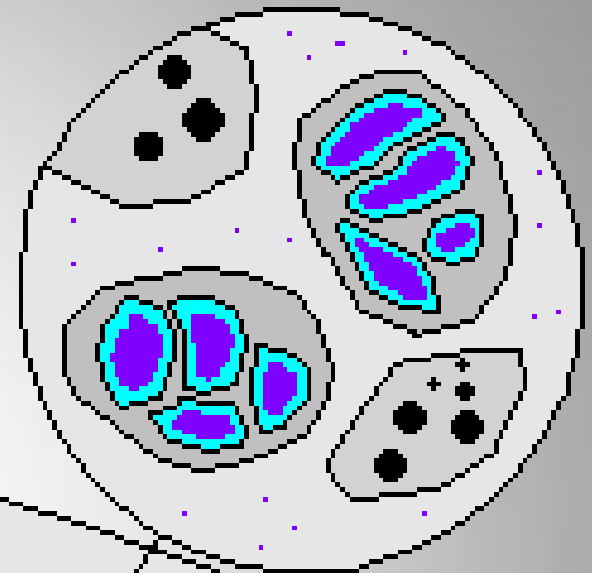
- DNA PCR

- Isolation hep-2 , HeLa , Vero cells → CPE

Chorioallantoic memb → pock

# Herpes Viruses

infectious blister fluid



The masses of virus particles in the nuclei are called "inclusions."

- Ab anti-HSV IgM (1<sup>0</sup> infection)

## Epidemiology

HSV-1 (saliva) aged 2-3yr  
HSV-2 adolescent

## Prevention

no vaccine

## Treatment

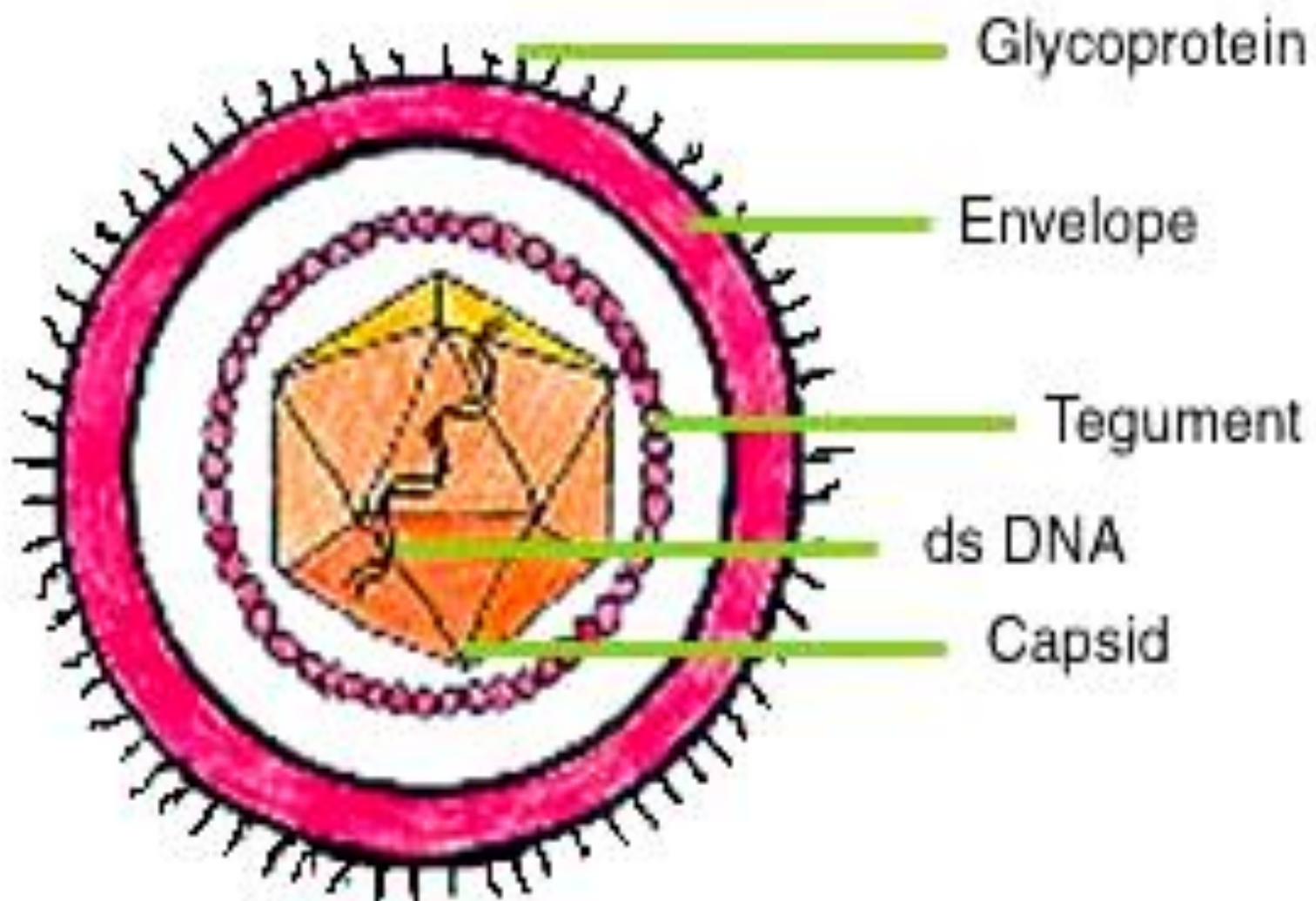
acyclovir  
↓ duration, not prevent latent  
infection

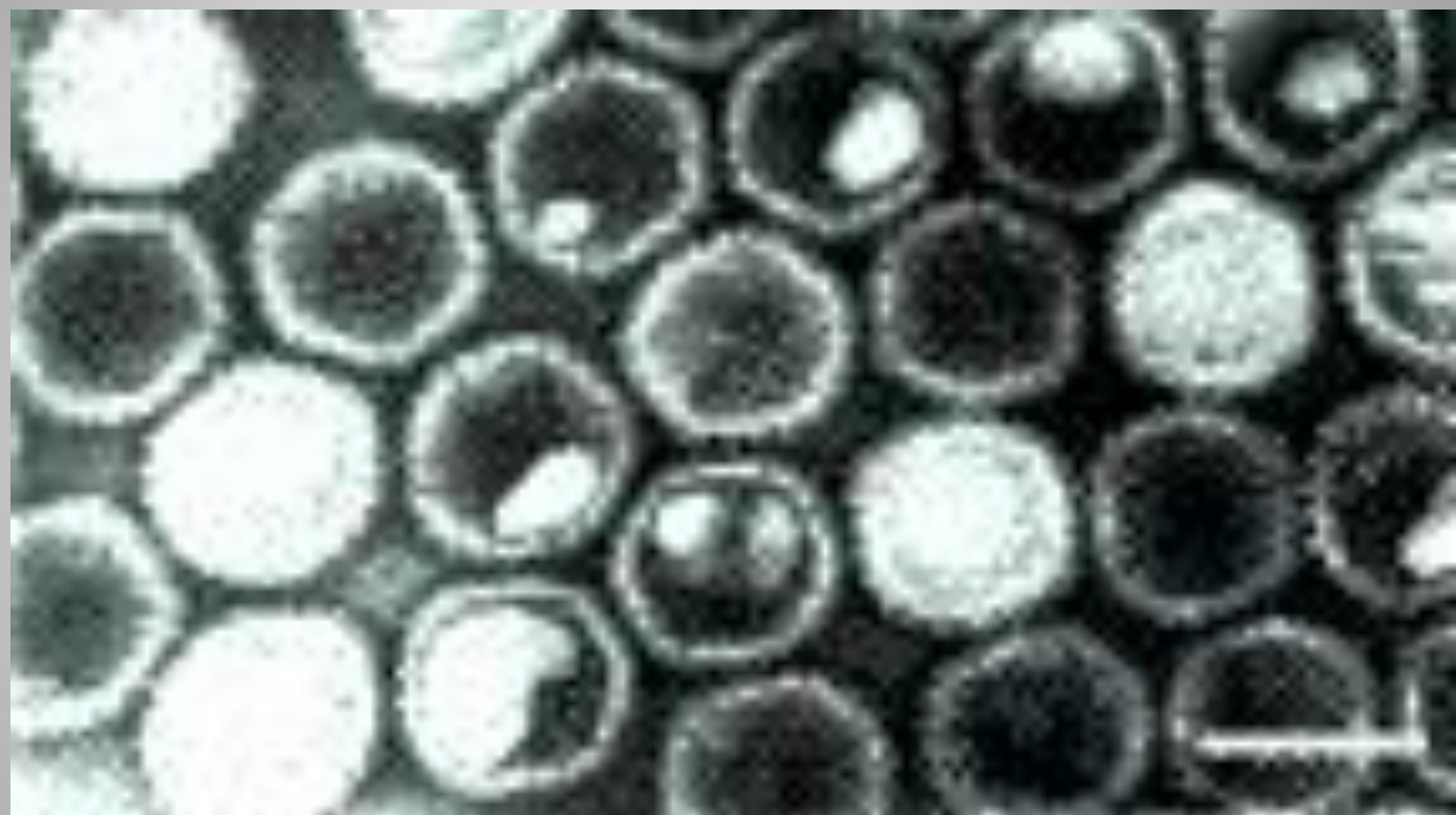
# Varicella zoster virus

Family : *Herpesviridae*

1<sup>o</sup> infection → varicella  
chickenpox

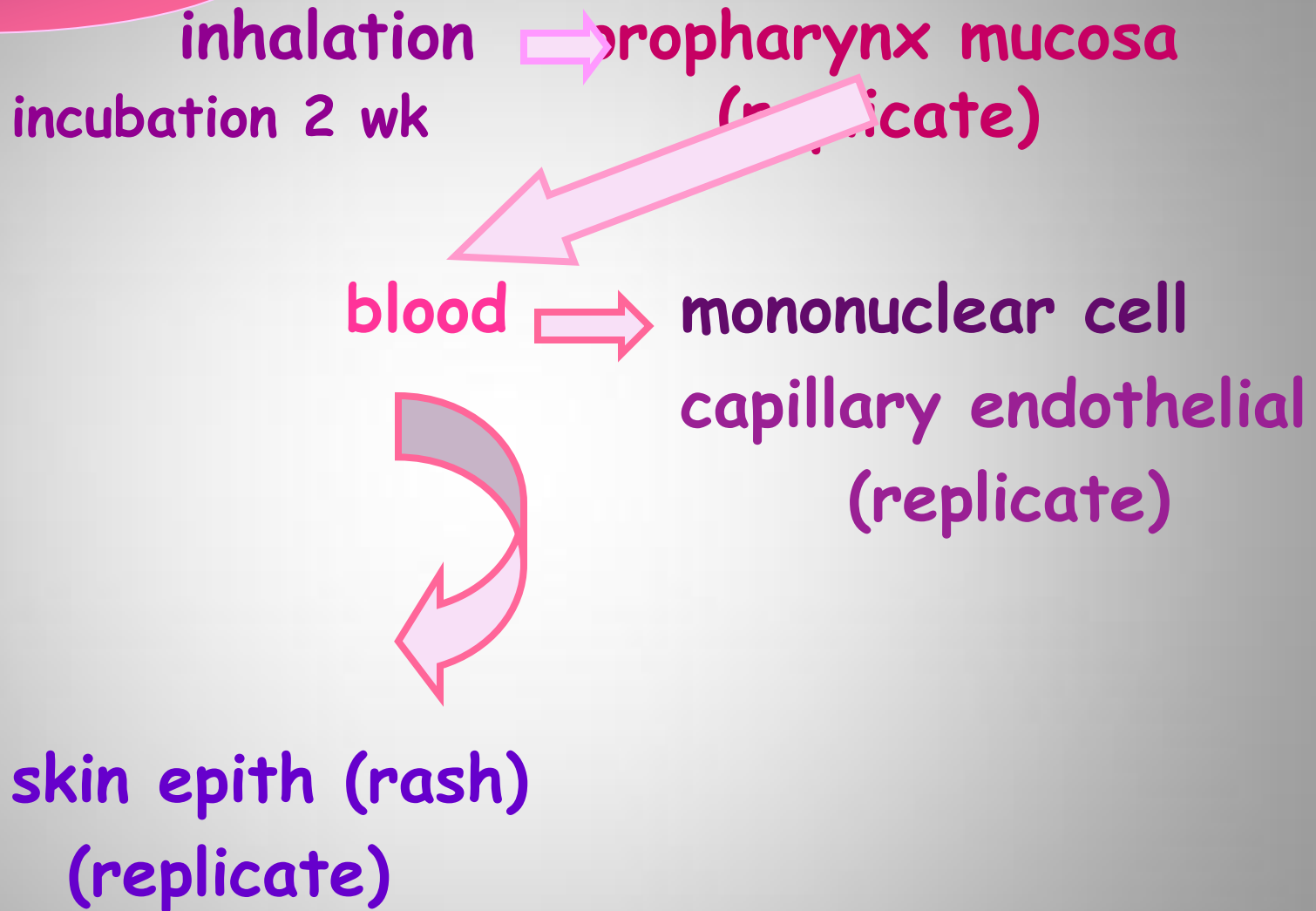
reinfection → herpes zoster  
shingles







# Pathogenesis



# Clinical

nerve gg  
↓  
VZV < HSV

CMI  
reactivate

- chickenpox fever,  
macule → papule → vesicle → pustule → scab  
complication in adult pneumonia, encephalitis



pregnant woman

disseminated varicella

4<sup>th</sup> month → congenital malformation  
5 days → death

- varicella vesicle(unilateral)

## Lab diagnosis

- Direct exam from specimen  
Tzanck test + monoclonal Ab, EIA, PCR
- isolation in human fibroblasts → CPE

- Ab ELISA (1<sup>o</sup> infection)

**Epidemiology** inhalation, direct contact

**Prevention**

- passive immunization → ZIG

pregnant, infant, immune compromised host  
within 72 h

- active immunization → vaccine

live attenuated vaccine (Oka strain) 0, 1 mth

# Rubella virus

German measles, 3-day measles, rubella

pregnant women → congenital malformation

Family : *Togaviridae*      Genus : *Rubivirus*

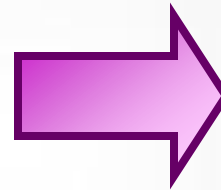
enveloped virus with hemagglutinin spike

- prenatal rubella malformation
- postnatal rubella

inhalation → respiratory epith/cervical LN

↓  
blood

incubation 7-21 days



subclinical



fever, maculopapular  
rash

no reinfection long-live protective Ab

## Lab diagnosis

- Isolation in Vero cells, BHK-21
- Ab

## Epidemiology

inhalation

subclinical > symptomatic

adult 9 : 1 , child 1 : 1

## Prevention

vaccine (MMR)

live attenuated (RA 27/3 strain)

children 15 mth > 10 yr

women 2-3 mth birth control



*The end*