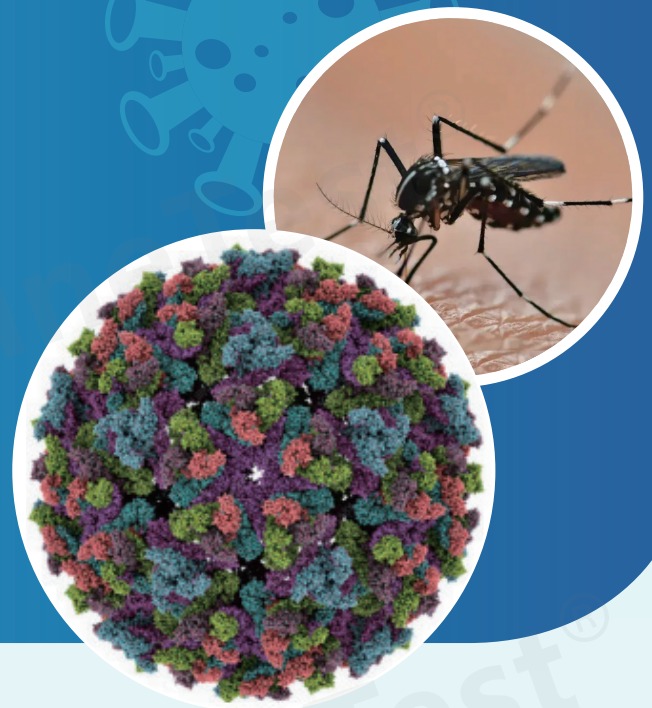




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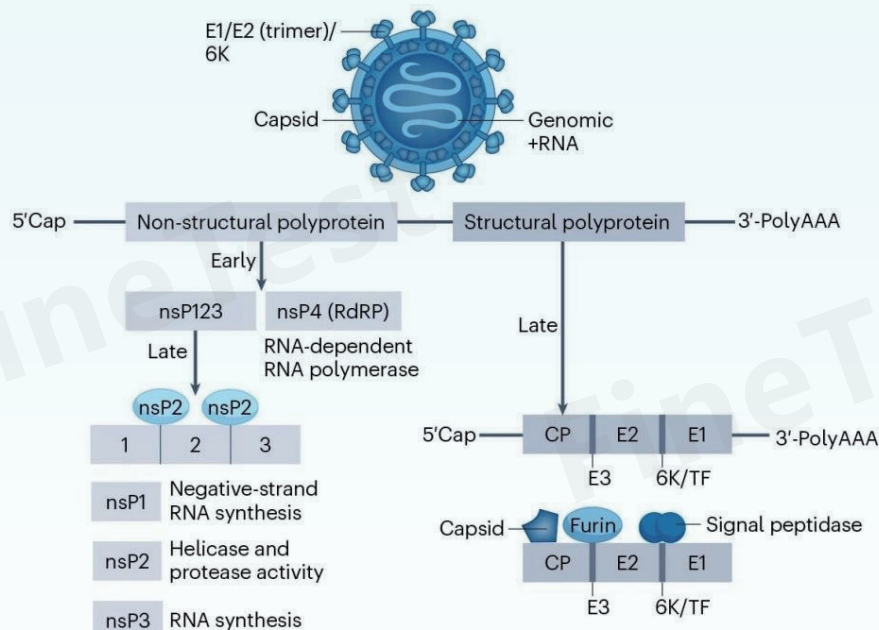
Chikungunya Virus(CHIKV)

- ❖ **Chikungunya fever is the mosquito-transmitted viral disease induced by Chikungunya virus(CHIKV).** The virus is the positive-strand RNA virus composed of 11.8kb, and is a member of the genus Alphavirus, and family Togaviridae. Chikungunya is named after a Kimakonde word of southern Tanzania, and means distortion. This word describes the scene when people infected with severe joint pain bend over.



Chikungunya Virus Structure and Functions of Protein Components

CHIKV is the RNA virus coated by icosahedral capsids. The genome includes two open reading frames, encoding non-structural protein (nsP1-4) and structural protein(C-E3-E2-6K/TF-E1)respectively. In non-structural protein, nsP1 promotes virus replication and immune escape via methyltransferase activity. nsP2 helps the virus escape from immunity via inhibiting interferon signaling pathway. nsP3 regulates virus replication via ADP ribose hydrolysis and RNA synthesis. nsP4 is responsible for viral RNA synthesis as RNA polymerase. In structural protein, 6K/TF protein is involved in viral budding. E1-E2 heterodimers mediate membrane fusion process(E2 binds with receptor, E1 is responsible for membrane fusion). E3 protein plays a key role in stabilizing E2 and activating E1. E2 shows the sequence conservation in different popular genotypes, and can be considered as the important marker for virus detection during viremia.



Chikungunya Virus Structure

CHIKV is the zoonotic virus infecting human beings and non-human beings(e.g. rodents, non-human primates). Researchers use mouse species to perform assays and better understand pathogenesis of CHIKV. Behaviors of infected rodents are similar to human beings. Arthritis and myositis similar to human symptoms are found in infected young and adult C57BL/6 mouse footpads. Systemic infection appears in mice infected with CHIKV, including detectable viremia, skeletal muscle damage and chronic tissue damage. However, murine arthritis is usually limited to ipsilateral joint, unlike polyarthritis of people infected with CHIKV. Acute symptoms of non-human primates infected with CHIKV are similar to human beings. Symptoms of infected rhesus monkey and cynomolgus monkey are fever, rash, viremia, swollen wrist and ankle joint. Symptoms of infected animals are the same as human beings.

Types of Chikungunya Virus

CHIKV molecules include three phylogenetic lineages: East/Central/South/African (ECSA), West African (WA), and Asian. ECSA has a high genetic diversity. However, CHIKV doesn't present amino acid substitution highly adaptable to human body. Only mutation affecting adaptable transmission of virus via mosquito vectors appears. E.g. The 226th amino acid of E1 protein is mutated from alanine to valine. The virus infection adaptability in *Aedes albopictus* improves by 40 times. Other mutations in ECSA can improve infection adaptability in *Aedes albopictus* by 5-8 times, e.g. E2-K252Q, E2-K233E and E2-L210Q.

Chikungunya epidemic was first found in Tanzania in 1952. In 1956, Chikungunya epidemic first appeared in Thailand. In 1965, Chikungunya pandemic happened in India. More than 300,000 people were infected. In 2013, ECSA virus was transmitted to Americas. In March 2008, the first imported Chikungunya case was found in China. In July 2025, Chikungunya epidemic started in Foshan, Guangdong. According to statistics by WHO, till August 2025, Chikungunya epidemic has been reported in 119 countries and areas. Over 500,000 cases were reported annually. The virus was endemic in tropical and subtropical regions.

To help scientific research, FineTest has developed various products related to Chikungunya Virus below.

Chikungunya Virus Recombinant Protein

Cat.No	Product Name	Host	Cat.No	Product Name	Host
Pr3690	CHIKV E2 glycoprotein	E.coli	Pr3691	CHIKV E2 glycoprotein	HEK293 Cells

Receptor Recombinant Protein

Cat.No	Product Name	Host	Tag
P2750	Recombinant Human CD147	HEK293 cells	C-terminal His Tag
Pr22633	Recombinant Human CD147	Mammalian Cells	C-terminal hFc Tag
Pr22635	Recombinant Human CD147	Mammalian Cells	C-terminal mFc Tag
Pr22539	Recombinant Mouse CD147	Mammalian Cells	C-terminal His Tag
P5113	Recombinant Human PHB1	E.Coli	N-terminal His-IF2DI Tag

Antigen Detection Kit for Chikungunya Virus

Cat.No	Product Name
QT-EU2689-1S	CHIKV E2 (Chikungunya virus glycoprotein E2) QuickTest ELISA Kit
EU2690	CHIKV E2 (Chikungunya virus glycoprotein E2) ELISA Kit

Immunoglobulin Detection Kit for Chikungunya Virus

Cat.No	Product Name	Range	Sensitivity	Duration
EH5448	Human Anti-CHIKV E2 IgM ELISA Kit	1.563-100ng/ml	0.938ng/ml	3h
EH5449	Human Anti-CHIKV E2 IgG ELISA Kit	0.781-50ng/ml	0.469ng/ml	3h
EMK0372	Monkey Anti-CHIKV E2 IgM ELISA Kit	1.563-100ng/ml	0.938ng/ml	3h
EMK0373	Monkey Anti-CHIKV E2 IgG ELISA Kit	0.781-50ng/ml	0.469ng/ml	3h
EM2299	Mouse Anti-CHIKV E2 IgM ELISA Kit	1.563-100ng/ml	0.938ng/ml	3h
EM2300	Mouse Anti-CHIKV E2 IgG ELISA Kit	0.781-50ng/ml	0.469ng/ml	3h

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