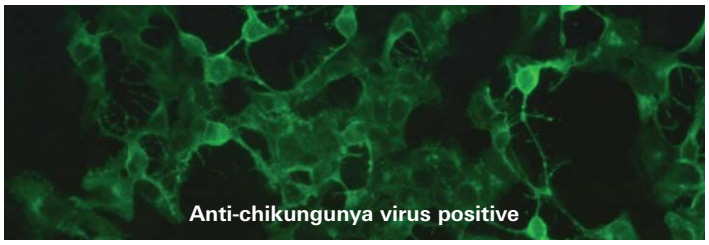
Anti-Chikungunya Virus IIFT (IgG or IgM)


Anti-chikungunya virus positive


Anti-chikungunya virus negative

- **Sensitive serological test to support the diagnosis of chikungunya virus infections**
- **Important for the diagnostic differentiation from symptomatically similar virus infections (e.g. dengue, Zika)**
- **Various automation solutions for processing and microscopy**

Technical data

Antigen substrate	Chikungunya virus-infected cells (species EU 14)
Sample material	Serum or plasma
Sample dilution	Qualitative evaluation: 1:10; semiquantitative evaluation: 1:10/100/1000 etc.
Test procedure	30 min (sample) / 30 min (conjugate), both at room temperature
Microscopy	Objective 20×
	Light source: Mercury vapour lamp, 100 W, EUROIMMUN LED, EUROStar Bluelight
	Excitation filter: 450 – 490 nm, colour separator: 510 nm, blocking filter: 515 nm
Reagents	Ready for use, with the exception of the PBS Tween buffer
Stability	All kit components are stable for at least 18 months from the date of manufacture.
Test kit format	10 or 20 slides, each containing 5 or 10 test fields; kit includes all necessary reagents
Order number	**FI 293a-#### G or M**, FR 293a-#### G or M
Related products	FI 2668-####-1 G or M IIFT: Arbovirus Fever Mosaic 2 (Zika virus, chikungunya virus, dengue virus type 1-4)
	FI 2668-####-3 G or M IIFT: Arbovirus Profile 3 (Zika virus, chikungunya virus, dengue virus type 1-4, TBE virus, yellow fever virus, West Nile virus, Japanese encephalitis virus)

Clinical significance

Chikungunya virus (CHIKV) is the pathogenic agent of chikungunya fever, an infectious tropical disease characterised by fever and joint pain. It is transmitted by mosquitoes of the genus *Aedes aegypti* (yellow fever mosquito) and *Aedes albopictus* (Asian tiger mosquito) that are active day and night. The possible transmission cycles as well as the clinical picture are partly similar to those of dengue fever or Zika virus infection. Chikungunya fever was first reported in 1952/1953 during an epidemic in the Makonde plateau, which is the border region between Tanzania and Mozambique, in East Africa. In the Makonde language the term "chikungunya" stands for "crookedly walking patient" due to its main symptom of severe joint and muscle pains accompanied by a high sensitivity to touch in the whole body (70 % to 99 % of cases). Furthermore, chikungunya virus infection is characterised by a (usually rapidly rising) high fever (38.5 to 40 °C), lymph node swelling, slightly to moderately itchy skin rash (approx. 50%), rarely by punctual bleeding of the skin (petechia), mild forms of mucosa bleeding, e.g. of the nose or gums (approx. 25%), headache, fatigue and ophthalmitis.

Diagnostic application

The determination of antibodies against chikungunya virus by means of the Anti-Chikungunya Virus IIFT (IgG or IgM) supports the diagnosis of an infection and is also a supplement to the direct detection of the pathogen, e.g. by means of RT-PCR. Seroconversion or an increase in the specific IgG antibody level indicates an acute infection. The test is not only suitable for supporting a diagnosis, but also for collecting epidemiological data.

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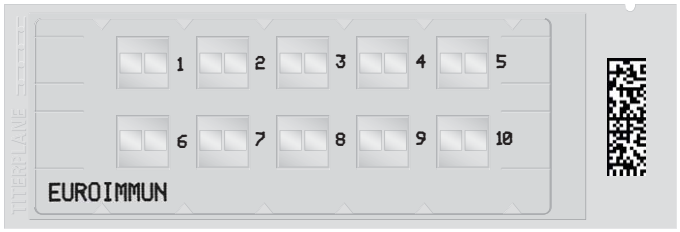
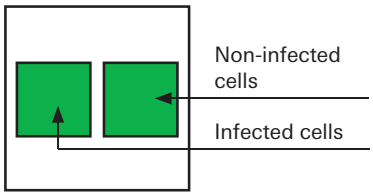
BIOCHIP arrangement

The Anti-Chikungunya Virus IIFT (IgG, IgM) is available in two formats: slides with 5 or 10 fields. Each test field contains two BIOCHIPs.





Reference ranges

The following antibody prevalences were determined using a panel of samples from healthy blood donors (origin: Germany):

Antibodies against	Ig class	Prevalence	Cut-off	Number of samples
Chikungunya virus	IgG	0.3%	1:10	n = 388
	IgM	2.7%		n = 333

Sensitivity and specificity

n = 327		Precharacterisation	
		positive	negative
Anti-Chikungunya Virus IIFT (IgM)	positive	170	1
	negative	4	152
Sensitivity IgM		97.7%	
Specificity IgM		99.3%	

n = 217		Precharacterisation	
		positive	negative
Anti-Chikungunya Virus IIFT (IgG)	positive	112	3
	negative	5	97
Sensitivity IgG		97.0%	
Specificity IgG		95.7%	

Cross-reactivity

Antibodies against	n (IgM)	Positive in the Anti-Chikungunya Virus IIFT (IgM)	n (IgG)	Positive in the Anti-Chikungunya Virus IIFT (IgG)
Rubella virus	10	20.0%	20	0%
Sindbis virus	14	35.7%	21	71.4%
Ross River virus	75	10.7%	87	93.1%
Barmah forest virus	40	2.5%	46	28.3%
Dengue virus	16	0%	28	0%
West Nile virus	13	0%	15	0%
Zika virus	31	0%	28	3.6%

Sera from patients with infections caused by different pathogens were investigated for cross-reactivity with the Anti-Chikungunya Virus IIFT (IgG or IgM) at the cut-off dilutions. It should be noted that strong cross-reactions within the Alphavirus genus cannot be excluded. However, it must also be noted that double infections are possible, especially in endemic areas, or an infection with another alphavirus may have occurred at an earlier time. In this case, positive results are not caused by a cross-reactivity of the corresponding antibodies. EUROIMMUN recommends the comparative determination of endpoint titers using a dilution series of the patient sample, e.g. on suitable IIFT mosaics.

Literature

1. Litzba N et al. **Evaluation of the first commercial chikungunya virus indirect immunofluorescence test.** J Virol Meth. 149: 175-179 (2008).
2. Johnson BW et al. **Evaluation of Commercially Available Chikungunya Virus Immunoglobulin M Detection Assays.** Am J Trop Med Hyg. 95(1):182-92 (2016).

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