Anti-Measles Virus ELISA 2.0 (IgG)

- **Detection of specific IgG antibodies to support the diagnosis of measles virus infections**
- **Also validated for dried blood spots (DBS) as sample material – minimally invasive sampling and high sample stability, e.g. ideal for routine diagnostics and in studies**
- **Calibrated with respect to the 3rd International Standard serum NIBSC 97/648**

Technical data

Antigen	Measles virus antigens
Calibration	Quantitative, in international units per liter (IU/l);
Result interpretation	EUROIMMUN recommends interpreting results as follows: < 140 IU/l: negative ≥ 140 to < 200 IU/l: borderline ≥ 200 IU/l: positive Recommended upper threshold of the reference range for non-infected individuals (cut-off): 250 IU/l
Sample dilution	Serum or plasma, 1 : 101 in sample buffer, or 4.76 mm membrane piece containing dried capillary blood (punched out from Blood Collection Card) in 250 µl sample buffer
Reagents	Ready for use, with the exception of the wash buffer (10x); colour-coded solutions, in most cases exchangeable with those in other EUROIMMUN ELISA kits
Test procedure	30 min / 30 min / 15 min, room temperature, fully automatable
Measurement	450 nm, reference wavelength between 620 nm and 650 nm
Test kit format	96 break-off wells; kit includes all necessary reagents
Order number	**EI 2610-9601-2 G**
Related products	EI 2610-9601 M Anti-Measles Virus ELISA (IgM) EI 2610-9601-4 M Anti-Measles Virus NP ELISA (IgM) EI 2610-9601-1 G Avidity: Anti-Measles Virus ELISA (IgG) EI 2610-9601-L G CSF: Anti-Measles Virus ELISA (IgG)

Clinical significance

The measles virus (MV) belongs to the Morbilliviruses, a group of viruses of the Paramyxoviridae family. The virus causes an acute feverish illness which occurs mainly in childhood and is very infectious. In 1999, measles still caused worldwide 873,000 deaths per year. Generally, the disease has become more seldom because of vaccination, especially in the western hemisphere. However, measles epidemics are currently occurring more frequently in some countries. Individuals acutely infected with the virus exhibit a wide range of clinical symptoms ranging from a characteristic mild self-limiting infection to death. MV infections are characterised by an incubation period of about 10 days, flu-like symptoms with fever, malaise, catarrh of the upper respiratory tract, cough, congestion and conjunctivitis. Soon afterwards the measles rash, a typical exanthema, appears first near the ears, then on the forehead, in the face and over the rest of the body. Antibodies against measles virus can be found in the serum of almost all patients during and after a measles virus infection. They are a reliable marker in suspected measles cases. IgM antibodies are produced soon after the onset of symptoms and can be measured using serological methods. 50 % of patients present IgM antibodies within three days of disease onset, more than 90 % within 10 days after occurrence of the rash.

EUROIMMUN Medizinische Labordiagnostika AG · Seekamp 31 · 23560 Lübeck (Germany) · Phone: +49 451 20 32-0 · www.euroimmun.com

Prevalence

In 500 samples from apparently healthy blood donors aged between 19 and 69 years (122 women, 378 men), anti-measles virus IgG antibody levels were determined using the Anti-Measles Virus ELISA 2.0 (IgG). As expected, the positive rate increased with age. With a cut-off value of 175 IU/ml, 87.8% of the blood donors were anti-measles positive (IgG).

Comparison of sample materials

In order to determine the agreement of results obtained by Anti-Measles Virus ELISA 2.0 (IgG) using either DBS samples from capillary whole blood, or serum samples from venous blood, 185 sample pairs were analysed (origin: USA). The agreement of measurement results was 100% (positive agreement (PPA): 100%, negative agreement (NPA): 100%). Borderline results were not included in the calculation.

n = 185		Anti-Measles Virus ELISA 2.0 (IgG) EUROIMMUN, serum		
		positive	borderline	negative
Anti-Measles Virus ELISA 2.0 (IgG), EUROIMMUN, DBS	positive	132	1	0
	borderline	8	4	1
	negative	0	4	35

Clinical performance parameters

For the determination of sensitivity, samples from patients with acute measles infection, and samples from patients vaccinated against measles virus were used. For the determination of specificity, samples with a negative IgG status (individuals without vaccination or by consensus result as quality assessment scheme samples characterised as negative).

n = 231		Clinical characterisation		
		positive	negative	total
Anti-Measles Virus ELISA 2.0 (IgG), EUROIMMUN	positive	184	0	184
	borderline	6	0	6
	negative	6	35	41

n = 225		Evaluation	
		Value in %	95 % CI
Anti-Measles Virus ELISA 2.0 (IgG), EUROIMMUN	Specificity	100%	90.0 – 100%
	Sensitivity	96.8%	93.3 – 98.8%
	positive likelihood quotient	>1000	
	negative likelihood quotient	0.032	

Borderline results excluded

Cross-reactivity (analytical specificity)

Cross-reactions cannot be excluded within the family of Paramyxoviridae.

Accuracy

The 3rd International Standard for Anti-Measles (NIBSC 97/648) was tested in 25 dilution steps using the Anti-Measles Virus ELISA 2.0 (IgG) and the results compared with the corresponding calculated reference values. The mean concordance was 96.7%.

Literature

1. Bellini WJ, et al. **The challenges and strategies for laboratory diagnosis of measles in an international setting.** J Infect Dis 187:283-290 (2003).
2. Ota MO, et al. **Emerging diseases: measles.** J Neurovirol 11(5):447-454 (2005).
3. Brady AM, et al. **Serosurveillance for Measles and Rubella.** Vaccines (Basel) 12(7):816 (2024).
4. Hübschen JM, et al. **Challenges of measles and rubella laboratory diagnostic in the era of elimination.** Clin Microbiol Infect 23(8):511-515 (2017).

EUROIMMUN Medizinische Labordiagnostika AG · Seekamp 31 · 23560 Lübeck (Germany) · Phone: +49 451 20 32-0 · www.euroimmun.com

EI_2610_D_UK_A12, 03/2025