Anti-B. pertussis Toxin

Specific IgG and IgA antibody determination

sebia

The new language of life

Whooping Cough (Pertussis)
... more than a childhood disease

Pathogen

Bordetella pertussis is a non-motile rod-shaped bacterium and the causative agent of whooping cough (pertussis). Whooping cough is a classic childhood disease, but can occur also in adults.

Epidemiology

Bordetella pertussis is widespread globally. Despite recommendations for vaccination, around 10 to 20 cases of pertussis are recorded per 100,000 inhabitants every year. The incidence is highest in infants with approximately 50 per 100,000.

Transmission

The pathogens are transmitted mainly aerogen through droplets with high contagiousness.

Clinical Symptoms

In the first stadium catarrhale (1 - 2 weeks), non-specific flu-like symptoms with a dry cough initially appear. In the stadium convulsivum (4 - 6 weeks) the typical staccato-like coughing attacks follow. Finally, the cough attacks gradually decrease in number and severity in the stadium decrementi (6 - 10 weeks). An illness does not provide lifelong immunity.
The most common complications are pneumonia, otitis media and encephalopathies in parts with intracranial bleedings. Life-threatening respiratory arrests (apneas) can occur in infants under six months of age.
Vaccines are available for prophylaxis.

Diagnosis

The diagnosis is based on the clinical symptoms and confirmed by laboratory methods. Various direct (e. g. PCR, culture, IFA) and indirect methods (e. g. ELISA, CLIA, Immunoblot) are available for laboratory diagnostic confirmation.

Anti-B. pertussis Toxin
Specific antibody determination

Antigen

The Alegria Anti-B. pertussis Toxin IgA and IgG Monotests are based on purified Bordetella pertussis Toxin to ensure the specific determination of IgA and IgG antibodies.

Calibration

The Alegria Alegria Anti-B. pertussis Toxin IgA and IgG Monotests are calibrated with the international standard NIBSC Code 06/140. Results are expressed in IU/mL.

Sensitivity and Specificity

	Sensitivity	Specificity	Diagnostic Efficiency
Anti-B. pertussis Toxin IgA	92.6 %	98.7 %	98.3 %
Anti-B. pertussis Toxin IgG	93.6 %	> 99 %	> 99 %

Precision Anti-B. pertussis Toxin IgA

	Intraassay Repeatability		Interassay Reproducibility	
	Antibody Activity (IU/mL)	Coeffcient of Variation (CV)	Antibody Activity (IU/mL)	Coeffcient of Variation (CV)
Sample 1	9.4 IU/mL	4.5 %	8.5 IU/mL	6.5 %
Sample 2	12.2 IU/mL	3.6 %	12.8 IU/mL	3.8 %
Sample 3	42.6 IU/mL	7.4 %	42.1 IU/mL	8.3 %

Precision Anti-B. pertussis Toxin IgG

	Intraassay Repeatability		Interassay Reproducibility	
	Antibody Activity (IU/mL)	Coeffcient of Variation (CV)	Antibody Activity (IU/mL)	Coeffcient of Variation (CV)
Sample 1	31.3 IU/mL	7.0 %	19.1 IU/mL	4.8 %
Sample 2	72.8 IU/mL	7.5 %	79.6 IU/mL	13.8 %
Sample 3	147.9 IU/mL	9.9 %	166.0 IU/mL	10.3 %

Product Highlights

- ELISA-based random access determination of IgA and IgG antibodies against purified *Bordetella pertussis* Toxin
- Full automation and complete traceability with Alegria 2
- Lab-on-a-Strip: ready-to-use test-specific reagents in individually sealed and barcoded Alegria Monotest strips
- Calibration of Anti-Bordetella pertussis Toxin IgG and IgA Monotests with the international standard (NIBSC Code 06/140)
- IgG and IgA antibody activities expressed in IU/mL
- Borderline ranges according to recommendations of European Reference Centers
- Excellent diagnostic efficiency
- High reproducibility for reliable test results
- Economical all-in-one Alegria Monotests, particularly suited for small series
- Flexible combination of Alegria Monotests for optimal workflow efficiency

Ordering *information*

- Anti-B. pertussis Toxin IgA ..... **ORG 916A**
- Anti-B. pertussis Toxin IgG ..... **ORG 916G**

Scan here **for more information** about Alegria Anti-B. pertussis Toxin Monotests

Literature

Regan *et al.* (2023) Maternal Pertussis Vaccination, Infant Immunization, and Risk of Pertussis. Pediatrics 152, e2023062664.

Decker *et al.* (2021) Pertussis (Whooping Cough). J. Infect. Dis. 224 (12 Suppl 2), S310 – 20.

Guiso *et al.* (2011) What to do and what not to do in serological diagnosis of pertussis: recommendations from EU reference laboratories. Eur. J. Clin. Microbiol. Infect. Dis. 30, 307 - 12.

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