



Bordetella pertussis



Bordetella pertussis is the causative organism for whooping cough, which affects only humans.

The genera *Bordetella* are small, coccoid Gram-negative rods (see fig.).

The pathogens are transmitted by aerosol droplets. Sources of infection are infected persons during the catarrhal phase, who cough out. The bacteria are able to attach themselves to the cells of the ciliated epithelium in the bronchi. They rarely invade the epithelium. The infection results in (sub-) epithelial inflammations and necroses. The onset of whooping cough develops after an incubation period of 1-3 weeks in three phases (see the table below).

Pertussis occurs worldwide. In Africa for example *Bordetella pertussis* is – besides the measles virus – mainly responsible for the high lethality during the first years of life. Especially children, who visit the kinder garden, give currency to the pathogens also patients with sub clinical experience. Beside it adults, who vaccinated as children, have little or no residual immunity and fall sick.

Species	Disease	Symptoms	Mechanism of infection
<i>Bordetella pertussis</i>	Whooping cough (Pertussis)	<p><u>Catarrhal phase:</u> lasting 1-2 weeks, uncharacteristic.</p> <p><u>Paroxysmal phase:</u> lasting 2-3 weeks, with typical convulsive coughing spells.</p> <p><u>Decrementi phase:</u> convalescent phase, which can last for several weeks.</p>	<p>Transmission by aerosol droplets with high risk of infection.</p> <p>Humans are the only hosts.</p> <p>Incubation period: 1-3 weeks.</p>

Infections may be diagnosed by:

Microscopy: determination in cultures, IF

Serology: determination of specific antibodies based on the ELISA-technique



A precise diagnostic is necessary for an effective therapy, the isolation of non-vaccinated children and differentiation of whooping cough and atypical diseases resp. chronic infections.

NovaLisa™ Bordetella pertussis IgA/IgG/IgM ELISA:

NovaLisa™ Bordetella pertussis IgA/IgG/IgM ELISA is intended for the qualitative determination IgA-, IgG- and IgM- class antibodies against *Bordetella pertussis* in human serum or plasma (citrate).

Antigens:

IgA, IgG: *B. pertussis* Toxin and filamentous Hemagglutinine.

IgM: Purified lysate antigens of *B. pertussis*

Specific performance characteristics:

	Interassay			Intraassay			Sensitivity %	Specificity%
	n	Mean	CV %	n	Mean	CV %		
IgA	12	1.28	5.18	20	0.47	7.1	87.5	>90
	12	2.40	6.94	24	0.88	4.9		
IgG	12	15	4.9	20	0.55	3.9	97.6	94
	12	35	6.1	24	1.48	5.2		
IgM	12	0.85	9.4	20	0.44	8.5	84.2	>95
	12	2.25	8.2	24	1.04	14.0		

Order information:

ELISA	Number of determinations	Product number
Bordetella pertussis IgA	96	BOPA0030
Bordetella pertussis IgG	96	BOPG0030
Bordetella pertussis IgM	96	BOPM0030