

# REAL RESPIRATORY BACTERIAL PANEL 2

Test for the differential detection of *Bordetella pertussis*, *Bordetella parapertussis* and *Bordetella holmesii* by real time PCR



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Target IS481+IS1001+hIS1001

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The *Bordetella* genus is formed by 8 species, of which only the following are human pathogens: *B. pertussis*, *B. parapertussis* and *B. holmesii*. There is a fourth, *B. bronquiseptica*, which normally is limited to animals, although some cases have been reported in immunocompromised patients.

Both *B. pertussis* and *B. parapertussis* are highly efficient pathogens that establish respiratory infection and remain located in the upper respiratory tract. The disease caused by *B. pertussis* and *B. parapertussis* is known as whooping cough (pertussis). It is a major risk today, as there are 50 million cases a year with 300,000 deaths (most of them in infants and neonates). Therefore, a reliable diagnosis is required to start appropriate treatment and contact prophylaxis.

The diagnosis of *Bordetellas* based on cultures or serological techniques presents special requirements, these are sometimes very expensive over time or do not present good sensitivity data. For this reason, molecular techniques detecting insertion sequences (IS) present in multiple copies per genome, can be an interesting alternative for the sensitive detection of these pathogens.

The Real Respiratory Bacterial Panel 2 (*B. pertussis*, *B. parapertussis*, *B. holmesii*) allows the differential detection of infections caused by *B. pertussis*, *B. parapertussis* y *B. holmesii* in samples from the respiratory tract (nasopharyngeal swabs, nasopharyngeal lavages, nasopharyngeal aspirates, etc.) in a simple, inexpensive and reliable way.

### Procedure

RNA sample extraction

PCR real time\*

Data analysis

\* The kit includes all the necessary reagents for real time PCR amplification

TARGET	SIGNAL	DETECTION
<i>Bordetella pertussis</i>	Cy5	✓
<i>Bordetella parapertussis</i>	FAM	✓
<i>Bordetella holmesii</i>	ROX	✓
Internal control	HEX/VIC	✓

### Highlights

- All the reagents included and ready to use, even positive control.
- Only 5 µl of extracted DNA required.
- Detection of IS (insertion sequences): higher sensitivity.
- Internal control included for confirmation of DNA extraction and amplification.
- Execution time of about 60 minutes.
- CE IVD marked
- Differential detection of the 3 species of *Bordetella*: better patient management.
- Many different types of samples validated: nasopharyngeal swabs, lavages and aspirates.
- 12 months shelf life.
- Compatible with several Real Time PCR instruments: CFX96 Real-Time PCR Detection System (BioRad); QuantStudio 5 Real-Time PCR System (Applied Biosystems); Gentier 96 Real-Time PCR (Tianlong) and Gentier 48 E Real-Time PCR (Tianlong).

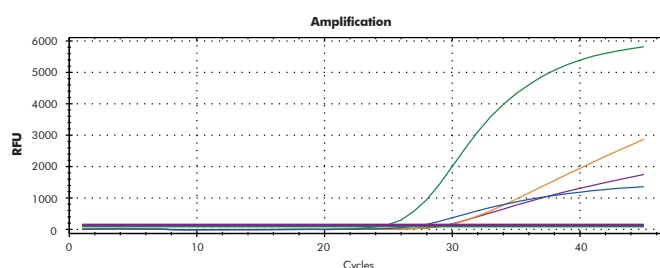
### Results

External Evaluation, n = 111 samples

*B. pertussis*: 97.5% sensitivity, 100% specificity

*B. parapertussis*: 100% sensitivity, 100% specificity

*B. holmesii*: 87.5% sensitivity, 100% specificity



Result for positive control: — *B. pertussis*; — *B. parapertussis*  
— *B. holmesii*; — Internal control