# Intended Results / Panel Composition

<table>
<thead>
<tr>
<th>Sample Code</th>
<th>Sample Content</th>
<th>Matrix</th>
<th>Sample Relationships</th>
<th>Detection Frequency</th>
<th>Sample Status</th>
<th>Percentage Correct (All)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPDNA18S-01</td>
<td>B. pertussis</td>
<td>Saline</td>
<td>DS1_2</td>
<td>Frequently Detected</td>
<td>CORE</td>
<td>98.4</td>
</tr>
<tr>
<td>BPDNA18S-02</td>
<td>B. pertussis</td>
<td>Saline</td>
<td>DS1_3</td>
<td>Frequently Detected</td>
<td>CORE</td>
<td>96.2</td>
</tr>
<tr>
<td>BPDNA18S-03</td>
<td>B. pertussis</td>
<td>Saline</td>
<td>DS1_1</td>
<td>Frequently Detected</td>
<td>CORE</td>
<td>98.4</td>
</tr>
<tr>
<td>BPDNA18S-04</td>
<td>B. pertussis</td>
<td>Liquid Amies</td>
<td>DS2_1</td>
<td>Frequently Detected</td>
<td>CORE</td>
<td>99.5</td>
</tr>
<tr>
<td>BPDNA18S-05</td>
<td>B. pertussis</td>
<td>Liquid Amies</td>
<td>DS2_3</td>
<td>Detected</td>
<td>CORE</td>
<td>93.4</td>
</tr>
<tr>
<td>BPDNA18S-06</td>
<td>B. holmesii (IS481+)</td>
<td>Saline</td>
<td>Negative</td>
<td>EDUCATIONAL</td>
<td>50.3</td>
<td></td>
</tr>
<tr>
<td>BPDNA18S-07</td>
<td>H. influenzae</td>
<td>Saline</td>
<td>Negative</td>
<td>CORE</td>
<td>98.9</td>
<td></td>
</tr>
<tr>
<td>BPDNA18S-08</td>
<td>B. parapertussis</td>
<td>Saline</td>
<td>Negative</td>
<td>CORE</td>
<td>91.3</td>
<td></td>
</tr>
<tr>
<td>BPDNA18S-09</td>
<td>Bordetella negative</td>
<td>Saline</td>
<td>Negative</td>
<td>CORE</td>
<td>97.8</td>
<td></td>
</tr>
<tr>
<td>BPDNA18S-10</td>
<td>B. pertussis</td>
<td>Liquid Amies</td>
<td>DS2_2</td>
<td>Frequently Detected</td>
<td>CORE</td>
<td>99.5</td>
</tr>
</tbody>
</table>

**[1] Sample Relationships**: Indicates the relationships of the samples within this challenge. Dilution series are indicted by 'DS1' with each panel member in the dilution series represented by a number in order of titre, where DS1_1 represents the highest titre within that dilution series. Further dilution series are indicated by 'DS2' 'DS3' etc. If one duplicate pair is present this is indicated by 'D1'. Further duplicate pairs are indicated by 'D2', 'D3' etc.

**[2] Detection Frequency**: To aid qualitative analysis each panel member is assigned a frequency of detection. This is based on the peer group consensus of all qualitative results returned from participants within the EQA challenge / distribution.

**[3] Sample Status**: EQA samples are defined as "CORE" or "EDUCATIONAL". Core proficiency samples are reviewed by the QCMD Scientific Expert(s). This is on the basis of scientific information, clinical relevance, current literature and, where appropriate, professional clinical guidelines. Participating laboratories are expected to report core proficiency samples correctly within the EQA challenge / distribution.

**[4] Percentage Correct (All)**: Percentage of datasets (%) reporting the correct qualitative result and the total number of datasets (n) reported for each panel member.

For further details please refer to the current participant manual.
# Your Summary Results

## EQA Assessment Group [1]

GeneProof Real Time PCR kit

## Core Panel Detection (Qualitative) Score [2]

0

## Core Panel Members Results

<table>
<thead>
<tr>
<th>Sample Code</th>
<th>Qualitative Results</th>
<th>Your Quantitative Data (for information only) [3]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reported Value</td>
<td>Unitage</td>
</tr>
<tr>
<td>BPDNA18S-01</td>
<td>98.4</td>
<td>Positive</td>
</tr>
<tr>
<td>BPDNA18S-02</td>
<td>96.2</td>
<td>Positive</td>
</tr>
<tr>
<td>BPDNA18S-03</td>
<td>98.4</td>
<td>Positive</td>
</tr>
<tr>
<td>BPDNA18S-04</td>
<td>99.5</td>
<td>Positive</td>
</tr>
<tr>
<td>BPDNA18S-05</td>
<td>93.4</td>
<td>Positive</td>
</tr>
<tr>
<td>BPDNA18S-07</td>
<td>98.9</td>
<td>Negative</td>
</tr>
<tr>
<td>BPDNA18S-08</td>
<td>91.3</td>
<td>Negative</td>
</tr>
<tr>
<td>BPDNA18S-09</td>
<td>97.8</td>
<td>Negative</td>
</tr>
<tr>
<td>BPDNA18S-10</td>
<td>99.5</td>
<td>Positive</td>
</tr>
</tbody>
</table>

[1] **EQA Assessment Group**: To aid data analysis, participant results are grouped according to the molecular amplification/detection method specified within their molecular workflow for this challenge / distribution. For further details refer to the Additional Information: Individual Panel Member Analysis section of this report.

[2] **Core Panel Detection (Qualitative) Score**: An overall core panel detection score provided per challenge / distribution.

[3] **Quantitative Data (for information only)**: This is the quantitative value, unitage and cycle threshold you provided when you submitted your results. For qualitative programmes this information is not used as part of your formal EQA assessment.

[4] **Percentage Correct (All)**: Percentage of datasets (%) reporting the correct qualitative results for each panel member.

[5] **Your Result**: The qualitative result you reported for each sample within this EQA challenge / distribution.

[6] **Detection Score**: Your detection (qualitative) scores are based on the assigned detection frequency of each panel members, where 0 (zero) is "highly satisfactory" and 3 (three) is "highly unsatisfactory". Scores are provided for individual panel members.

For further details please refer to the current participant manual.
Core Panel Member Score Breakdown

This figure gives you a breakdown of the qualitative detection scores for all qualitative datasets returned within this EQA challenge / distribution independent of the EQA assessment group. Panel detection scores are generated from only those panel members that are defined as "CORE".

For further details please refer to the current participant manual.

My Workflow Details

The details of the workflow(s) used to submit your results for this challenge.

<table>
<thead>
<tr>
<th>Name</th>
<th>Bordetella pertussis/parapertussis PCR Kit (v2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>Targets</td>
<td>B Bordetella parapertussis</td>
</tr>
<tr>
<td></td>
<td>B Bordetella pertussis</td>
</tr>
<tr>
<td>Assays</td>
<td><strong>Extraction</strong> - Manual Extraction Process</td>
</tr>
<tr>
<td></td>
<td>Commercial</td>
</tr>
<tr>
<td></td>
<td>Kit Manufacturer: GeneProof</td>
</tr>
<tr>
<td></td>
<td>Kit Type: PathogenFree DNA Isolation Kit</td>
</tr>
<tr>
<td></td>
<td><strong>Amplification</strong> - Shanghai Hongshi Medical Technology - SLAN</td>
</tr>
<tr>
<td></td>
<td>Commercial</td>
</tr>
<tr>
<td></td>
<td>Kit Manufacturer: GeneProof</td>
</tr>
<tr>
<td></td>
<td>Kit Type: Bordetella pertussis/parapertussis PCR Kit</td>
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<tr>
<td></td>
<td>Kit Version: ISEX</td>
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</table>
Educational Panel Members Results

<table>
<thead>
<tr>
<th>Sample Code</th>
<th>Qualitative Results</th>
<th>Your Quantitative Data (for information only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPDN1A8S-06</td>
<td>50.3 Negative</td>
<td>[1] Quantitative Data (for information only): This is the quantitative value, unitage and cycle threshold you provided when you submitted your results. For qualitative programmes this information is not used as part of your formal EQA assessment.</td>
</tr>
</tbody>
</table>

[1] Quantitative Data (for information only): This is the quantitative value, unitage and cycle threshold you provided when you submitted your results. For qualitative programmes this information is not used as part of your formal EQA assessment.

[2] Percentage Correct (All): Percentage of datasets (%) reporting the correct qualitative results for each panel member.

[3] Your Result: The qualitative result you reported for each sample within this EQA challenge / distribution.

[4] Detection Score: Your detection (qualitative) scores are based on the assigned detection frequency of each panel members, where 0 (zero) is "highly satisfactory" and 3 (three) is "highly unsatisfactory". Scores are provided for individual panel members.

For further details please refer to the current participant manual.

Further Programme Details

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Participants</td>
<td>183..................................................................................</td>
</tr>
<tr>
<td>Number of Countries</td>
<td>29</td>
</tr>
<tr>
<td>Number of Respondents</td>
<td>173</td>
</tr>
<tr>
<td>Number of Datasets Submitted</td>
<td>183</td>
</tr>
<tr>
<td>Qualitative Results Returned</td>
<td>183 (100.0%)</td>
</tr>
</tbody>
</table>

EQA Programme Aims

To assess the proficiency of laboratories in the detection of *Bordetella pertussis*.

Feedback and Enquiries

Participants are encouraged to read the QCMD Participants' Manual, which can be downloaded from the QCMD website.

Any queries about this report should be addressed to the QCMD Neutral Office (neutraloffice@qcmd.org).
Panel member analysis is separated into CORE samples followed by EDUCATIONAL samples.

Additional Core Samples Information

The following section has been categorised as shown below:

Core ► Qualitative

Individual Panel Member Analysis (Qualitative)

Qualitative analysis for each panel member is provided in relation to your EQA assessment group. EQA assessment groups are established using the molecular workflow information reported by all participants within this EQA challenge / distribution. The principal level of assessment is at the individual method level which is defined based on your reported "amplification/detection method" and other laboratories using the same or similar amplification/detection methods.

To allow meaningful assessment at the individual method level the EQA assessment group must consist of 5 or more datasets. If there are not sufficient datasets at the individual method level then your results will be included within a higher EQA assessment group based on whether it is a commercial or in house technology/method. The highest level assessment grouping is "All" participant reported qualitative results.

A breakdown of qualitative results reported by participants on each of the panel members within this EQA challenge / distribution is provided below. You can compare your results to those within your EQA assessment group and those obtained within other EQA assessment groups or to the overall consensus for each sample within this EQA challenge / distribution.
BPDNA18S-01 - Qualitative Results Breakdown

<table>
<thead>
<tr>
<th>Sample Code</th>
<th>Sample Content</th>
<th>Matrix</th>
<th>Sample Relationships</th>
<th>Detection Frequency</th>
<th>Sample Status</th>
<th>Percentage Correct (All)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPDNA18S-01</td>
<td>B. pertussis</td>
<td>Saline</td>
<td>DS1_2</td>
<td>Frequently Detected</td>
<td>CORE</td>
<td>98.4 (183)</td>
</tr>
</tbody>
</table>

- **Commercial**
  - Diagenode: 9 (9%)
  - GeneProof: 6 (6%)
    - GeneProof Real Time PCR kit: 6 (6%)
- **Meridian BioScience**: 6 (6%)
- **R-Biopharm**: 9 (9%)
- **Seegene**: 12 (12%)
  - Seegene Real Time PCR: 11 (11%)
- **TIB MOLBIOL**: 6 (6%)
- **bioMerieux**: 16 (16%)
  - BioFire FilmArray: 7 (7%)
  - bioMerieux R-gene Kit: 9 (9%)
- **In-House**
  - Real-time In-House PCR: 90 (90%)

- **Incorrect**
- **Correct**

<table>
<thead>
<tr>
<th>Incorrect</th>
<th>Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>183</td>
<td>93</td>
</tr>
</tbody>
</table>
### Groups below n=5:
- Altona Diagnostics (n=1), Altona Diagnostics - Altona Diagnostics RealStar (n=1), AmpliSens (n=1), AmpliSens - AmpliSens Real Time PCR (n=1), AusDiagnostics (n=1), AusDiagnostics - AusDiagnostics Easy-Plex (n=1), BD Molecular Diagnostics (n=2), BD Molecular Diagnostics - BD MAX (n=2), Bio-Evolution (n=2), Bio-Evolution - Bio-Evolution Real Time PCR (n=2), BioGX (n=2), BioGX - BioGX Sample Ready (n=2), Cepheid (n=3), Cepheid - Cepheid Smart Reagents (n=3), Certest (n=1), Certest - Certest Real Time PCR (n=1), Eurobio (n=1), Eurobio - Eurobio Real Time PCR (n=1), GenMark Dx (n=1), GenMark Dx - GenMark DX ePlex (n=1), Luminex (n=1), Luminex - Luminex PCR Reagents (n=1), Master Diagnostica (n=1), Master Diagnostica - Master Diagnostica Flow Chip (n=1), Medical Innovation Ventures (n=1), Medical Innovation Ventures - MIV GenoAmp Kit (n=1), PathoFinder (n=2), PathoFinder - PathoFinder Real Time PCR (n=2), PrimerDesign (n=1), PrimerDesign - PrimerDesign Genesig (n=1), Quidel (n=2), Quidel - Quidel AmpliVue (n=1), Quidel - Quidel Solana (n=1), Sacace (n=1), Sacace - Sacace Real TM (n=1), Seegene (n=1), Seegene - Seegene Seeplex (n=1), Vitassay (n=1), Vitassay - Vitassay Real-Time PCR (n=1), fast-track DIAGNOSTICS (n=3), fast-track DIAGNOSTICS - FTD real time PCR (n=3), vircell (n=1), vircell - vircell Speed-oligo (n=1), In-House - Conventional In-House PCR (n=3)

### Groups Rolled Up:
- Diagenode - Diagenode Real Time kit (n=9), Meridian BioScience - Meridian Bioscience illumigene (n=6), R-Biopharm - R-Biopharm RIDA Gene (n=9), TIB MOLBIOL - TIB MOLBIOL LightMix (n=6)
### BPDNA18S-02 - Qualitative Results Breakdown

<table>
<thead>
<tr>
<th>Sample Code</th>
<th>Sample Content</th>
<th>Matrix</th>
<th>Sample Relationships</th>
<th>Detection Frequency</th>
<th>Sample Status</th>
<th>Percentage Correct (All)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPDNA18S-02</td>
<td>B. pertussis</td>
<td>Saline</td>
<td>DS1_3</td>
<td>Frequently Detected</td>
<td>CORE</td>
<td>96.2</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Incorrect</th>
<th>Correct</th>
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<tbody>
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<td>6</td>
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<td>7</td>
<td>9</td>
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<tr>
<td>9</td>
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</table>

- **All**
  - **Commercial**
    - Diagenode
    - GeneProof
    - GeneProof Real Time PCR kit
    - Meridian BioScience
    - R-Biopharm
    - Seegene
    - Seegene Real Time PCR
    - TIB MOLBIOL
    - bioMerieux
    - BioFire FilmArray
    - bioMerieux R-gene Kit
  - **In-House**
    - Real-time In-House PCR
Groups below n=5: Altona Diagnostics (n=1), Altona Diagnostics - Altona Diagnostics RealStar (n=1), AmpliSens (n=1), AmpliSens - AmpliSens Real Time PCR (n=1), AusDiagnostics (n=1), AusDiagnostics - AusDiagnostics Easy-Plex (n=1), BD Molecular Diagnostics (n=2), BD Molecular Diagnostics - BD MAX (n=2), Bio-Evolution (n=2), Bio-Evolution - Bio-Evolution Real Time PCR (n=2), BioGX (n=2), BioGX - BioGX Sample-Ready (n=2), Cepheid (n=3), Cepheid - Cepheid Smart Reagents (n=3), Certest (n=1), Certest - Certest Real Time PCR (n=1), Eurobio (n=1), Eurobio - Eurobio Real Time PCR (n=1), GenMark Dx (n=1), GenMark Dx - GenMark DX ePlex (n=1), Luminex (n=1), Luminex - Luminex PCR Reagents (n=1), Master Diagnostica (n=1), Master Diagnostica - Master Diagnostica Flow Chip (n=1), Medical Innovation Ventures - MIV GenoAmp Kit (n=1), PathoFinder (n=2), PathoFinder - PathoFinder Real Time PCR (n=2), PrimerDesign (n=1), PrimerDesign - PrimerDesign Genesig (n=1), Quidel (n=2), Quidel - Quidel AmpliVue (n=1), Quidel - Quidel Solana (n=1), Sacace (n=1), Sacace - Sacace Real TM (n=1), Seegene - Seegene Seeplex (n=1), Vitassay (n=1), Vitassay - Vitassay Real-Time PCR (n=1), fast-track DIAGNOSTICS (n=3), fast-track DIAGNOSTICS - FTD real time PCR (n=3), vircell (n=1), vircell - vircell Speed-oligo (n=1), In-House - Conventional In-House PCR (n=3)

Groups Rolled Up: Diagenode - Diagenode Real Time kit (n=9), Meridian BioScience - Meridian Bioscience illumigene (n=6), R-Biopharm - R-Biopharm RIDA Gene (n=9), TIB MOLBIOL - TIB MOLBIOL LightMix (n=6)
<table>
<thead>
<tr>
<th>Sample Code</th>
<th>Sample Content</th>
<th>Matrix</th>
<th>Sample Relationships</th>
<th>Detection Frequency</th>
<th>Sample Status</th>
<th>Percentage Correct (All) (%)</th>
<th>(n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPDNA18S-03</td>
<td>B. pertussis</td>
<td>Saline</td>
<td>DS1_1</td>
<td>Frequently Detected</td>
<td>CORE</td>
<td>98.4</td>
<td>183</td>
</tr>
</tbody>
</table>

![Bar chart showing percentage correct and incorrect results for BPDNA18S-03.]
**Individual Report**

**QCMD 2018 Bordetella pertussis DNA EQA Programme**

<table>
<thead>
<tr>
<th>Catalogue Code:</th>
<th>Ref Code:</th>
<th>Challenge:</th>
<th>Analysis Type:</th>
<th>Dataset:</th>
<th>Report UID:</th>
<th>Laboratory:</th>
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</thead>
<tbody>
<tr>
<td>QAB094132</td>
<td>BPDNA18</td>
<td>S</td>
<td>Qualitative</td>
<td>218223</td>
<td>2677/218223/1499</td>
<td>CZ023</td>
</tr>
</tbody>
</table>

**Groups below n=5:**
- Altona Diagnostics (n=1), Altona Diagnostics - Altona Diagnostics RealStar (n=1), AmpliSens (n=1), AmpliSens - AmpliSens Real Time PCR (n=1), AusDiagnostics (n=1), AusDiagnostics - AusDiagnostics Easy-Plex (n=1), BD Molecular Diagnostics (n=2), BD Molecular Diagnostics - BD MAX (n=2), Bio-Evolution (n=2), Bio-Evolution - Bio-Evolution Real Time PCR (n=2), BioGX (n=2), BioGX - BioGX Sample-Ready (n=2), Cepheid (n=3), Cepheid - Cepheid Smart Reagents (n=3), Certest (n=1), Certest - Certest Real Time PCR (n=1), Eurobio (n=1), Eurobio - Eurobio Real Time PCR (n=1), GenMark Dx (n=1), GenMark Dx - GenMark DX ePlex (n=1), Luminex (n=1), Luminex - Luminex PCR Reagents (n=1), Master Diagnostica (n=1), Master Diagnostica - Master Diagnostica Flow Chip (n=1), Medical Innovation Ventures (n=1), Medical Innovation Ventures - MIV GenoAmp Kit (n=1), PathoFinder (n=2), PathoFinder - PathoFinder Real Time PCR (n=2), PrimerDesign (n=1), PrimerDesign - PrimerDesign Genesig (n=1), Quidel (n=2), Quidel - Quidel AmpliVue (n=1), Quidel - Quidel Solana (n=1), Sacace (n=1), Sacace - Sacace Real TM (n=1), Seegene - Seegene Seeplex (n=1), Vitassay (n=1), Vitassay - Vitassay Real-Time PCR (n=1), fast-track DIAGNOSTICS (n=3), fast-track DIAGNOSTICS - FTD real time PCR (n=3), vircell (n=1), vircell - vircell Speed-oligo (n=1), In-House - Conventional In-House PCR (n=3)

**Groups Rolled Up:**
- Diagenode - Diagenode Real Time kit (n=9), Meridian BioScience - Meridian Bioscience illumigene (n=6), R-Biopharm - R-Biopharm RIDA Gene (n=9), TIB MOLBIOL - TIB MOLBIOL LightMix (n=6)
### BPDNA18S-04 - Qualitative Results Breakdown

<table>
<thead>
<tr>
<th>Sample Code</th>
<th>Sample Content</th>
<th>Matrix</th>
<th>Sample Relationships</th>
<th>Detection Frequency</th>
<th>Sample Status</th>
<th>Percentage Correct (All)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPDNA18S-04</td>
<td>B. pertussis</td>
<td>Liquid Amies</td>
<td>DS2_1</td>
<td>Frequently Detected</td>
<td>CORE</td>
<td>99.5</td>
</tr>
</tbody>
</table>

#### All

- **Commercial**
  - Diagenode
  - GeneProof
    - GeneProof Real Time PCR kit
  - Meridian BioScience
  - R-Biopharm
  - Seegene
    - Seegene Real Time PCR
  - TIB MOLBIOL
  - bioMerieux
    - BioFire FilmArray
    - bioMerieux R-gene Kit
- **In-House**
  - Real-time In-House PCR

- Incorrect
- Correct

- Total Number of Values in Groups: 183
- Correct: 183, Incorrect: 0
- Percentage Correct:
  - All: 99.5%

---

**QCMD 2018 Bordetella pertussis DNA EQA Programme**

Catalogue Code: QAB094132  
Ref Code: BPDNA18  
Challenge: S  
Analysis Type: Qualitative  
Dataset: 218223  
Report UID: 2677/218223/1499  
Laboratory: CZ023  

QCMD, Technology Terrace, Todd Campus, West of Scotland Science Park, Glasgow, G20 0XA  
Tel: +44 (0) 141 945 6474, Fax: +44 (0) 141 945 5795  
Web: www.qcmd.org  

Report authorised by the QCMD Executive (1)  
A UKAS accredited proficiency testing provider No.4385
**Groups below n=5:**
- Altona Diagnostics (n=1), Altona Diagnostics - Altona Diagnostics RealStar (n=1), AmpliSens (n=1), AmpliSens - AmpliSens Real Time PCR (n=1), AusDiagnostics (n=1), AusDiagnostics - AusDiagnostics Easy-Plex (n=1), BD Molecular Diagnostics (n=2), BD Molecular Diagnostics - BD MAX (n=2), Bio-Evolution (n=2), Bio-Evolution - Bio-Evolution Real Time PCR (n=2), BioGX (n=2), BioGX - BioGX Sample-Ready (n=2), Cepheid (n=3), Cepheid - Cepheid Smart Reagents (n=3), Certest (n=1), Certest - Certest Real Time PCR (n=1), Eurobio (n=1), Eurobio - Eurobio Real Time PCR (n=1), GenMark Dx (n=1), GenMark Dx - GenMark DX ePlex (n=1), Luminex (n=1), Luminex - Luminex PCR Reagents (n=1), Master Diagnostica (n=1), Master Diagnostica - Master Diagnostica Flow Chip (n=1), Medical Innovation Ventures (n=1), Medical Innovation Ventures - MIV GenoAmp Kit (n=1), PathoFinder (n=2), PathoFinder - PathoFinder Real Time PCR (n=2), PrimerDesign (n=1), PrimerDesign - PrimerDesign Genesig (n=1), Quidel (n=2), Quidel - Quidel AmpliVue (n=1), Quidel - Quidel Solana (n=1), Sacace (n=1), Sacace - Sacace Real TM (n=1), Seegene - Seegene Seeplex (n=1), Vitassay (n=1), Vitassay - Vitassay Real-Time PCR (n=1), fast-track DIAGNOSTICS (n=3), fast-track DIAGNOSTICS - FTD real time PCR (n=3), vircell (n=1), vircell - vircell Speed-oligo (n=1), In-House - Conventional In-House PCR (n=3)

**Groups Rolled Up:**
- Diagenode - Diagenode Real Time kit (n=9), Meridian BioScience - Meridian Bioscience illumigene (n=6), R-Biopharm - R-Biopharm RIDA Gene (n=9), TIB MOLBIOL - TIB MOLBIOL LightMix (n=6)
### BPDNA18S-05 - Qualitative Results Breakdown

<table>
<thead>
<tr>
<th>Sample Code</th>
<th>Sample Content</th>
<th>Matrix</th>
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<th>Detection Frequency</th>
<th>Sample Status</th>
<th>Percentage Correct (All)</th>
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<tbody>
<tr>
<td>BPDNA18S-05</td>
<td>B. pertussis</td>
<td>Liquid Amies</td>
<td>DS2_3</td>
<td>Detected</td>
<td>CORE</td>
<td>93.4% 183</td>
</tr>
</tbody>
</table>

#### Number of Values in Groups

<table>
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<th>Correct</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>0</td>
<td>87</td>
</tr>
</tbody>
</table>

- **Commercial**
  - Diagenode
  - GeneProof
    - GeneProof Real Time PCR kit
  - Meridian BioScience
  - R-Biopharm
  - Seegene
    - Seegene Real Time PCR
  - TIB MOLBIOL
  - bioMerieux
    - BioFire FilmArray
    - bioMerieux R-gene Kit
- **In-House**
  - Real-time In-House PCR

**Percentage Correct**: 93.4%

**Number of Values in Groups**: 183
### Groups below n=5:
- Altona Diagnostics (n=1), Altona Diagnostics - Altona Diagnostics RealStar (n=1), AmpliSens (n=1), AmpliSens - AmpliSens Real Time PCR (n=1), AusDiagnostics (n=1), AusDiagnostics - AusDiagnostics Easy-Plex (n=1), BD Molecular Diagnostics (n=2), BD Molecular Diagnostics - BD MAX (n=2), Bio-Evolution (n=2), Bio-Evolution - Bio-Evolution Real Time PCR (n=2), BioGX (n=2), BioGX - BioGX Sample-Ready (n=2), Cepheid (n=3), Cepheid - Cepheid Smart Reagents (n=3), Certest (n=1), Certest - Certest Real Time PCR (n=1), Eurobio (n=1), Eurobio - Eurobio Real Time PCR (n=1), GenMarkDx (n=1), GenMarkDx - GenMarkDX ePlex (n=1), Luminex (n=1), Luminex - Luminex PCR Reagents (n=1), Master Diagnostica (n=1), Master Diagnostica - Master Diagnostica Flow Chip (n=1), Medical Innovation Ventures (n=1), Medical Innovation Ventures - MIV GenoAmp Kit (n=1), PathoFinder (n=2), PathoFinder - PathoFinder Real Time PCR (n=2), PrimerDesign (n=1), PrimerDesign - PrimerDesign Genesig (n=1), Quidel (n=2), Quidel - Quidel AmpliVue (n=1), Quidel - Quidel Solana (n=1), Sacace (n=1), Sacace - Sacace Real TM (n=1), Seegene - Seegene Seeplex (n=1), Vitassay (n=1), Vitassay - Vitassay Real-Time PCR (n=1), fast-track DIAGNOSTICS (n=3), fast-track DIAGNOSTICS - FTD real time PCR (n=3), in-House (n=1), in-House - in-House Conventional In-House PCR (n=3)

### Groups Rolled Up:
- Diagenode - Diagenode Real Time Kit (n=9), Meridian BioScience - Meridian Bioscience illumigene (n=6), R-Biopharm - R-Biopharm RIDA Gene (n=9), TIB MOLBIOL - TIB MOLBIOL LightMix (n=6)
### BPDNA18S-07 - Qualitative Results Breakdown

<table>
<thead>
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<th>Detection Frequency</th>
<th>Sample Status</th>
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<tbody>
<tr>
<td>BPDNA18S-07</td>
<td>H. influenzae</td>
<td>Saline</td>
<td>Negative</td>
<td>CORE</td>
<td>98.9</td>
<td>183</td>
</tr>
</tbody>
</table>

#### Number of Values in Groups

- **Commercial**
  - Diagenode: 93
  - GeneProof: 9
  - GeneProof Real Time PCR kit: 6
  - Meridian BioScience: 6
  - R-Biopharm: 6
  - Seegene: 12
  - Seegene Real Time PCR: 11
  - TIB MOLBIOL: 6
  - bioMerieux: 16
  - BioFire FilmArray: 7
  - bioMerieux R-gene Kit: 9
- **In-House**
  - Real-time In-House PCR: 87

**Incorrect**

**Correct**

---

**Individual Report**

**QCMD 2018 Bordetella pertussis DNA EQA Programme**

**Catalogue Code:** QAB094132  
**Ref Code:** BPDNA18  
**Challenge:** S  
**Analysis Type:** Qualitative  
**Dataset:** 218223  
**Report UID:** 2677/218223/1499  
**Laboratory:** CZ023

**QCMD, Technology Terrace, Todd Campus, West of Scotland Science Park, Glasgow, G20 0XA**

**Tel: +44 (0) 141 945 6474, Fax: +44 (0) 141 945 5795**

**Web: www.qcmd.org**

**Page 16 of 25**
### Groups below n=5:
- Altona Diagnostics (n=1), Altona Diagnostics - Altona Diagnostics RealStar (n=1), AmpliSens (n=1), AmpliSens - AmpliSens Real Time PCR (n=1), AusDiagnostics (n=1), AusDiagnostics - AusDiagnostics Easy-Plex (n=1), BD Molecular Diagnostics (n=2), BD Molecular Diagnostics - BD MAX (n=2), Bio-Evolution (n=2), Bio-Evolution - Bio-Evolution Real Time PCR (n=2), BioGX (n=2), BioGX - BioGX Sample-Ready (n=2), Cepheid (n=3), Cepheid - Cepheid Smart Reagents (n=3), Certest (n=1), Certest - Certest Real Time PCR (n=1), Eurobio (n=1), Eurobio - Eurobio Real Time PCR (n=1), GenMark Dx (n=1), GenMark Dx - GenMark DX ePlex (n=1), Luminex (n=1), Luminex - Luminex PCR Reagents (n=1), Master Diagnostica (n=1), Master Diagnostica - Master Diagnostica Flow Chip (n=1), Medical Innovation Ventures (n=1), Medical Innovation Ventures - MIV GenoAmp Kit (n=1), PathoFinder (n=2), PathoFinder - PathoFinder Real Time PCR (n=2), PrimerDesign (n=1), PrimerDesign - PrimerDesign Genesig (n=1), Quidel (n=2), Quidel - Quidel AmpliVue (n=1), Quidel - Quidel Solana (n=1), Sacace (n=1), Sacace - Sacace Real TM (n=1), Seegene - Seegene Seeplex (n=1), Vitassay (n=1), Vitassay - Vitassay Real-Time PCR (n=1), fast-track DIAGNOSTICS (n=3), fast-track DIAGNOSTICS - FTD real time PCR (n=3), vircell (n=1), vircell - vircell Speed-oligo (n=1), In-House - Conventional In-House PCR (n=3)

### Groups Rolled Up:
- Diagenode - Diagenode Real Time kit (n=9), Meridian BioScience - Meridian Bioscience illumigene (n=6), R-Biopharm - R-Biopharm RIDA Gene (n=9), TIB MOLBIOL - TIB MOLBIOL LightMix (n=6)
### BPDNA18S-08 - Qualitative Results Breakdown

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<tbody>
<tr>
<td>BPDNA18S-08</td>
<td>B. parapertussis</td>
<td>Saline</td>
<td>Negative</td>
<td>CORE</td>
<td>91.3</td>
<td>183</td>
</tr>
</tbody>
</table>

#### Commercial
- Digenode
- GeneProof
- GeneProof Real Time PCR kit
- Meridian BioScience
- R-Biopharm
- Seegene
- Seegene Real Time PCR
- TIB MOLBIOL
- bioMerieux
- BioFire FilmArray
- bioMerieux R-gene Kit

#### In-House
- Real-time In-House PCR

---

<table>
<thead>
<tr>
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<th>Correct</th>
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<tr>
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<td>183</td>
<td>87</td>
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</tbody>
</table>
Groups below n=5:
- Altona Diagnostics (n=1), Altona Diagnostics - Altona Diagnostics RealStar (n=1), AmpliSens (n=1), AmpliSens - AmpliSens Real Time PCR (n=1), AusDiagnostics (n=1), AusDiagnostics - AusDiagnostics Easy-Plex (n=1), BD Molecular Diagnostics (n=2), BD Molecular Diagnostics - BD MAX (n=2), Bio-Evolution (n=2), Bio-Evolution - Bio-Evolution Real Time PCR (n=2), BioGX (n=2), BioGX - BioGX Sample-Ready (n=2), Cepheid (n=3), Cepheid - Cepheid Smart Reagents (n=3), Certest (n=1), Certest - Certest Real Time PCR (n=1), Eurobio (n=1), Eurobio - Eurobio Real Time PCR (n=1), GenMark Dx (n=1), GenMark Dx - GenMark DX ePlex (n=1), Luminex (n=1), Luminex - Luminex PCR Reagents (n=1), Master Diagnostica (n=1), Master Diagnostica - Master Diagnostica Flow Chip (n=1), Medical Innovation Ventures (n=1), Medical Innovation Ventures - MIV GenoAmp Kit (n=1), PathoFinder (n=2), PathoFinder - PathoFinder Real Time PCR (n=2), PrimerDesign (n=1), PrimerDesign - PrimerDesign Genesig (n=1), Quidel (n=2), Quidel - Quidel AmpliVue (n=1), Quidel - Quidel Solana (n=1), Sacace (n=1), Sacace - Sacace Real TM (n=1), Seegene - Seegene Seeplex (n=1), Vitassay (n=1), Vitassay - Vitassay Real-Time PCR (n=1), fast-track DIAGNOSTICS (n=3), fast-track DIAGNOSTICS - FTD real time PCR (n=3), vircell (n=1), vircell - vircell Speed-oligo (n=1), In-House - Conventional In-House PCR (n=3)

Groups Rolled Up:
- Diagenode - Diagenode Real Time kit (n=9), Meridian BioScience - Meridian Bioscience illumigene (n=6), R-Biopharm - R-Biopharm RIDA Gene (n=9), TIB MOLBIOL - TIB MOLBIOL LightMix (n=6)
### BPDNA18S-09 - Qualitative Results Breakdown

<table>
<thead>
<tr>
<th>Sample Code</th>
<th>Sample Content</th>
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<th>Sample Relationships</th>
<th>Detection Frequency</th>
<th>Sample Status</th>
<th>Percentage Correct (All)</th>
<th>(n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPDNA18S-09</td>
<td>Bordetella negative</td>
<td>Saline</td>
<td></td>
<td>Negative</td>
<td>CORE</td>
<td>97.8</td>
<td>183</td>
</tr>
</tbody>
</table>

- **Commercial**
  - Diagenode
  - GeneProof
    - GeneProof Real Time PCR kit
  - Meridian BioScience
  - R-Biopharm
  - Seegene
    - Seegene Real Time PCR
  - TIB MOLBIOL
  - bioMerieux
    - BioFire FilmArray
    - bioMerieux R-gene Kit
- **In-House**
  - Real-time In-House PCR

#### Number of Values in Groups

- Incorrect: 0%
- Correct: 100%

- Total Values: 183
  - Incorrect: 9%
  - Correct: 91%

- Number of Values in Groups:
  - 93
  - 9
  - 6
  - 6
  - 6
  - 6
  - 6
  - 9
  - 9
  - 12
  - 11
  - 16
  - 7
  - 9
  - 90
  - 87
### Groups below \( n = 5 \):

- Altona Diagnostics \((n = 1)\), Altona Diagnostics - Altona Diagnostics RealStar \((n = 1)\)
- AmpliSens \((n = 1)\), AmpliSens - AmpliSens Real Time PCR \((n = 1)\)
- AusDiagnostics \((n = 1)\), AusDiagnostics - AusDiagnostics Easy-Plex \((n = 1)\)
- BD Molecular Diagnostics \((n = 2)\), BD Molecular Diagnostics - BD MAX \((n = 2)\), BD Molecular Diagnostics - Bio-Evolution \((n = 2)\), BD Molecular Diagnostics - Bio-Evolution Real Time PCR \((n = 2)\)
- BioGX \((n = 2)\), BioGX - BioGX Sample-Ready \((n = 2)\)
- Cepheid - Cepheid Smart Reagents \((n = 3)\), Cepheid - Cepheid Smart Reagents - Cepheid Smart Reagents ePlex \((n = 1)\), Cepheid - Cepheid Smart Reagents Real Time PCR \((n = 1)\), Cepheid - Cepheid Smart Reagents - Cepheid Smart Reagents ePlex \((n = 1)\), Cepheid - Cepheid Smart Reagents Real Time PCR \((n = 1)\)
- Eurobio - Eurobio Real Time PCR \((n = 1)\), Eurobio - Eurobio Real Time PCR - Eurobio Real Time PCR ePlex \((n = 1)\), Eurobio - Eurobio Real Time PCR - Eurobio Real Time PCR ePlex \((n = 1)\), Eurobio - Eurobio Real Time PCR - Eurobio Real Time PCR ePlex \((n = 1)\), Eurobio - Eurobio Real Time PCR - Eurobio Real Time PCR ePlex \((n = 1)\)
- GenMark Dx \((n = 1)\), GenMark Dx - GenMark DX ePlex \((n = 1)\), GenMark Dx - GenMark DX ePlex \((n = 1)\), GenMark Dx - GenMark DX ePlex \((n = 1)\), GenMark Dx - GenMark DX ePlex \((n = 1)\)
- Master Diagnostica \((n = 1)\), Master Diagnostica - Master Diagnostica Flow Chip \((n = 1)\)
- Medical Innovation Ventures - MIV GenoAmp Kit \((n = 1)\), Medical Innovation Ventures - MIV GenoAmp Kit - MIV GenoAmp Kit ePlex \((n = 1)\), Medical Innovation Ventures - MIV GenoAmp Kit - MIV GenoAmp Kit ePlex \((n = 1)\), Medical Innovation Ventures - MIV GenoAmp Kit - MIV GenoAmp Kit ePlex \((n = 1)\), Medical Innovation Ventures - MIV GenoAmp Kit - MIV GenoAmp Kit ePlex \((n = 1)\)
- PathoFinder \((n = 2)\), PathoFinder\( - \)PathoFinder Real Time PCR \((n = 2)\), PathoFinder\( - \)PathoFinder Real Time PCR \((n = 2)\), PathoFinder\( - \)PathoFinder Real Time PCR \((n = 2)\), PathoFinder\( - \)PathoFinder Real Time PCR \((n = 2)\), PathoFinder\( - \)PathoFinder Real Time PCR \((n = 2)\)
- PrimerDesign \((n = 1)\), PrimerDesign - PrimerDesign Genesig \((n = 1)\)
- Quidel \((n = 2)\)
- Quidel - Quidel AmpliVue \((n = 1)\), Quidel - Quidel AmpliVue \((n = 1)\)
- Quidel - Quidel Solana \((n = 1)\)
- Sacace \((n = 1)\)
- Sacace - Sacace Real TM \((n = 1)\)
- Seegene - Seegene Seeplex \((n = 1)\)
- Vitassay - Vitassay Real-Time PCR \((n = 1)\)
- fast-track DIAGNOSTICS \((n = 3)\)
- fast-track DIAGNOSTICS - FTD real time PCR \((n = 3)\)
- fast-track DIAGNOSTICS - FTD real time PCR \((n = 3)\)
- fast-track DIAGNOSTICS - FTD real time PCR \((n = 3)\)
- fast-track DIAGNOSTICS - FTD real time PCR \((n = 3)\)
- fast-track DIAGNOSTICS - FTD real time PCR \((n = 3)\)
- fast-track DIAGNOSTICS - FTD real time PCR \((n = 3)\)
- fast-track DIAGNOSTICS - FTD real time PCR \((n = 3)\)
- fast-track DIAGNOSTICS - FTD real time PCR \((n = 3)\)
- fast-track DIAGNOSTICS - FTD real time PCR \((n = 3)\)
- fast-track DIAGNOSTICS - FTD real time PCR \((n = 3)\)
- fast-track DIAGNOSTICS - FTD real time PCR \((n = 3)\)
- fast-track DIAGNOSTICS - FTD real time PCR \((n = 3)\)
- fast-track DIAGNOSTICS - FTD real time PCR \((n = 3)\)
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- fast-track DIAGNOSTICS - FTD real time PCR \((n = 3)\)
- fast-track DIAGNOSTICS - FTD real time PCR \((n = 3)\)
- fast-track DIAGNOSTICS - FTD real time PCR \((n = 3)\)
- fast-track DIAGNOSTICS - FTD real time PCR \((n = 3)\)
- fast-track DIAGNOSTICS - FTD real time PCR \((n = 3)\)
- fast-track DIAGNOSTICS - FTD real time PCR \((n = 3)\)
- In-House - Conventional In-House PCR \((n = 3)\)

### Groups Rolled Up:

- Diagenode - Diagenode Real Time Kit \((n = 9)\), Meridian BioScience - Meridian BioScience illumigene \((n = 6)\), R-Biopharm - R-Biopharm RIDA Gene \((n = 9)\), TIB MOLBIOL - TIB MOLBIOL LightMix \((n = 6)\)
### BPDNA18S-10 - Qualitative Results Breakdown

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<th>Sample Content</th>
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<th>Sample Status</th>
<th>Percentage Correct (All)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPDNA18S-10</td>
<td>B. pertussis</td>
<td>Liquid Amies</td>
<td>DS2_2</td>
<td>Frequently Detected</td>
<td>CORE</td>
<td>99.5%</td>
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</tbody>
</table>

#### Number of Values in Groups

<table>
<thead>
<tr>
<th>Incorrect</th>
<th>Correct</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>6</td>
<td>95</td>
</tr>
<tr>
<td>90</td>
<td>87</td>
</tr>
</tbody>
</table>

#### Commercial

- **Diagenode**: 93 values, 95 correct
- **GeneProof**: 6 values, 9 correct
- **Seegene Real Time PCR kit**: 6 values, 9 correct

#### In-House

- **Real-time In-House PCR**: 90 values, 87 correct
**Groups below n=5:**
- Altona Diagnostics (n=1), Altona Diagnostics - Altona Diagnostics RealStar (n=1), AmpliSens (n=1), AmpliSens - AmpliSens Real Time PCR (n=1), AusDiagnostics (n=1), AusDiagnostics - AusDiagnostics Easy-Plex (n=1), BD Molecular Diagnostics (n=2), BD Molecular Diagnostics - BD MAX (n=2), Bio-Evolution (n=2), Bio-Evolution - Bio-Evolution Real Time PCR (n=2), BioGX (n=2), BioGX - BioGX Sample-Ready (n=2), Cepheid (n=3), Cepheid - Cepheid Smart Reagents (n=3), Certest (n=1), Certest - Certest Real Time PCR (n=1), Eurobio (n=1), Eurobio - Eurobio Real Time PCR (n=1), GenMark Dx (n=1), GenMark Dx - GenMark DX ePlex (n=1), Luminex (n=1), Luminex - Luminex PCR Reagents (n=1), Master Diagnostica (n=1), Master Diagnostica - Master Diagnostica Flow Chip (n=1), Medical Innovation Ventures (n=1), Medical Innovation Ventures - MIV GenoAmp Kit (n=1), PathoFinder (n=2), PathoFinder - PathoFinder Real Time PCR (n=2), PrimerDesign (n=1), PrimerDesign - PrimerDesign Genesig (n=1), Quidel (n=2), Quidel - Quidel AmpliVue (n=1), Quidel - Quidel Solana (n=1), Sacace (n=1), Sacace - Sacace Real TM (n=1), Seegene - Seegene Seeplex (n=1), Vitassay (n=1), Vitassay - Vitassay Real-Time PCR (n=1), fast-track DIAGNOSTICS (n=3), fast-track DIAGNOSTICS - FTD real time PCR (n=3), in-House - Conventional In-House PCR (n=3)

**Groups Rolled Up:**
- Diagenode - Diagenode Real Time kit (n=9), Meridian BioScience - Meridian Bioscience illumigene (n=6), R-Biopharm - R-Biopharm RIDA Gene (n=9), TIB MOLBIOL - TIB MOLBIOL LightMix (n=6)

**Additional Educational Samples Information**

The following section has been categorised as shown below:

Educational ► Qualitative

**Individual Panel Member Analysis (Qualitative)**

Qualitative analysis for each panel member is provided in relation to your EQA assessment group. EQA assessment groups are established using the molecular workflow information reported by all participants within this EQA challenge / distribution. The principal level of assessment is at the individual method level which is defined based on your reported "amplification/detection method" and other laboratories using the same or similar amplification/detection methods.

To allow meaningful assessment at the individual method level the EQA assessment group must consist of 5 or more datasets. If there are not sufficient datasets at the individual method level then your results will be included within a higher EQA assessment group based on whether it is a commercial or in house technology/method. The highest level assessment grouping is "All" participant reported qualitative results.

A breakdown of qualitative results reported by participants on each of the panel members within this EQA challenge / distribution is provided below. You can compare your results to those within your EQA assessment group and those obtained within other EQA assessment groups or to the overall consensus for each sample within this EQA challenge / distribution.
## BPDNA18S-06 - Qualitative Results Breakdown

<table>
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<th>Sample Code</th>
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<th>Sample Status</th>
<th>Percentage Correct (All)</th>
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<tbody>
<tr>
<td>BPDNA18S-06</td>
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<td>Saline</td>
<td>Negative</td>
<td>EDUCATIONAL</td>
<td>50.3</td>
<td>183</td>
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</tbody>
</table>

### Number of Values in Groups

- Incorrect: 93
- Correct: 99

### Number of Values in Groups by Company

- Diagenode: 9
- GeneProof: 6
- Meridian BioScience: 9
- R-Biopharm: 9
- Seegene: 12
- Seegene Real Time PCR: 11
- TIB MOLBIOL: 6
- bioMerieux: 16
- BioFire FilmArray: 7
- bioMerieux R-gene Kit: 9
- In-House: 90
- Real-time In-House PCR: 87

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**Incorrect**  | **Correct**
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**Groups below n=5:**
- Altona Diagnostics (n=1), Altona Diagnostics - Altona Diagnostics RealStar (n=1), AmpliSens (n=1), AmpliSens - AmpliSens Real Time PCR (n=1), AusDiagnostics (n=1), AusDiagnostics - AusDiagnostics Easy-Plex (n=1), BD Molecular Diagnostics (n=2), BD Molecular Diagnostics - BD MAX (n=2), Bio-Evolution (n=2), Bio-Evolution - Bio-Evolution Real Time PCR (n=2), BioGX (n=2), BioGX - BioGX Sample-Ready (n=2), Cepheid (n=3), Cepheid - Cepheid Smart Reagents (n=3), Certest (n=1), Certest - Certest Real Time PCR (n=1), Eurobio (n=1), Eurobio - Eurobio Real Time PCR (n=1), GenMark.Dx (n=1), GenMark.Dx - GenMark DX ePlex (n=1), Luminex (n=1), Luminex - Luminex PCR Reagents (n=1), Master Diagnostica (n=1), Master Diagnostica - Master Diagnostica Flow Chip (n=1), Medical Innovation Ventures (n=1), Medgen Diagnostics (n=1), Medgen Diagnostics - Medgen Diagnostics Real Star (n=1), MIV GenoAmp Kit (n=1), PathoFinder (n=2), PathoFinder - PathoFinder Real Time PCR (n=2), PrimerDesign (n=1), PrimerDesign - PrimerDesign Genesig (n=1), Quidel (n=2), Quidel - Quidel AmpliVue (n=1), Quidel - Quidel Solana (n=1), Sacace (n=1), Sacace - Sacace Real TM (n=1), Seegene - Seegene Seeplex (n=1), Vitassay (n=1), Vitassay - Vitassay Real-Time PCR (n=1), fast-track DIAGNOSTICS (n=3), fast-track DIAGNOSTICS - FTD real time PCR (n=3), vircell (n=1), vircell - vircell Speed-oligo (n=1), In-House - Conventional In-House PCR (n=3)

**Groups Rolled Up:**
- Diagenode - Diagenode Real Time kit (n=9), Meridian BioScience - Meridian Bioscience illumigene (n=6), R-Biopharm - R-Biopharm RIDA Gene (n=9), TIB MOLBIOL - TIB MOLBIOL LightMix (n=6)

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