Usefulness of a PCR Assay for the Identification of the *Klebsiella pneumoniae* ST258 Epidemic Clone in Latin American Clinical Isolates

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**Abstract:**

**BACKGROUND:** The worldwide dissemination of ST258 of *Klebsiella pneumoniae* (KP)-KPC producers encouraged investigators to develop a rapid typing method based on the identification of ST258 unique gene *pilv-l*, and phage related protein (*prp*) which is neither specific nor ubiquitous of ST258 (*Adler et. al. DMID 2014, 78:12-15*). Prompt identification of ST is invaluable for some Latin American (LA) countries where this clone has become endemic.

**OBJECTIVES:** to evaluate a PCR developed for ST258 in KP-KPC clinical isolates from LA.

**METHODS:** KPC, *pilv-l* and *prp* genes were detected by PCR and sequenced following standard procedures. Specific primers were used to detect the 3’ end of PilV-like gene which is highly specific of ST258 (product size 320 bp) and *prp* gene (product size 544 bp). ST258 and non-ST258 were defined by Xba-I-PFGE and MLST. A total of 107 KP clinical isolates from 9 LA countries recovered from 2006 to 2015 where tested, of which 44 were ST258 and 63 non-ST258.

**RESULTS:** The *pilv-l* gene was present only in ST258 isolates regardless of the presence of KPC (positive predictive value 100%). All *pilvl* negative isolates were non-ST258 (negative predictive value 100%). *prp* results were variable. Remarkably, four ST258 isolates were positive for *pilv-l*, negative for KPC and carried CTX-M (n=3) or NDM (n=1).

**CONCLUSIONS:** The evaluation of a specific PCR for ST258 unique gene that could replace time and resource consuming methods (MLST and PFGE) was successful for the LA isolates tested. In our setting, *pilv-l* detection is enough to discriminate ST258 from other STs.

<table>
<thead>
<tr>
<th><em>K. pneumoniae</em></th>
<th>KPC</th>
<th><em>pilv-l/prp</em>+</th>
<th><em>pilv-l/prp</em>+</th>
<th><em>pilv-l/prp</em>+</th>
<th><em>pilv-l/prp</em>+</th>
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</thead>
<tbody>
<tr>
<td>ST258 n=44</td>
<td>+</td>
<td>40</td>
<td>16</td>
<td>24</td>
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<tr>
<td>non-ST258 n=63</td>
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<td>0</td>
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Acknowledgments/ References: