Evaluation of a rapid diagnostic test for the detection of OXA-48 carbapenemase.
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BACKGROUND
The increasing incidence of isolates producing OXA-48 carbapenemase in members of Enterobacteriaceae family has become a major public health concern.

OBJECTIVES
The aim of this study was to evaluate the performance of the OXA-48 test in a set of isolates with well characterized resistance mechanisms.

MATERIAL/ METHODS
The OXA 48 Card Lettest is an immunochromatographic sandwich test that uses capture antibodies against an OXA-48 epitope bound to a nitrocellulose membrane. Detection antibodies against a second OXA-48 epitope are conjugated to colloidal gold particles. The sample and the detection antibody conjugate are resuspended together and move through the test strip by passive diffusion. If the isolate contains an OXA-48 carbapenemase the antigen and antibody conjugate bind to the capture antibodies producing a color band in the test strip.

RESULTS
All 37 strains harboring an OXA-48 or OXA-181 resistance gene had a positive result using the OXA-48 test. The 20 negative controls, expressing ESBL or KPC, NDM, SMF, VIM carbapenemases as well as the OXA-type carbapenemases not belonging to the OXA-48 family showed a negative result using the test. The concordance obtained in this study was 100% as well as the specificity and sensitivity.

CONCLUSIONS
The results obtained showed that the OXA-48 Card Lettest is able to detect the carbapenemase OXA-48, including an OXA-181, from a single culture colony with a high sensitivity and specificity. This test is easy to perform and its turnaround time is only 15 min. The main limitation is that only one resistant mechanism can be identified.