

Rapid identification of OXA-23-subfamily in carbapenem-resistant *Acinetobacter* spp. with a novel immunochromatographic lateral flow assay

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Introduction

The global spread of carbapenem-resistant *Acinetobacter* spp. has led to an emerging worldwide healthcare problem. The carbapenem-hydrolysing oxacillinases (OXAs) are the most commonly reported carbapenem-resistance determinants in *Acinetobacter* spp., particularly in *A. baumannii*. There are six identified OXA-subgroups associated with carbapenem-resistance in *A. baumannii*: the intrinsic OXA-51-like and the acquired OXA-23-like, OXA-58-like, OXA-40-like, OXA-143-like and OXA-235-like. Of these, OXA-23 is the most prevalent carbapenem-resistance determinant among isolates in Germany, Europe and worldwide.

The lack of effective and reliable tests to detect OXA-mediated carbapenem-resistance is a serious challenge to modern medicine. There is an unmet medical need for reliable and rapid diagnostic tools to detect OXA-23-like producing strains to ensure a successful treatment of patients and prevent the spread of carbapenemase-producers.

The aim of this work is the development an antibody-based OXA-23-like

Acinetobacter spp.

Flow chart of antibody-based OXA-23 detection assay

