

## Rapid detection of pathogens and resistance - contribution of flow cytometry

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Inappropriate or inadequate initial empirical therapy with broad spectrum antibiotics has been associated with increased mortality, morbidity and length of hospital stay. The appropriate selection of antibiotics is one of the conditions required to prevent the spread of drug-resistant bacteria and to preserve their efficacy. Several approaches were developed to provide a more targeted antibiotic treatment until culture/susceptibility test results are obtained. We will present the contribution of flow cytometry to the rapid detection of bacterial susceptibility to antibiotics and the classification of bacterial pathogens as sensitive, intermediate, or resistant, based on the dye uptake by the antibiotic-stressed bacteria. Rapid detection of pathogens and resistance by flow cytometry could contribute to the identification or rule out bacterial infections, thus helping clinicians to avoid unnecessary use of antibiotics and also to improve initial empirical therapy.