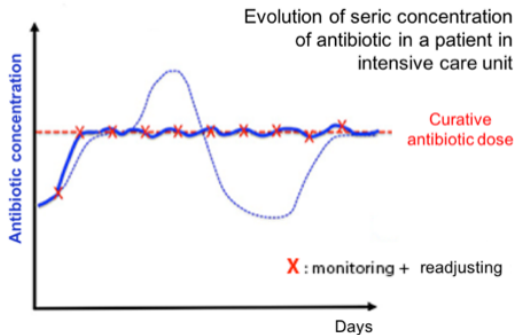


# Method for the rapid dosage of concentration of beta-lactam antibiotics



## KEY COMPETITIVE ADVANTAGES

- Monitoring of free (unbound to proteins), bioactive concentration of beta-lactam antibiotics, avoiding corrections to calculate free-exposure to drug.
- Unlike LC-UV/MS-MS automatized enzymatic colorimetric method does not require expensive equipment and personal expertise which may not be feasible everywhere, and could be customized as PoC device.
- The PoC method implementation should avoid transportation of samples to and from an outside laboratory for LC-UV/MS-MS, which is detrimental to turn-around time and leads to consider if the results remain clinically applicable days after collection in patients undergoing constant physiologic and interventional changes.

## KEY ACHIEVEMENTS

- Method validated for piperacillin-tazobactam, meropenem and ceftazidime antibiotics and cross validated against reference LC-MS-MS method used in clinical biological laboratories (TRL4), in compliance with the EMA and FDA directives 1, 2,3
- Therapeutical interest validated in clinical trials with ready-to-use reagents kit (EU-FP7 funded project MON4STRAT)

## UPCOMING CHALLENGE

- CE marking to be obtained for the kit reagents (ready to be used with standard CE marked spectrophotometers or robotic stations)
- Commercial : finding the right partner to commercialize the kit and the equipment to hospitals/clinical biological labs for them to implement the dosing methodology

$\beta$ -lactam antibiotics are amongst the most commonly prescribed drugs in clinical setting. They proved broad spectrum of antibacterial activity, efficacy and relatively low incidence of adverse events. They are extensively used across variable patient populations. Better understanding of interaction of these antibiotics and the body indicates that great variability among patients exists and that personalized dosing schemes should improve clinical outcomes. Therapeutic Drug Monitoring (TDM) is the way to assess, manage and monitoring the efficacy and safety of medications to maximize positive clinical outcomes.

The obtention of serum  $\beta$ -lactam level is the cornerstone of TDM, but there is not commercially available assay for routine monitoring.

In-house methods for  $\beta$ -lactam quantification utilize chromatographic separation coupled to ultraviolet or mass spectrometric detection. Reports indicate than less than 25% of industrialized countries hospitals have access to  $\beta$ -lactam TDM.

The patented technology relates to an enzymatic colorimetric method for the rapid dosage of beta-lactam antibiotics which enables in-situ monitoring of serum concentration of beta-lactam administrated to patients.

## MARKET

Target market : hospitals with intensive care unit (ICU) for adults and/or children

## INTELLECTUAL PROPERTY

- EP2766735 (B1), US9689021 (B2), CA2851984 (C)
- WO2021032876 (A1)

## BUSINESS MODEL

Licensing and/or collaboration

## FINANCIAL NEED AND REQUIRED EXPERTISE

Looking for a partner specialized in diagnostic / clinical microbiology to bring the technology to market