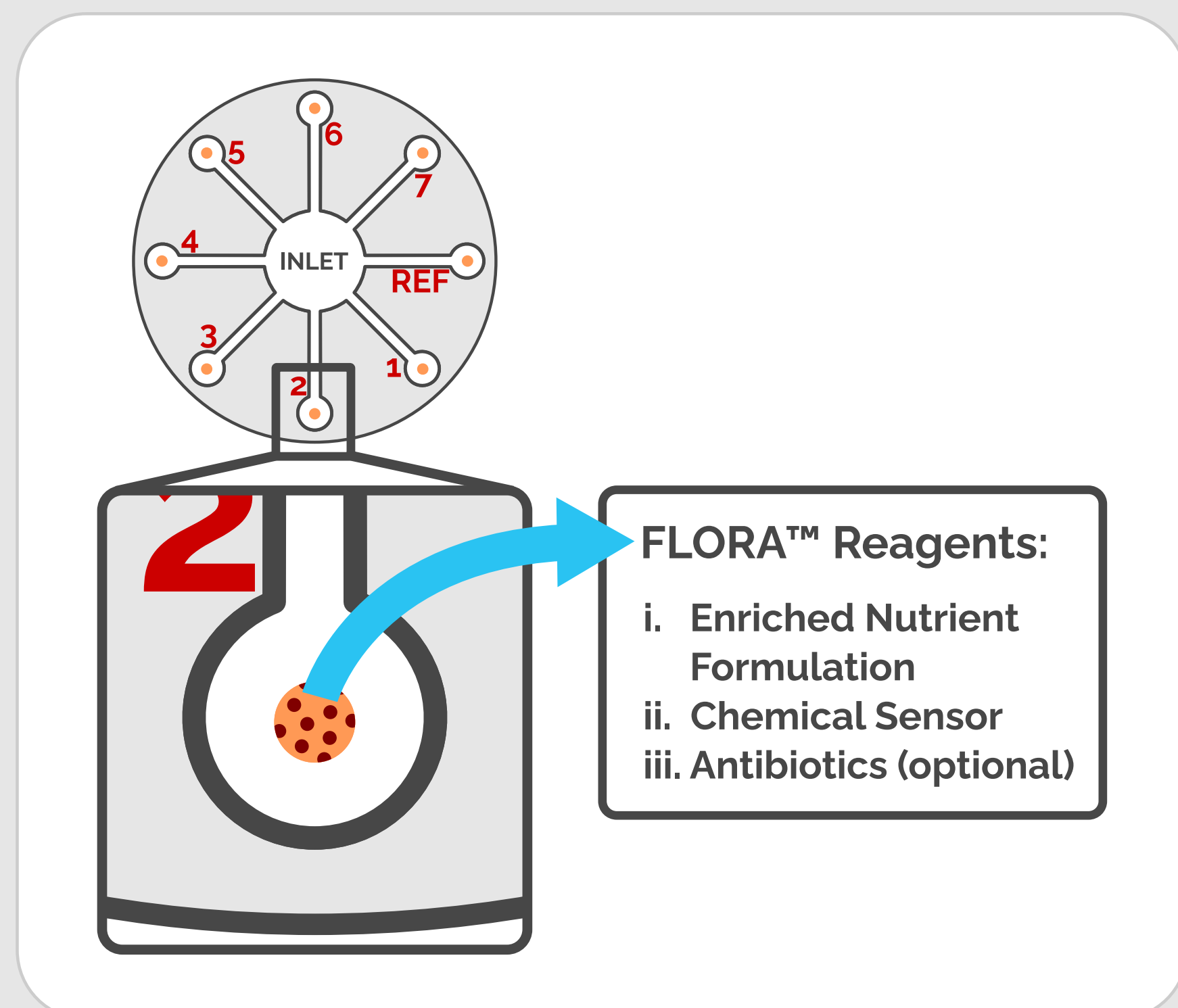


A novel phenotypic assay for rapid antibiotic susceptibility testing testing direct on patient urine samples with high diagnostic accuracy

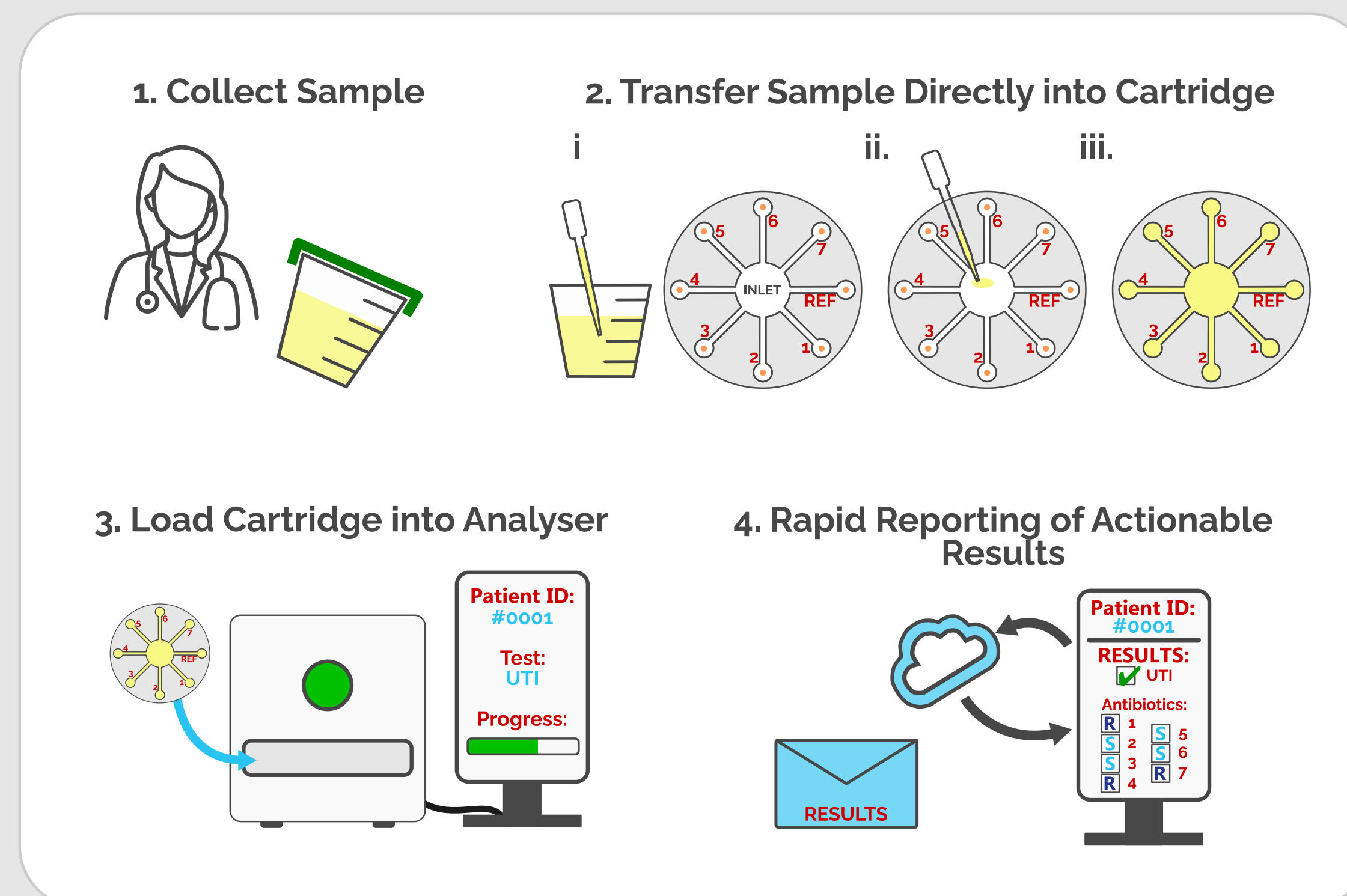
KAIROS™: A rapid infection detection and simultaneous antibiotic susceptibility testing platform, comprising a stand-alone device and proprietary test cartridges for use at the point-of-care



KAIROS™ cartridges comprise multiple chambers, each containing proprietary FLORA™ reagents to expedite bacterial metabolism.

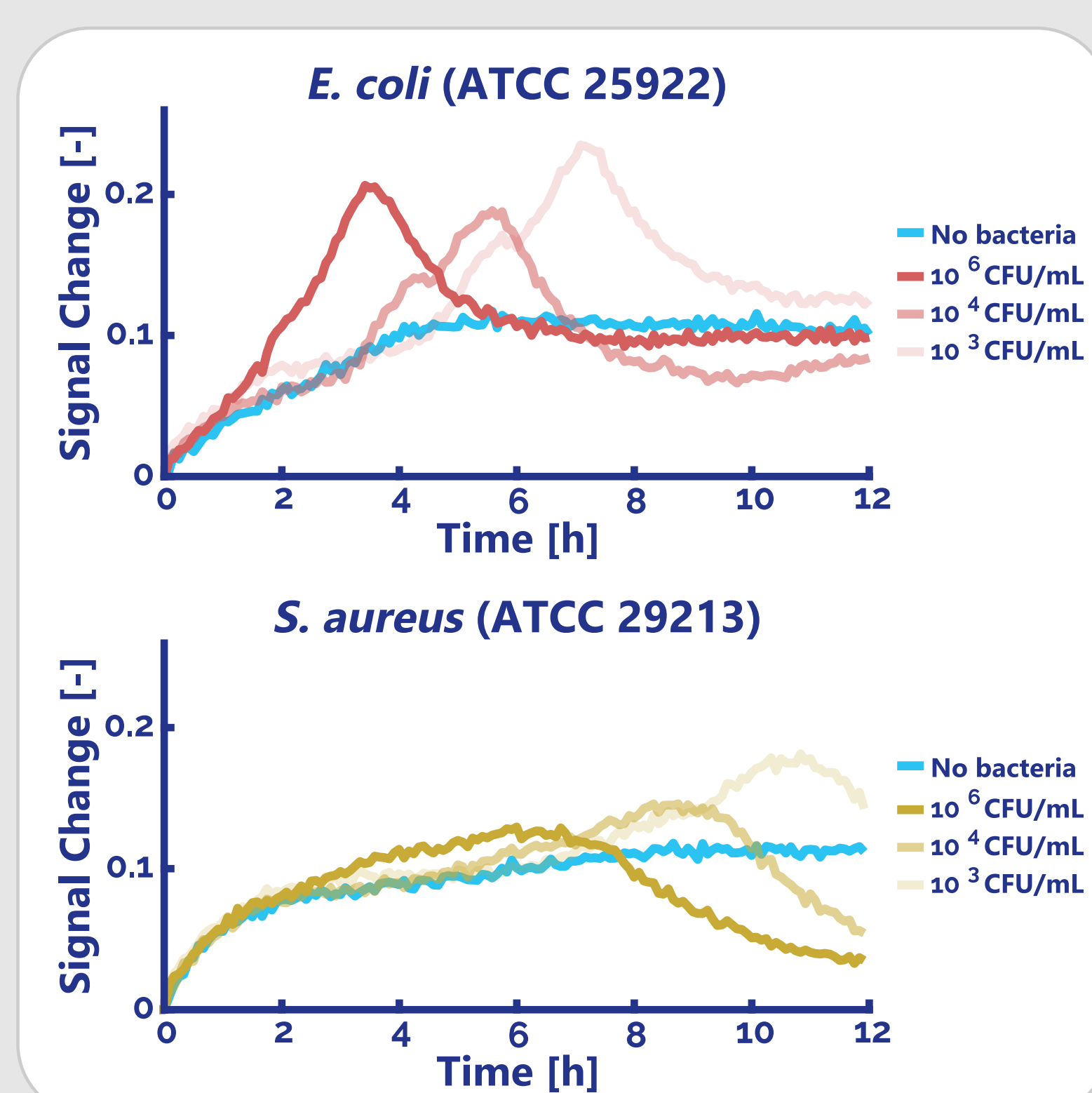


The KAIROS™ platform uses stand-alone analysers and one-time use cartridges, while its modular design provides flexibility for all point-of-care settings.

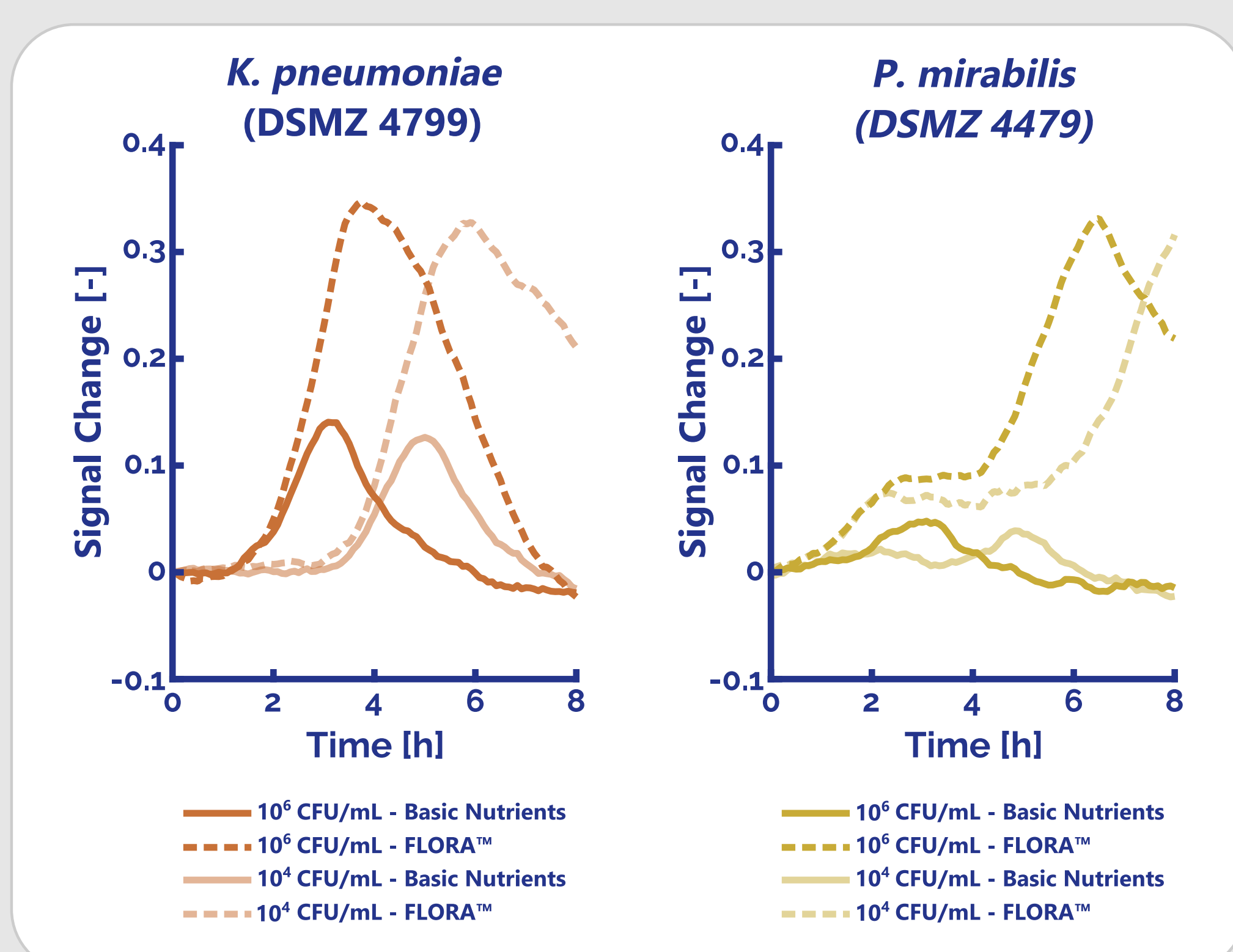


The KAIROS™ workflow requires seconds of hands-on time, and is direct from sample. Simply transfer the urine sample into the cartridge and place it in the analyser.

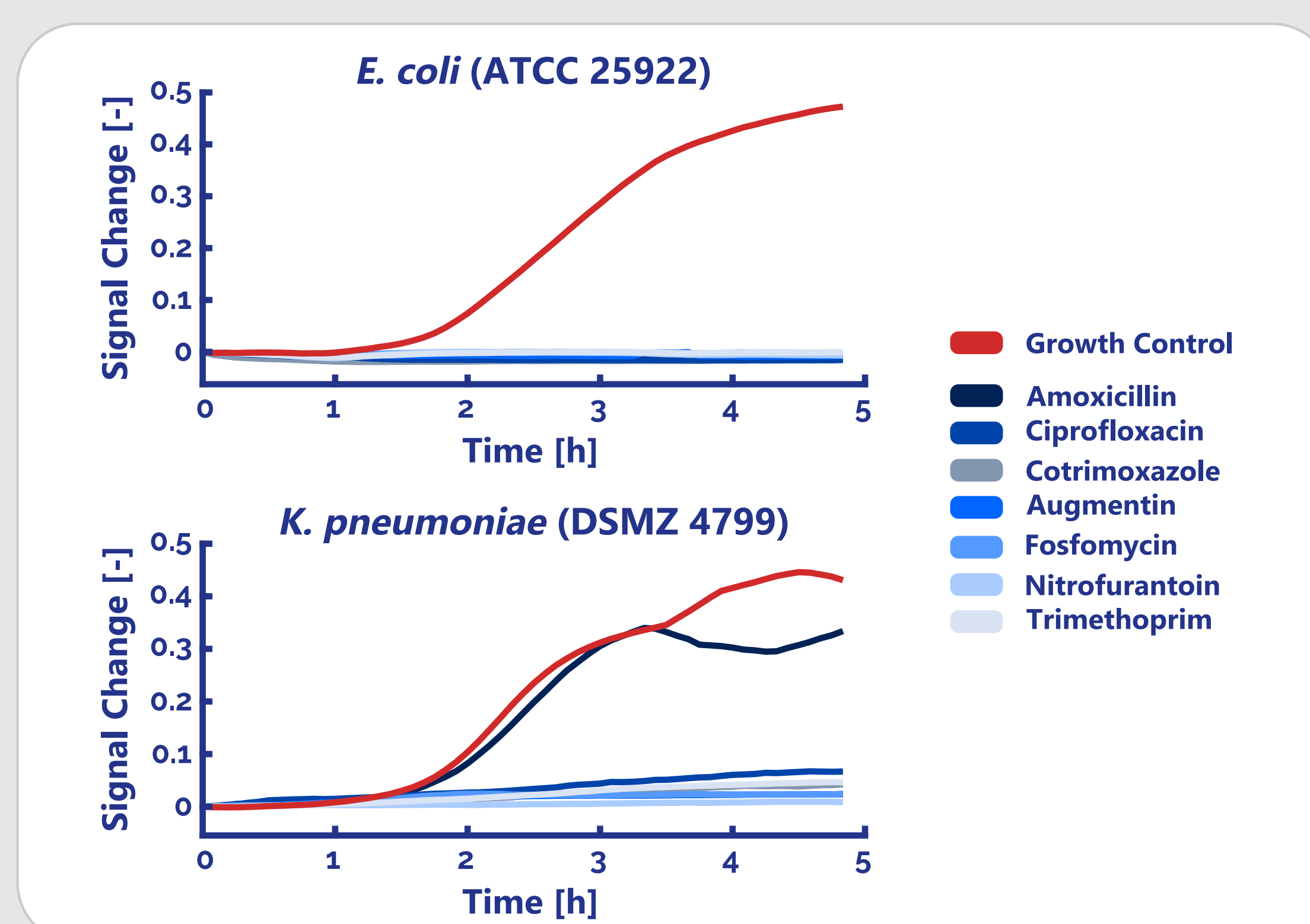
Using reference bacterial isolates, the platform was optimised and a proof-of-concept was demonstrated



1. Bacterial metabolism of ATCC reference bacteria was monitored in Mueller-Hinton Broth using a common spectrophotometer, as a successful proof-of-concept.



2. To enhance the chemical sensor signal, FLORA™ was developed to stimulate specific metabolic pathways, resulting in a >2-fold increase in signal when measured using a common spectrophotometer.



3. Incorporating FLORA™ reagents into KAIROS™ cartridges, and monitoring the signal with KAIROS™ analysers, the susceptibility or resistance of the reference bacteria to each tested antibiotic was correctly identified.

A clinical study (n=144) of hospital patient urine samples revealed UTI Diagnostic Accuracy >99% with an >88% correlation of Antibiotic Susceptibility when compared against VITEK®2

Sample Species Distribution:

- E. coli* (n=63)
- K. pneumoniae* (n=21)
- P. mirabilis* (n=5)
- S. aureus* (n=5)
- K. oxytoca* (n=4)
- E. faecalis* (n=2)
- C. koseri* (n=1)
- E. cloacae* (n=1)
- E. faecium* (n=1)
- S. agalactiae* (n=1)
- S. marcescens* (n=1)

Negative (n=39)

UTI Diagnosis:

Sensitivity: >99 %

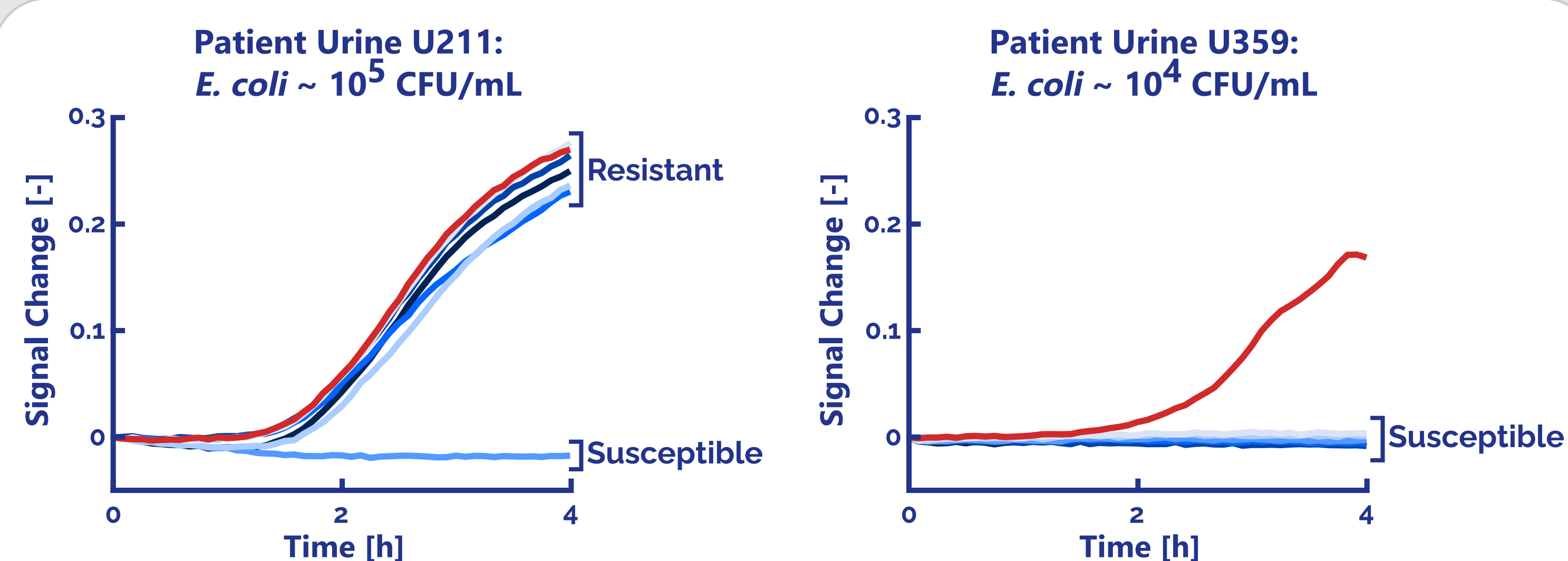
Specificity: 100 %

39/39 negative urine samples correctly identified as negative, 104/105 positive samples correctly identified as positive.

KAIROS™ vs VITEK®2:

523/589 (88.8%)

of all Antibiotic Susceptibility determinations made by KAIROS™ were concurrent with VITEK®2 results.



	U211		U359	
	VITEK	KAIROS	VITEK	KAIROS
Positive Control				
Amoxicillin	R	R	S	S
Ciprofloxacin	R	R	S	S
Augmentin	R	R	S	S
Fosfomycin	S	S	S	S
Nitrofurantoin	R	R	S	S
Trimethoprim	R	R	S	S



A. J. van der Linden¹, Y. N. Deurloo¹, N. Doomen¹, D. A. Horst-Kreft², H. R. Stapert¹, A. van Belkum¹, J. P. Hays², S. E. Shanko¹

¹ShanX Medtech BV, Eindhoven, The Netherlands. *a.j.v.d.linden@shanxmedtech.nl, †e.s.shanko@shanxmedtech.nl

²Department of Medical Microbiology and Infectious Diseases, Erasmus University Medical Center, Rotterdam, The Netherlands

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