

ASTar™ – complete phenotypic AST in half the time



Help sepsis patients quick



ly return to everyday life





ASTar™ – rapid AST results directly from clinical samples

A fully-automated system for rapid antimicrobial susceptibility testing (AST), Q-linea's ASTar cuts the diagnostic time for infectious diseases and delivers clinically-actionable results in hours instead of days.

Early information on bacterial pathogens and their antimicrobial susceptibility is of key importance for managing sepsis patients. Within three to six hours, ASTar delivers true minimum inhibitory concentration (MIC) results directly from positive blood cultures and against a panel of up to 48 antimicrobials, thereby providing comprehensive coverage of gram negative, gram positive and fastidious pathogens. ASTar also combines high throughput, with a capacity for running 30–50 patient samples per day, with an intuitive user interface and load-and-go operation.

ASTar for sepsis

Phenotypic AST

- Directly from positive blood cultures
- True MIC results in 3 to 6 hours

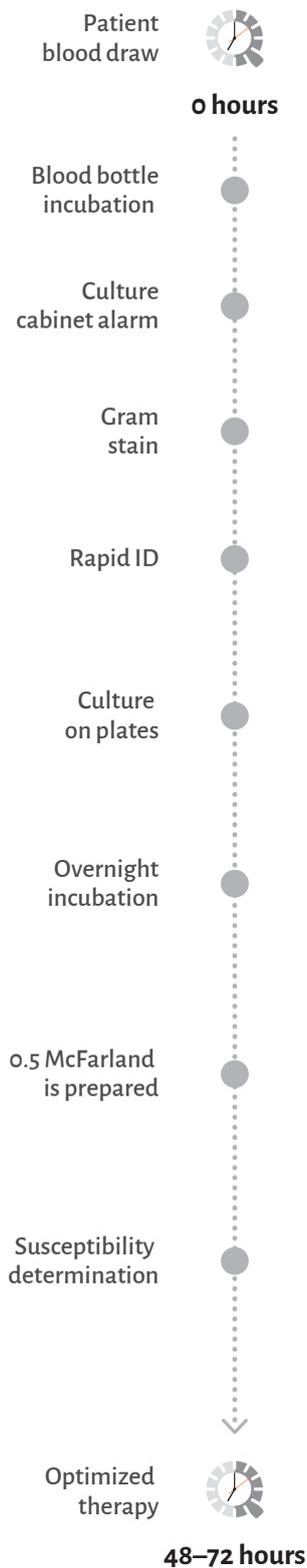
Fully-automated analysis

- 6 samples analyzed, random-access
- Up to 50 samples per day
- Load-and-go workflow

Comprehensive AST panel

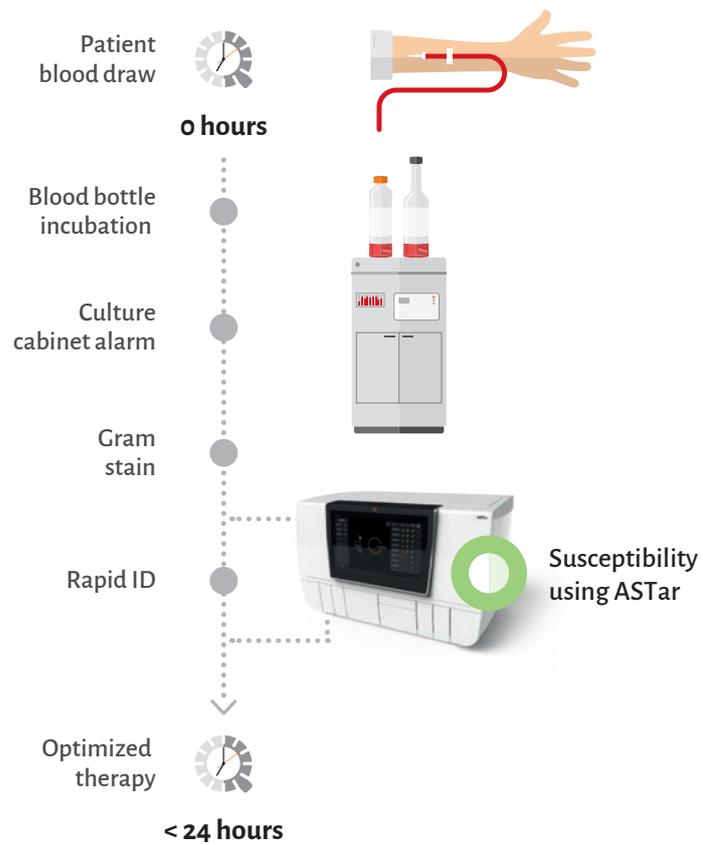
- Up to 48 antimicrobials each in 5 to 11 two-fold dilutions
- Results generated from broth microdilution (CAMHB and fastidious)

Current workflow



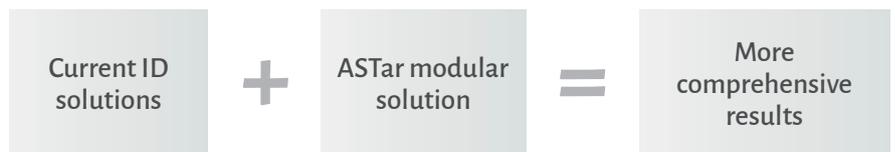
Workflow analysis performed by Q-linea at several European and US hospitals. Workflow may differ between laboratories.

ASTar workflow



ASTar meets your need for rapid and comprehensive AST

Several approaches for rapid pathogen identification (ID), e.g. molecular techniques and MALDI-TOF mass spectrometry, are available today. Our phenotypic AST solution can be combined with any of these rapid ID technologies, which augments current laboratory capabilities and meets the clinical need for more rapid results. Thanks to the broad AST panel, positive blood culture may be directly analyzed in the ASTar instrument without waiting for pathogen ID, delivering a comprehensive answer in just one test. Pathogen ID is only needed to create the final MIC results report.



Three simple steps for complete MIC results

ASTar is very easy to use: less than one minute hands-on time is all that's needed. Simply transfer 0.5 ml of positive blood culture to the sample preparation cartridge and insert it in the instrument. Then load the ASTar panel of choice and tap the START RUN icon on the touch screen. Pathogen ID can be added before, during or after the run.

Highly reproducible MIC results are generated from broth microdilution (CAMHB and fastidious) in 5 to 11 two-fold dilutions of each antimicrobial agent. The sample preparation cartridge and AST panels are stored at room temperature.

1. Add positive blood culture

The sample preparation cartridge automatically isolates bacterial cells from the sample matrix and adjusts the concentration for a controlled inoculation to the AST panel.



2. Choose AST panel disc



Q-linea's unique proprietary technology – the AST panel disc – allows automated time-lapse imaging of bacterial population growth in wells containing different concentrations of antimicrobial agents.

3. Scan and load – tap START RUN

Proprietary algorithms translates visual information into MIC values. Based on EUCAST or CLSI breakpoints, MIC values are interpreted as S, I, R.



New technology based on broth microdilution

In-house dataset generated from a prototype ASTar system

Isolates (*P. aeruginosa*, *E. coli*, *K. pneumoniae*, *S. aureus* and *E. faecalis*) were spiked in blood culture flasks with blood from healthy individuals and incubated until signaled positive. Of the 476 bacteria-antimicrobial agent combinations tested, phenotypic AST results obtained within 6 hours showed 96% essential agreement and 95% categorical agreement compared to reference broth microdilution.

Antimicrobial agent	Total no. of tests	EA (%)	CA (%)	No. of tests			No. of tests		
				S	I	R	Minor error	Major error	Very major error
Ampicillin	22	22 (100%)	22 (100%)	22					
Cefotaxime	41	38 (93%)	41 (100%)	11	11	19			
Cefoxitin	21	17 (81%)	21 (100%)	11		10			
Ceftazidime	62	62 (100%)	62 (100%)	31		31			
Ciprofloxacin	62	62 (100%)	60 (97%)	42	10	10	2		
Clindamycin	21	19 (90%)	19 (90%)	21			2		
Gentamicin	81	80 (99%)	81 (100%)	52	11	18			
Meropenem	62	62 (100%)	60 (97%)	62			2		
Piperacillin/tazobactam	61	61 (100%)	47 (77%)	10	21	30	13		1
Vancomycin	43	40 (93%)	40 (93%)	31		12			3



Flexible solution enables future panel extensions

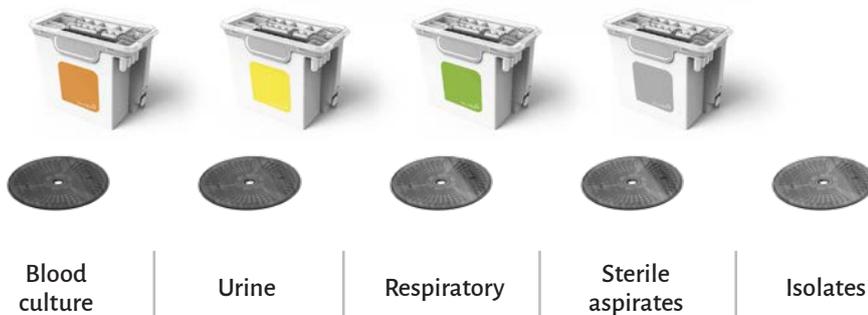
ASTar system can be extended to other types of clinical samples. The modular design of the sample preparation cartridge, in combination with the AST panel disc, allows for future adaptation to other sample types such as urine, respiratory, sterile aspirates and isolates.



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Q-linea

For more information, please contact us at contact@qlinea.com or visit www.qlinea.com



Our vision is to help save lives by ensuring antibiotics continue to be an effective treatment for future generations. Our mission is to develop and deliver preferred solutions for healthcare providers, enabling them to accurately diagnose and treat infectious disease in the shortest possible time.

Q-linea was founded in Uppsala, Sweden, in 2008 by scientists from the Rudbeck Laboratory at Uppsala University together with Olink AB and the Uppsala University holding company, UUAB. We are an interdisciplinary, experienced and highly motivated team with state of the art development and manufacturing facilities based in the center of Uppsala Science Park. Q-linea is a privately held company developing inventive systems for *in vitro* diagnostics for infectious diseases.

www.qlinea.com

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