ITK uudised
EUCAST seminar (AST for MDR)

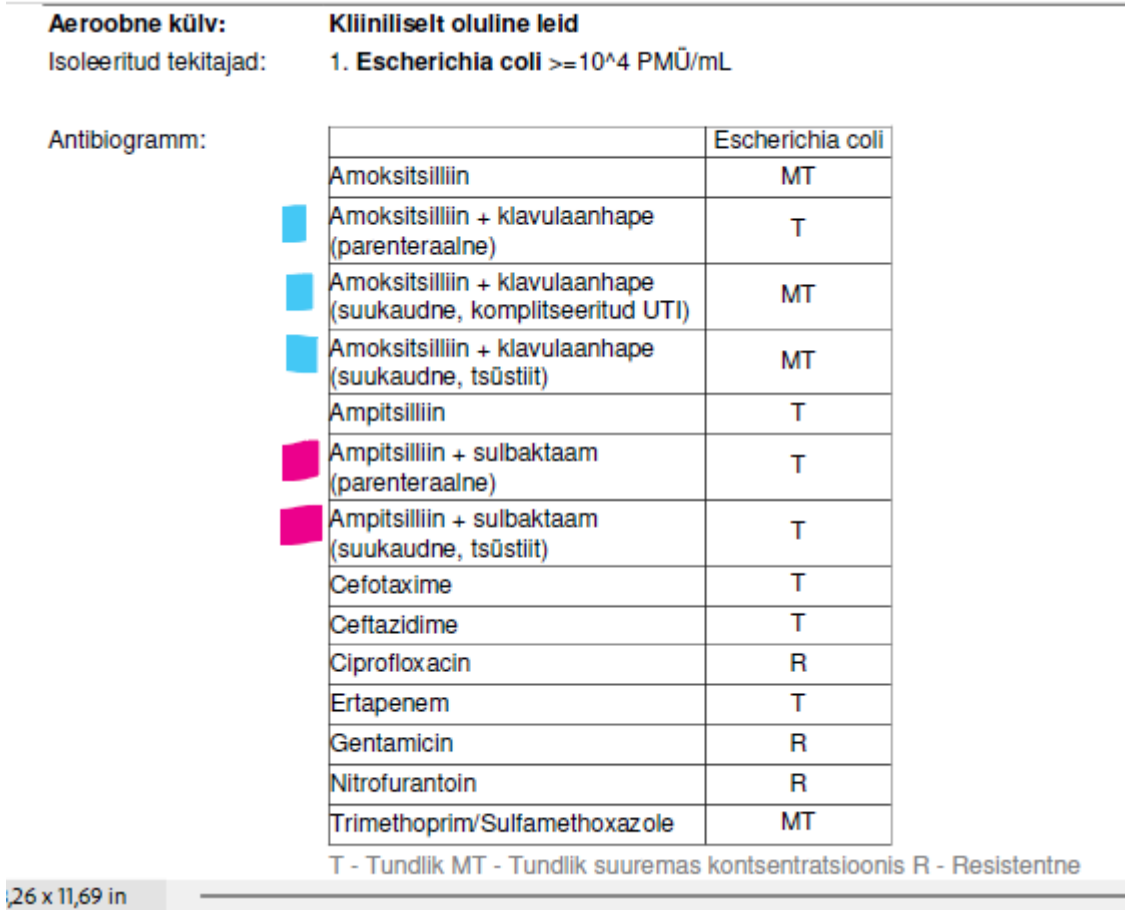
Anastasia Bilozor

28.10.2026

IDA-TALLINNA KESKHAIGLA | AASTAST 1785

SAM ja AMC

Alates 20.10.2026 muutub **amoksitsilliin + klavulaanhape** ja **ampitsilliin + sulbaktaam** tulemuste väljastamise viis sõltuvalt proovimaterjali, diagnoosi ja antibiootikumi kasutamisviisist.



Aeroobne külv: **Kliiniliselt oluline leid**

Isoleeritud tekitajad: 1. **Escherichia coli** >=10^4 PMÜ/mL

Antibiogramm:

	Escherichia coli
Amoksitsilliin	MT
Amoksitsilliin + klavulaanhape (parenteraalne)	T
Amoksitsilliin + klavulaanhape (suukaudne, komplitseeritud UTI)	MT
Amoksitsilliin + klavulaanhape (suukaudne, tsüstiit)	MT
Ampitsilliin	T
Ampitsilliin + sulbaktaam (parenteraalne)	T
Ampitsilliin + sulbaktaam (suukaudne, tsüstiit)	T
Cefotaxime	T
Ceftazidime	T
Ciprofloxacin	R
Ertapenem	T
Gentamicin	R
Nitrofurantoin	R
Trimethoprim/Sulfamethoxazole	MT

T - Tundlik MT - Tundlik suuremas kontsentratsioonis R - Resistentne

,26 x 11,69 in

The impact of different phenotypic methods on antimicrobial susceptibility testing of CRE, CRAb and CRPa

- Educational webinar
- EUCAST reference lab experts
- EARS-NET data, data from different countries

- Tulemusi jagada ei saa (konfidentsiaalsus, publitseerimata andmed)
- QC tähtsad momendid

Problems for different antimicrobial classes

Colistin

β-lactams: cefiderocol

β-lactams: carbapenems with and without BLI

(Fluoroquinolones)

(Aminoglycosides)

Note:

N. and % of results submitted for agar dilution, macro broth dilution and 'other' methods omitted from following tables unless relevant. Included in totals.

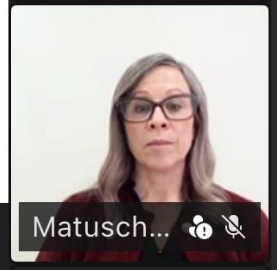
Funded by the European Union

Ana Rita Bastos Rebelo

AB







Colistin - discussion

- **EUCAST warning**
  - Broth microdilution is the only reliable method for colistin AST
  - Gradient tests do not work
  - Disk diffusion does not work
  - Quality control of colistin must be performed with both a susceptible QC strain (*E. coli* ATCC 25922 or *P. aeruginosa* ATCC 27853) and the colistin resistant *E. coli* NCTC 13846 (*mcr-1* positive).

Matuschek *et al.* Clin Microbiol Infect. 2018 Aug;24(8):865-870

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Colistin - recommendations

- **Colistin AST can only be performed with BMD!**
  - There are several user-friendly commercial plates
- The performance of semi-automated devices in colistin AST is doubtful.
  - If used, verify with your own quality control testing (use all three strains) and analyse QC data against EUCAST ranges and targets
  - Truncated MICs cannot be evaluated for quality control strains
- Perform quality control with:
  - A susceptible strain (*E. coli* ATCC 25922 and/or *P. aeruginosa* ATCC 27853) **AND**
  - The colistin-resistant *E. coli* NCTC 13846 (*mcr*-1 positive)
    - For *E. coli* NCTC 13846, the colistin MIC target value is 4 mg/L and should only occasionally be 2 or 8 mg/L.

NB! Acinetobacter ja Colistin – problematic AST to clinical labs

Cefiderocol - recommendations

- EUCAST recommends using disk diffusion for cefiderocol AST and to make sure that the disks and agar used produce results in agreement with EUCAST recommendations
  - Mean results from ≥5 tests on QC target ± 1 mm for both *E. coli* ATCC 25922 and *P. aeruginosa* ATCC 27853
- If BMD is performed for cefiderocol, be aware of the EUCAST warning and make sure to follow the methodology, including specific reading instructions, carefully.
- Gradient tests are to our knowledge not validated for testing Enterobacterales or *Acinetobacter spp.* and our in-house data show poor performance for *P. aeruginosa*.

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Onur Karatuna: kokkuvõte artiklist ja praktiline soovitus tegijatele

▸ Antibiotics (Basel). 2023 Dec 5;12(12):1700. doi: 10.3390/antibiotics12121700

Approaches to Testing Novel β-Lactam and β-Lactam Combination Agents in the Clinical Laboratory

Carmella Russo [1], Romney Humphries [1,*]

Editors: Krisztina M Papp-Wallace[1], Maria Fernanda Mojica[1], Clyde Smith[1], Philip Hinchliffe[1], Khalid Dousa[1]

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PMCID: PMC10740869 PMID: 38136734

Carbapenems incl. BLI - discussion

Ceftolozane-tazobactam (C/T)	
Results	Possible Cause
C/T-R Ceftazidime-S	Testing error Contamination
C/T-S ESBL + Carbapenemase –	Expected result
C/T-R ESBL + Carbapenemase –	Expected result
C/T-S Carbapenemase +	C/T has no activity against carbapenemases, likely testing error. Less common—inactive carbapenemase

Russo C & Humphries R. Antibiotics (Basel). 2023 Dec 5;12(12):1700. doi: 10.3390/antibiotics12121700.

Carbapenems incl. BLI - discussion

Ceftazidime-avibactam (CZA)	
Results	**Possible Cause**
CZA-R ESC-S	Testing error Contamination
CZA-R Carbapenems-S	Testing error Contamination Carbapenemase variants such as KPC-161
CZA-R Serine carbapenemase +	Testing error Contamination Carbapenemase variants such as KPC-161
CZA-S MBL +	Testing error Less common—inactive/low expression of MBL

Russo C & Humphries R. Antibiotics (Basel). 2023 Dec 5;12(12):1700. doi: 10.3390/antibiotics12121700.

Carbapenems incl. BLI - discussion

Meropenem-vaborbactam (MEV)	
Results	Possible Cause
MEV-S Meropenem-R at same MIC	Expected result due to breakpoints. May indicate presence of low-level carbapenemase, such as OXA-48
MEV-R Carbapenem-S	Testing error Contamination
MEV-R KPC +	Reduced permeability due to porin mutation combined with overexpression of KPC or co-production of KPC with an OXA-48-like carbapenemase

Russo C & Humphries R. Antibiotics (Basel). 2023 Dec 5;12(12):1700. doi: 10.3390/antibiotics12121700.

Carbapenems incl. BLI - discussion

Imipenem-relebactam (IMR)	
Results	Possible Cause
IMR-R Carbapenem-S	Testing error Contamination
IMR-R KPC +	Reduced permeability due to porin mutation combined with overexpression of KPC co-expression of MBL *Proteus, Providencia* and *Morganella* group expected phenotype.

Russo C & Humphries R. Antibiotics (Basel). 2023 Dec 5;12(12):1700. doi: 10.3390/antibiotics12121700.