

## Structure of EUCAST

- · Steering Committee- decision making body
- General Committee
- Subcommittees
- National Antimicrobial Susceptibility Testing Committees (NAC)
  - http://www.eucast.org/fileadmin/src/media/PDFs /EUCAST\_files/General\_documents/Organisation\_ and\_NACs/The\_South\_African\_NAC.pdf



### **EUCAST functions**

- Future: "ECDC External Expert Committee" Steering committee, General committee (European reps), and Consultation network
- Integrated part of EMEA process for approval of new antimicrobials(SOP)
- Advisors from EMEA and ECDC
- Funding from ECDC and ESCMID

### **EUCAST** objectives

•To organize a network of established experts in the determination of antimicrobial breakpoints and in antimicrobial susceptibility testing.

•To determine, review and revise European clinical breakpoints and epidemiological cut-off values for surveillance of antimicrobial resistance in close collaboration with the European Medicines Agency (EMA) and ECDC.

## **Objectives continue**

- To promote the development and standardization of in-vitro antimicrobial susceptibility testing methods used in Europe.
- To promote quality assurance of in-vitro antimicrobial susceptibility testing.
- To promote education and training in antimicrobial susceptibility testing.
- To advise ECDC and other European Union health agencies on issues related to antimicrobial susceptibility testing and detection of resistance determinants relevant to public health.
- To collaborate with international groups, ECDC and other European Union health agencies involved in antimicrobial susceptibility testing and/or the epidemiology of antimicrobial resistance in human pathogens.
- To work towards international consensus and harmonization of clinical breakpoints and antimicrobial susceptibility testing.

# EUCAST breakpoints for new antimicrobial agents

- An agreement between the EMA, pharmaceutical industry and EUCAST, the role of EUCAST with respect to breakpoint determination is recognised as part of the official EMA process for approval of new antimicrobial agents (see EMA SOP/H/3043 14 February 2005, revised 23 January 2007).
- Only the applicant of the specific product under consideration will be part of the process, as outlined in the EMA SOP/H/3943

## **EUCAST Tasks**

- Determine clinical breakpoints and epidemiological cutoffs for existing and new antimicrobials (bacteria, fungi)
- Provide standardised and harmonised methodology for AST in Europe (bacteria, fungi)
- Education of laboratory staff
- Liaise with European regulatory organisations and NGOs and with international groups involved in breakpoints, methodology and surveillance of resistance.

# European breakpoints harmonised!

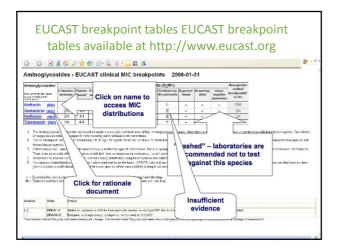
- Harmonising break points for existing antibacterial drugs
- All break points revised!
- Review process started–glycopeptides and carbapenems

## EUCAST and existing antimicrobials

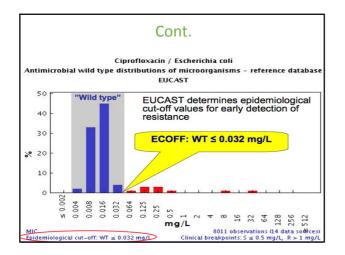
- Aminoglycosides V
- Carbapenems& aztreonam √
- Cephalosporins iv √
- Cephalosporins oral V
- Fluoroquinolones √
- Glycopetides √
- Macrolides and lincosamines  $\boldsymbol{v}$
- Miscellaneous antimicrobials V
- Penicillins √
- Tetracyclines √
- Antifungal drugs(flu-and voriconzole) √

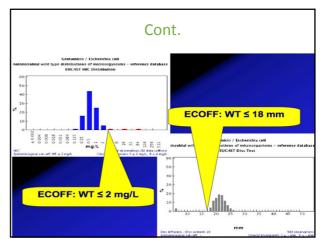
## EUCAST –break point committee for new drugs through EMEA

- Daptomycin √
- Tigecycline √
- Garenoxacin (v)
- Doripenem √
- Cefalosporine (1 ongoing)
- Glycopeptides (ongoing)
- Fluoroquinolone (1 ongoing)
- Diaminopyrimidine (1 ongoing)
- Extensions of indications
- EMEA = European Medicines Agency



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Introduction										
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## EUCAST and CLSI are different

#### EUCAST

- Committee of representatives of national breakpoint committees and the medical profession in European countries.
- In dialogue with regulatory authorities (ECDC, EMEA)
- In consultation with industry.
- Consensus decisions , no vote

## CLSI

- Committee of representatives from the medical profession, science, industry and regulatory authorities
- Decisions by vote

## EUCAST vs. CLSI

CLSI

#### EUCAST

- Funded by ESCMID, ECDC and nationals breakpoint committees
- Industry consultative role
- Five meetings per year
- EUCAST functions as the
- breakpoint committee of EMEA
  Rationale documents published
- on EUCAST website for freeClinical breakpoints and
  - epidemiological cut-offs
- Funded by member-national (industry, government institutions, societies, laboratories) and sale of
- documentsIndustry part of decision process
- Two meetings per year
- FDA determines breakpoints
- CLSI was recognized by FDA from 2010
- Breakpoints determined by FDA may be amended by CLSI after 2 yrs Rationale for decisions not published in an organized fashion and for sale
- Clinical breakpoints

# Disc tests from EUCAST and CLSI

#### EUCAST

- Mueller Hinton Inoculum 0.5 McF
- Incubation 18 +/-2 h (24h for some organisms)
- MH+5% Horse Blood and 20 mg β-NAD for streptococci, pneumococci & H. influenzae
- Disk strengths
- QC strains and reference ranges

### CLSI

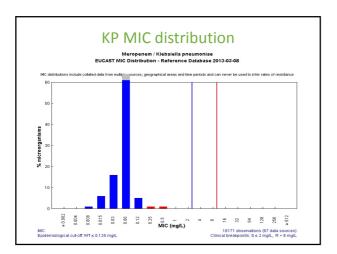
- Mueller Hinton Inoculum
   0.5 McF
- Incubation 18 +/-2 h (24h for some organisms)
   Two different plates for
- Two different plates for fastidious organisms
   Disk strengths
- QC strains and reference ranges

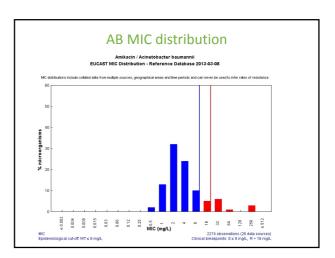
# EUCAST and CLSI breakpoints are different example Enterobacteriaceae

Enterobacteriaceae						EUCAST Clinical Breakpoint Table v. 3.1, valid from 2013-02-	
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Penicilins <sup>1</sup>		MIC breakpoint (mg/L)		breakpoint (mm)		Notes Numbers for comments on MIC breakpoints Letters for comments on disk diffusion	
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Ampiolitin-oulbactam	4.0	6	10-10	14.0		<ol><li>For susceptibility testing purposes, the concentration of subactam is fixed at 4 mg/L.</li></ol>	
Amortolitin	8	8		Note		C. Susceptibility interned from ampicition.	
Amoxicillin-clavulanate	40	8	20-10	17*8	17*	3. For susceptibility testing purposes, the concentration of classifanate is fixed at 2 mg/L.	
Piperacillin	8	16	30	20	17		
Piperacitiin-tazobactarn	81	16*	30-6	20		<ol> <li>For susceptibility testing purposes, the concentration of tazobactam is fixed at 4 mg/L.</li> </ol>	
Ticarcillin	8	16	75	23	23		
Ticarcillin-clavulanate	87	167	75-10	23	23		
Phenoxymethylpenicitiin		1.1		1.0	1.1		
Charlin							
Cloradillo			-				
Dicionacilia							
Pluclosacillin							
Medilinam funcomplicated UTI only			10	151.7	185.7	SE: Meditriam (preventinam) breakpoints relate to E. cot, Keeswira spp. and P. mirabits only. F. knore located coordies within the imbition zone for E. cot.	

Clini		al BP for carbapenems in										
	e	nt	er	ok	ba	cteriaceae						
Enterobacteriaceae						EUCAST Clinical Breakpoint Table v. 3.1, valid from 2013-02-1						
Cephalosporins <sup>1</sup>	MIC breakpoint (mg/L)		Disk content (µ0)			Notes Numbers for comments on MIC breakpoints Letters for comments on disk diffusion						
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Celebration Amoonglicated UTI only		16		12	12							
Cefalexin (uncomplicated UTI only)		16	20	1	14							
Catanda												
Celepime		1	N	24	21							
Celtaine (uncomplicated UT) only	-	1	5	17	12							
Celolatime			1 X									
Cefoxitin (screen) <sup>2</sup>	NA	NA	30	19	10	<ol> <li>The orderatin ECOFF (w/T <sub>a</sub> 6 mgL) has a high sensitivity, but poor specificity for identification of AmpC-producing Entertoactenizes as this antibiotic is also affected by permaanity attentions and some carappenenses. Cassada into Amp produces are with those whereas clariting AmpC produces or informational AmpC interproduces are not with type.</li> </ol>						
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Cefteridine	1	4	12	22	19							
Californian BITT (1990)		1	31	23	22							
Cethanne	- 1	2	30	23	20							
Ceturoxime Iv	-	1 i	50	10	10	<ol> <li>The breakpoint relates to a dosage of 1.5 g x 3 and to £ coll, P. mirability and Klebslelle app, only.</li> </ol>						
Ceturoxime oral (uncomplicated UTI only)	8	8	30	18	18							
Carbapenens		akpoint	Disk		liameter	Notes						
	(mg/L)		content	breakpoint (mm)								
	-	(pq)				Letters for comments on disk diffusion						
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Dorigenem	1	4	10	24	18							
Enlapenem	0.8	1	10	25	22							
mponen'	2	8	10	22	16	2. Low-level resistance is common in Morganelle spp., Proteus spp. and Providencia spp.						
Veroperen			10	22	16							

					- C	SΔ	
						DA	
Staphylococcus spp.						EUCAST Clinical Breakpoint Table v. 3.1, valid from 2013-02-	
Cephalosporins <sup>1</sup>	MIC br	Disk	Zone diameter		Notes		
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Cellactor	NOR <sup>2</sup>	Note		NOW	NO	<ol><li>High-dose literativ is required for treatment of staphylococcal infections.</li></ol>	
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Cefadroxii	Note	Note		Note*	Note*		
Cefatexin Cefatolin	Note <sup>1</sup>	Note		NO8 <sup>4</sup>	Note*		
Celegime	NOW NOW	Note"		NON"	NON"		
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Cellinaxone	Note	Note		Note*	Note*		
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Carbapenems <sup>1</sup>		eakpoint	Disk			Notes	
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# Implementation of EUCAST breakpoints

- MIC-testing of any kind  ${\bf V}$
- National systems for disk diffusion from France, UK or Sweden √
- Phoenix √
- Vitek2, MicroScan–ongoing
- Disk diffusion ongoing

