



MULTIDRUG RESISTANT *ACINETOBACTER* NOSOCOMIAL STRAINS COLLECTED FROM RUSSIAN HOSPITALS IN 2003-2008: PHENOTYPES OF THE RESISTANCE

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Young researcher

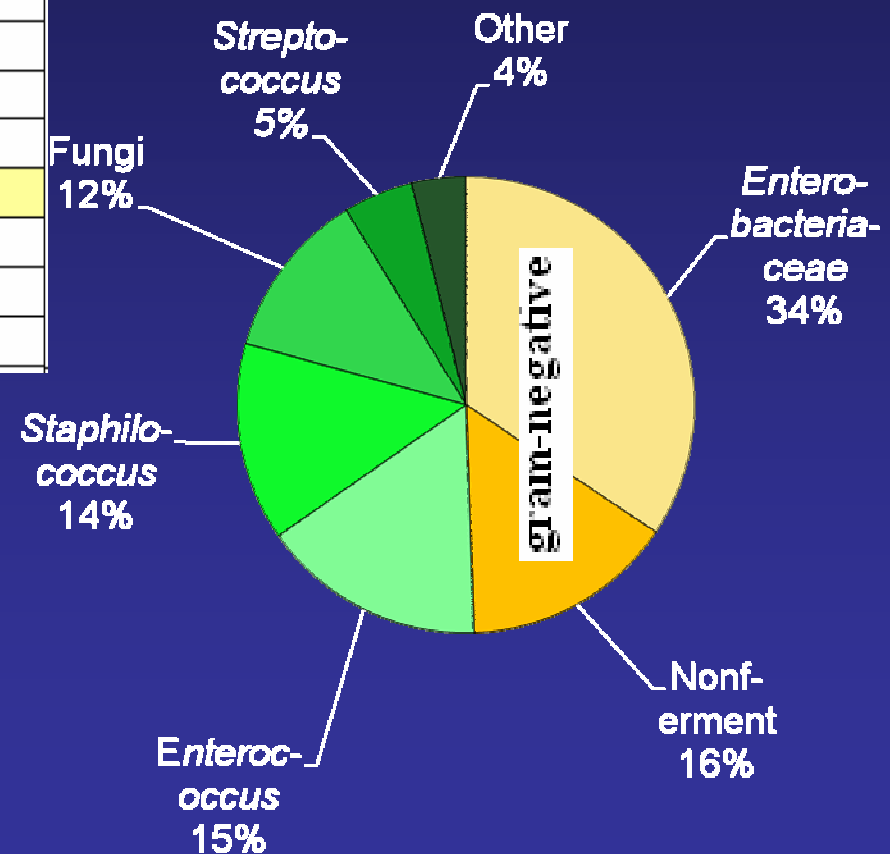
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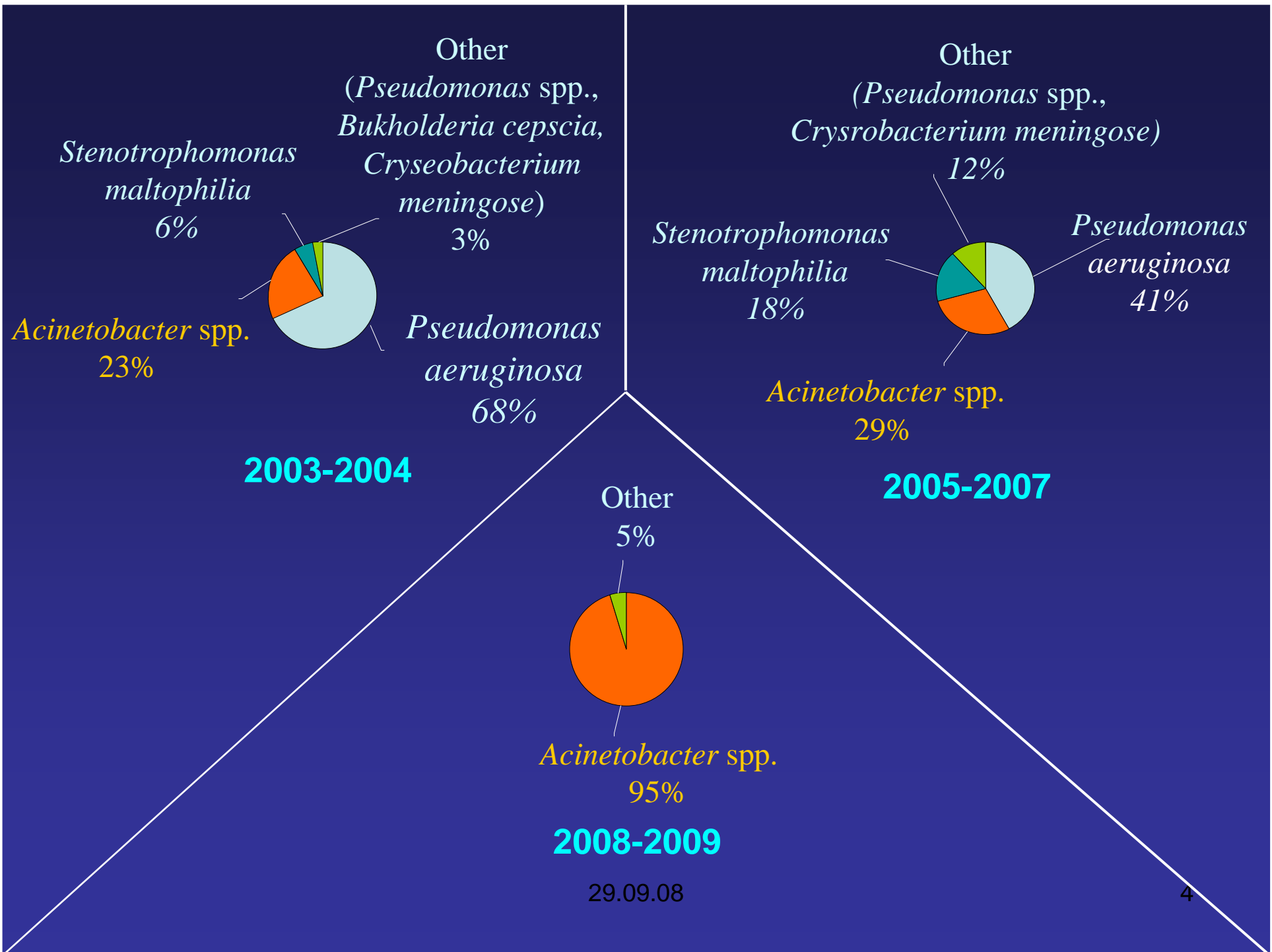
Nonfermenters - a large group of bacteria that is unable to ferment sugars

<i>Achromobacter</i>	<i>Chryseobacterium</i>	<i>Pseudomonas</i>
<i>Acidovorax</i>	<i>Chryseomonas</i>	<i>Psychrobacter</i>
<i>Acinetobacter</i>	<i>Comamonas</i>	<i>Ralstonia</i>
<i>Agrobacterium</i>	<i>Delftia</i>	<i>Roseomonas</i>
<i>Alcaligenes</i>	<i>Flavimonas</i>	<i>Shewanella</i>
<i>Balneatrix</i>	<i>Flavobacterium</i>	<i>Sphingobacterium</i>
<i>Bergeyella</i>	<i>Methylobacterium</i>	<i>Sphingomonas</i>
<i>Bordetella</i>	<i>Moraxella</i>	<i>Stenotrophomonas</i>
<i>Brevundimonas</i>	<i>Myroides</i>	<i>Weeksella</i>
<i>Burkholderia</i>	<i>Ochrobactrum</i>	<i>Xanthomonas</i>
	<i>Oligella</i>	

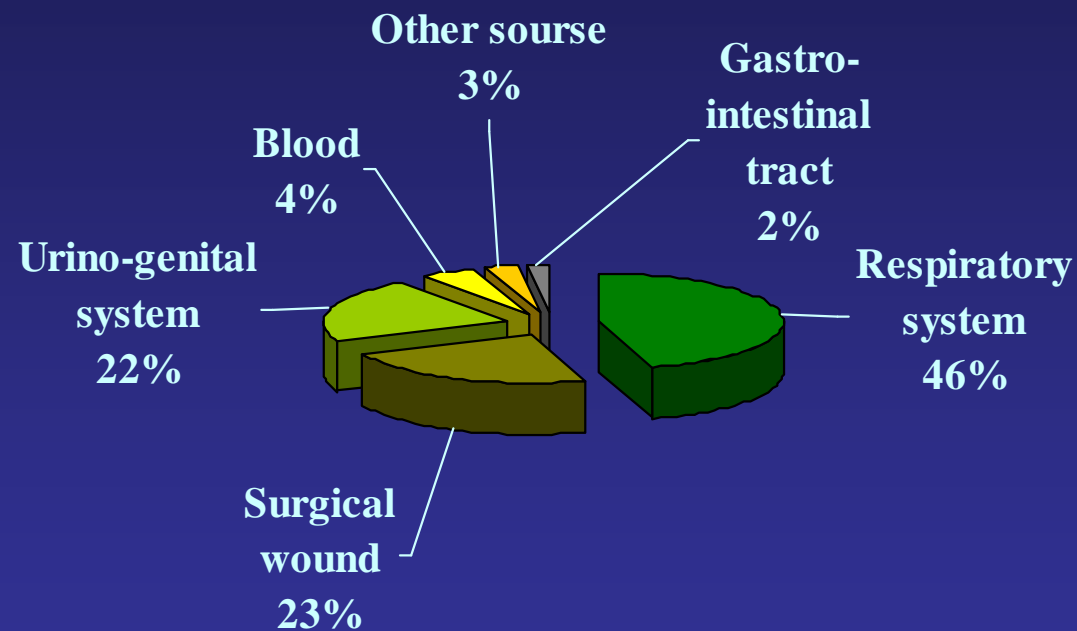


Objective of current study is comparative phenotypic analysis of *three Acinetobacter* spp. nosocomial strain collections

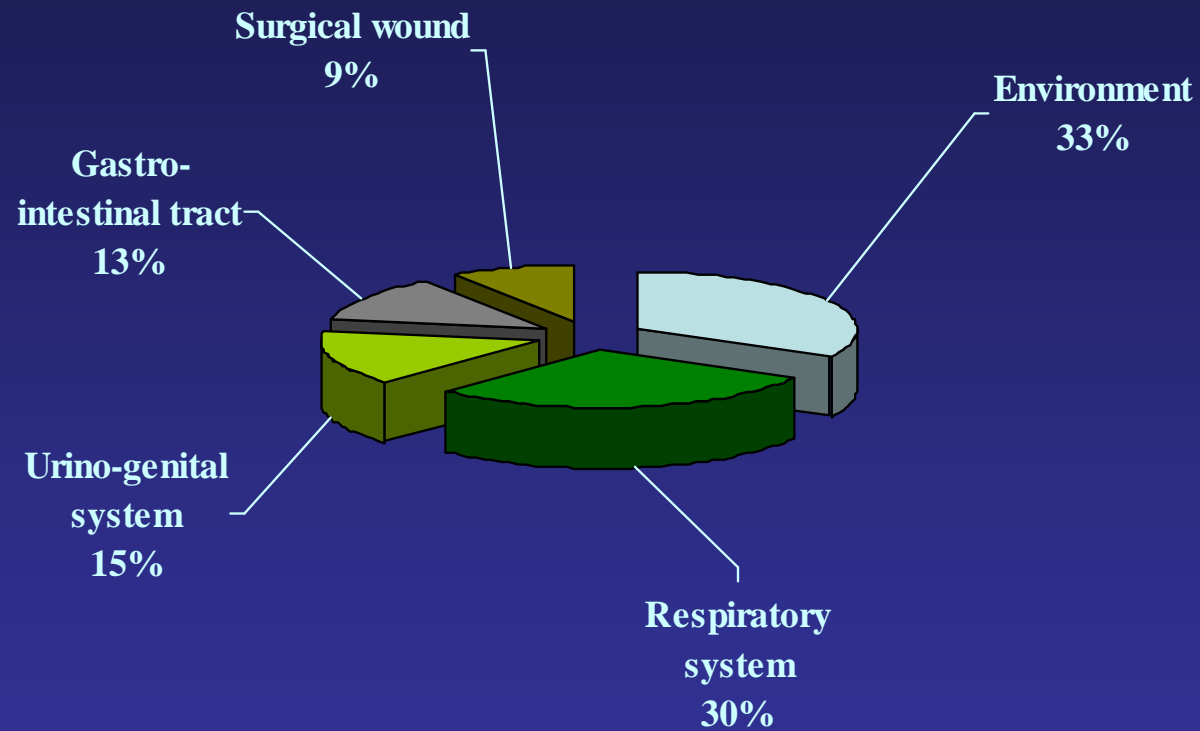




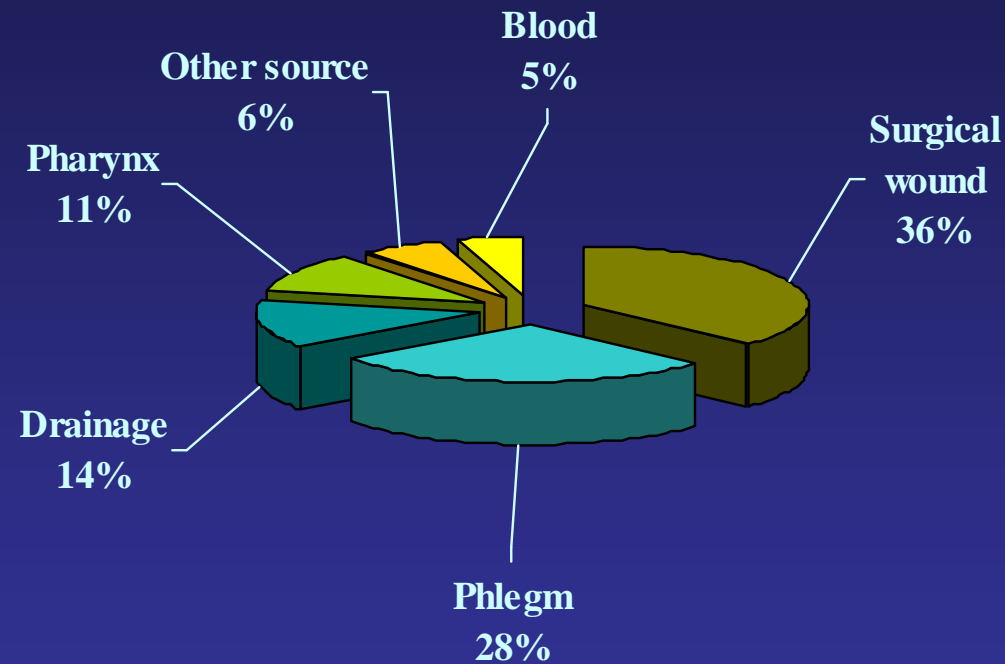
A source of *Acinetobacter* strain obtained in 2003-2004



A source of *Acinetobacter* strain obtained in 2005-2007



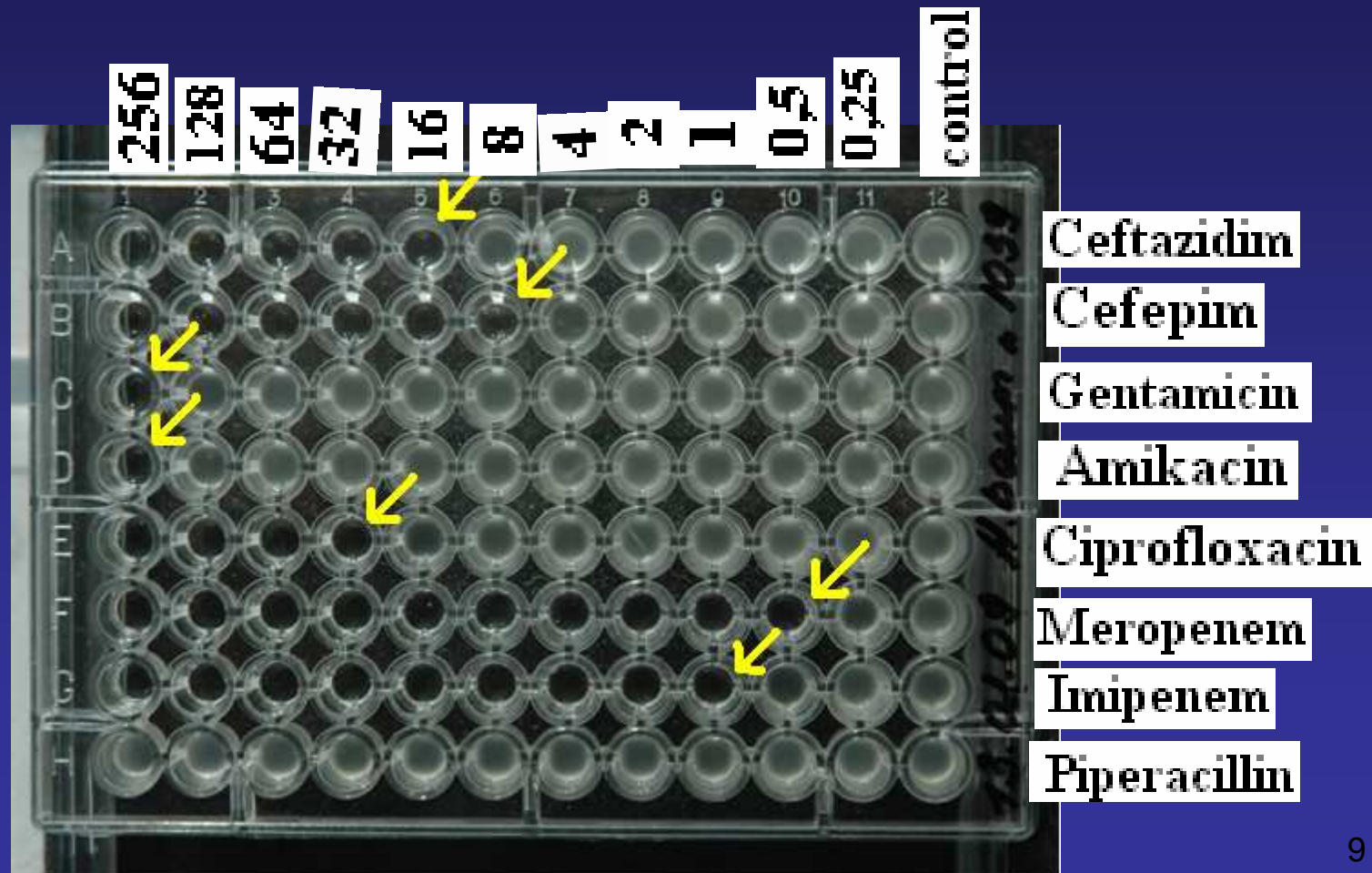
A source of *Acinetobacter* strain obtained in 2008-2009



MICs of antibacterials belong to different functional classes have been determined

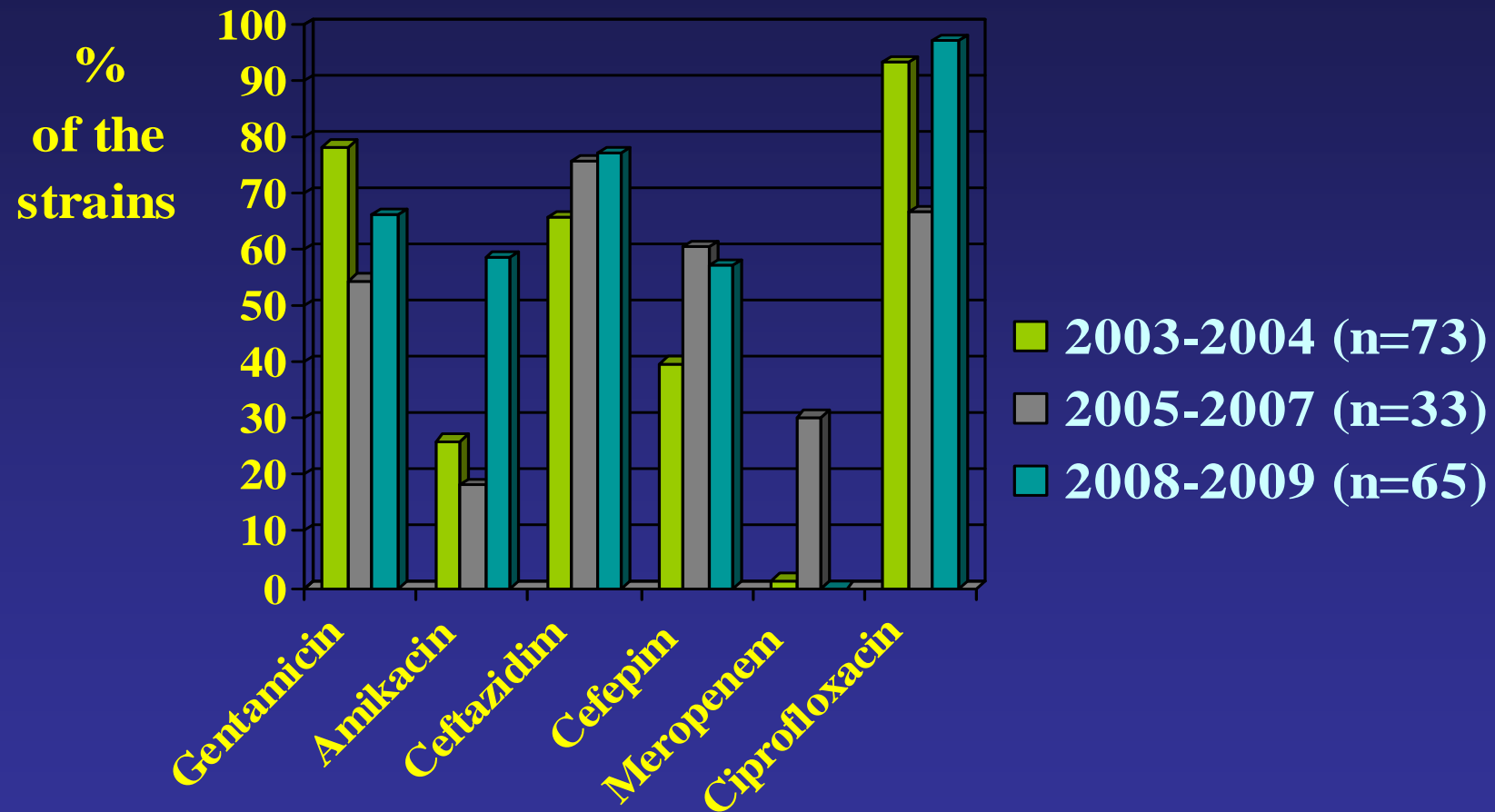
Semi-synthetic penicillins		Cephalosporins				Carba-penems	Amino-glycosides		Fluoro-quinolones	Other functional groups			
		III			IV								
Ampicillin	Ampicillin-sulbactam	Cefotaxim	Ceftazidim	Ceftazidim-clavulanate	Cefoxitin	Cefepim	Imipenem	Meropenem	Gentamicin	Amikacin	Ciprofloxacin	Chloramphenicol	Co-trimoxazole

Measurement of Minimal Inhibitory Concentrations (MICs) of antibacterials ($\mu\text{g/ml}$) by microdilution in broth (CLSI, 2008)

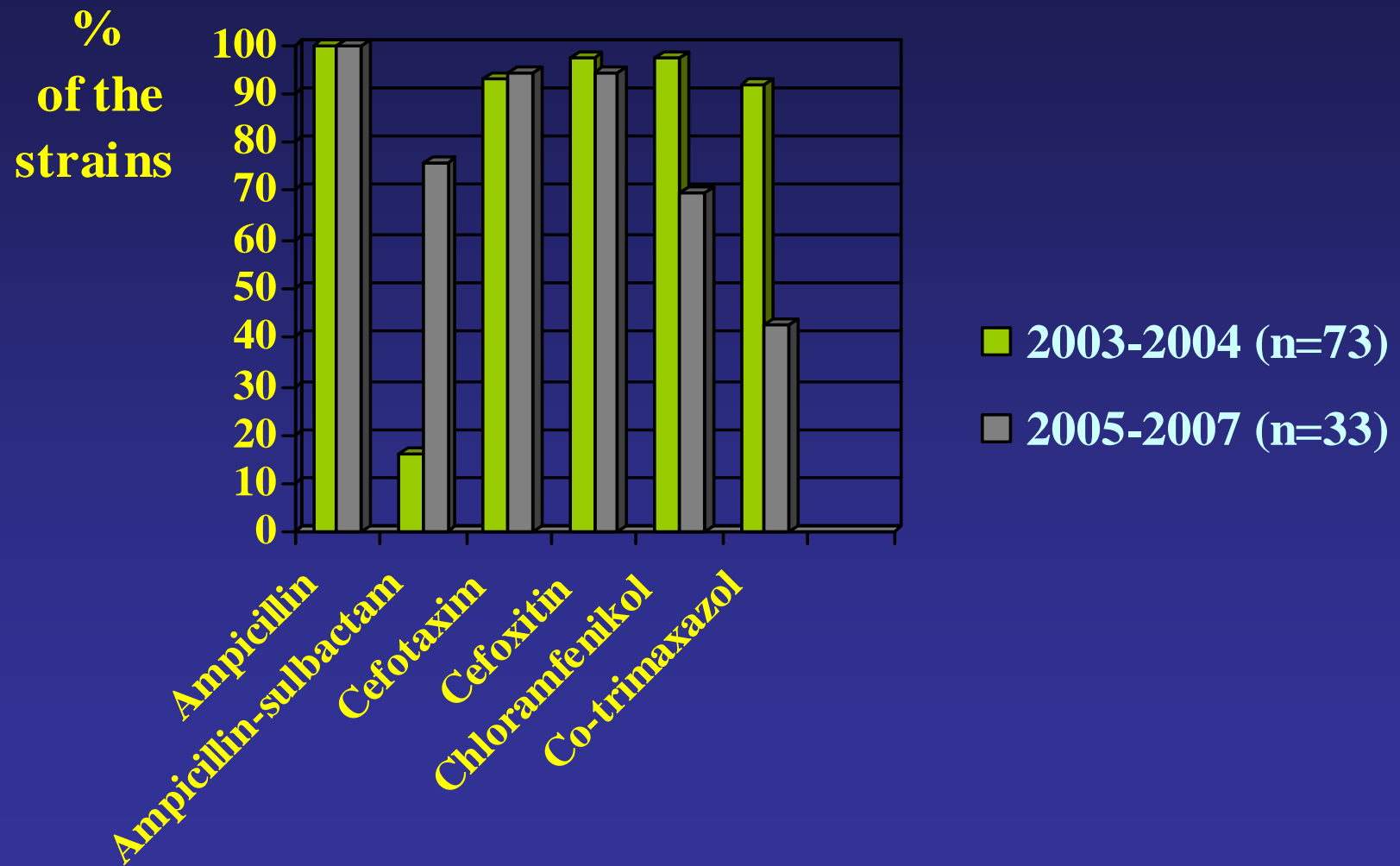


Results

MICs of antibacterials for *Acinetobacter* isolates



MICs of antibacterials for *Acinetobacter* isolates



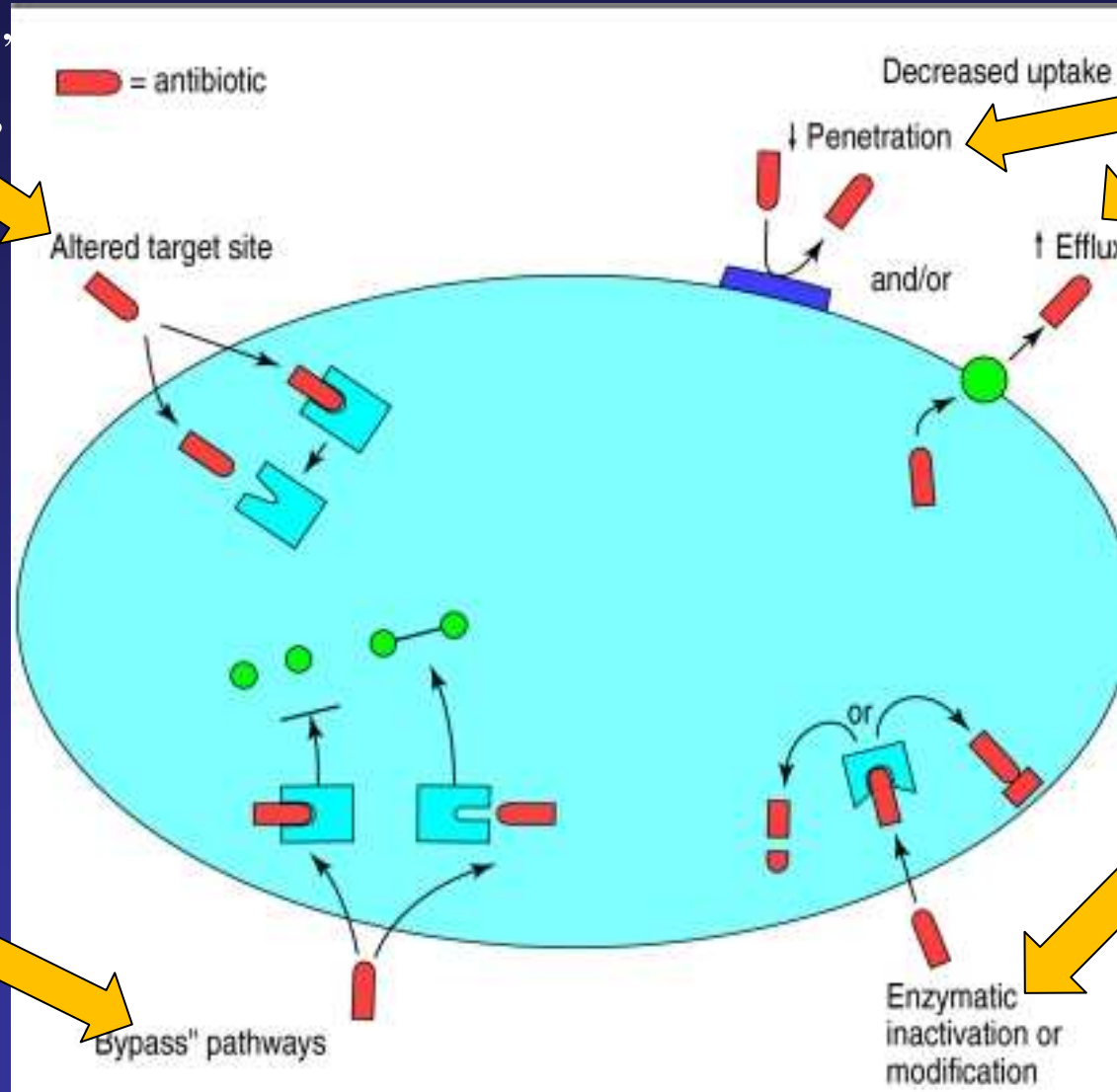
Conclusion

Acinetobacter nosocomial isolates collected from Russian hospitals on the period 2003-2009 characterized on high level and wide spectrum of antibacterial resistance.

Monitoring of the resistance phenotype is important for the estimation of epidemiological situation on the hospitals and geographical territories and for design of adequate therapy.

Antibacterial resistance mechanisms

Aminoglycosides,
Fluoroquinolones

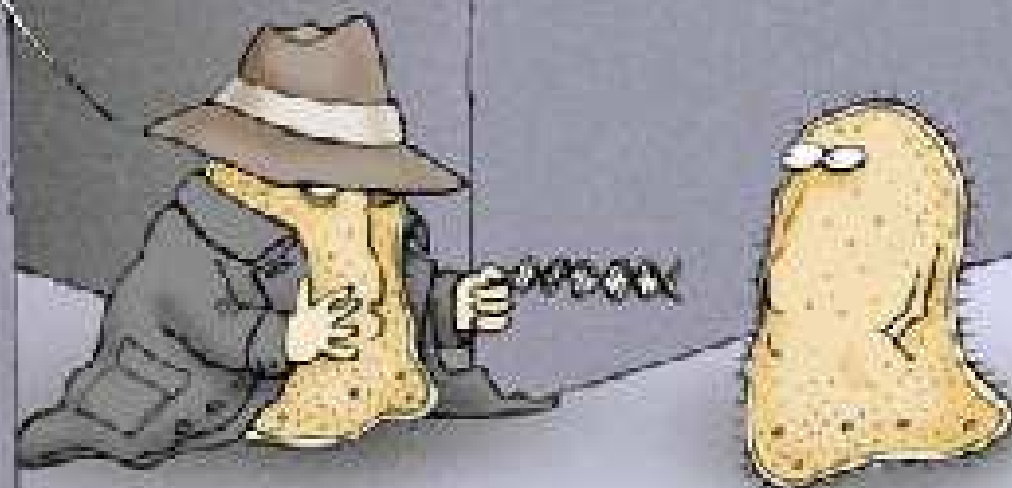


All classes
of drugs

Beta-lactams
Amino-
glycosides

Sulfanilamides

Pssst! Hey kid! Wanna be a Superbug...?
Stick some of this into your genome...
Even penicillin won't be able to harm you...!



INCK

Proposal on future

Further objectives for future study is molecular mechanisms of observed resistance (most effective genes, plasmids, and clones), for understanding of going processes.

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Thank you for attention!