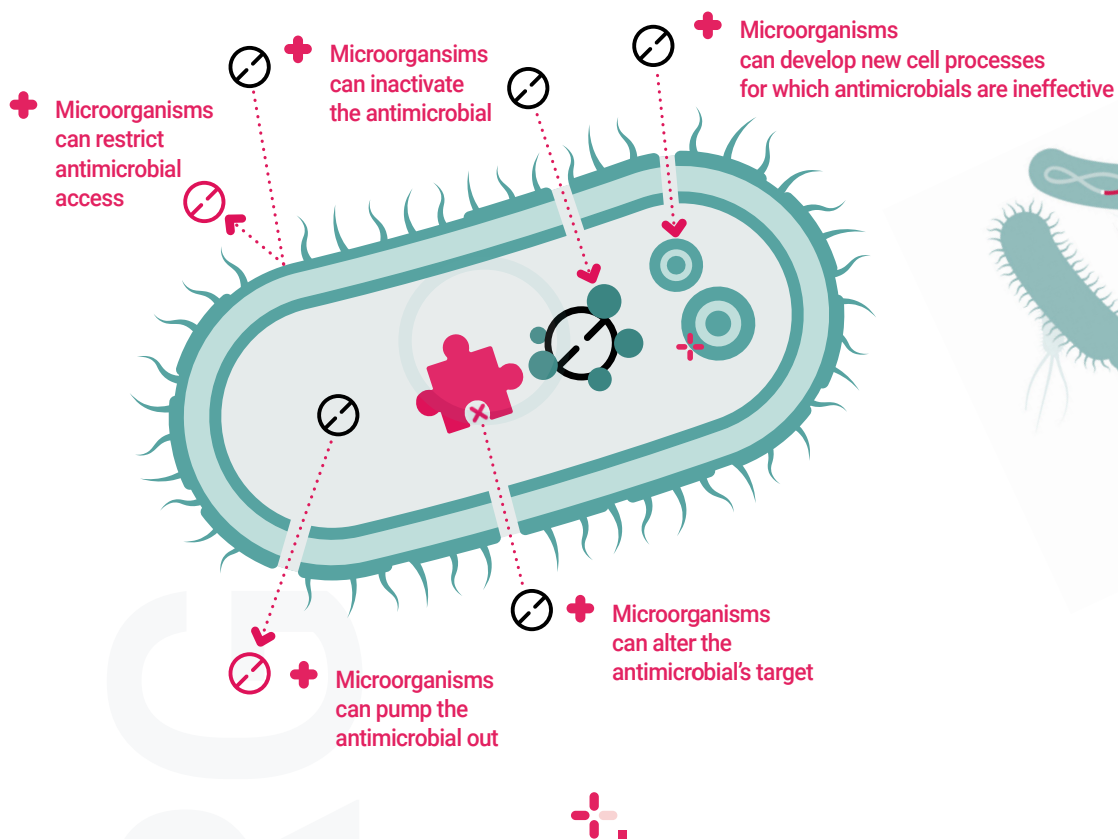


Resistance Gene Detection

Bacteria and fungi have developed **Resistance Mechanisms** to fight against antimicrobials and survive. **Antibiotic Resistance Genes** (ARGs) contain the DNA instructions by which microorganisms build their resistance mechanisms.



ARG identification empowers the provider to prescribe the right antimicrobial the first time

	ARG Guided Prescribing with Acutis Reveal™	Non-ARG Guided Prescribing
Identify the microorganism with PCR	✓	✓
Identify ARGs in the microorganisms	✓	✗
Prescribe antimicrobial not affected by detected ARG	✓	✗*

* Potential

The Clinical Significance of Antimicrobial Resistance Gene Identification

PCR

- + Pathogen Detection
- + Antibiotic Recommendation
- + ARG Detection

Accurate
Pathogen
Identification

Precise
Medication
Recommendation

Acutis Reveal™ report

Name Patient, Test
Birth 1/01/2001
Gender Female
ID 1111-00112233
Matrix Clean Catch Urine

Accession# 1234567
Sample ID ORDER-123
Collection Date 6/01/2022 3:00 PM
Received Date 6/02/2022 10:36 AM
Report Date 6/03/2022 6:43 AM

Status - **FINAL**
Pathogen detected
Doctor Organization Doctor Test Clinic

Urinary Tract Infection (UTI) - detected by PCR

Organisms	Outcome, CFU/mL
E. Coli	Detected, > 100,000
Aerococcus urinae	Detected, > 10,000
Enterococcus faecalis	Detected, 10,000 - 100,000

Treatment recommendations & possible resistance

Treatment	Organisms detected: Colony count:			E. Coli 10,000 CFU/mL			Aerococcus urinae < 10,000 CFU/mL			Enterococcus faecalis 10,000 - 100,000		
	EMP/RGD	AST	MIC	EMP/RGD	AST	MIC	EMP/RGD	AST	MIC	EMP/RGD	AST	MIC
Trimethoprim-Sulfamethoxazole	EMP	S	9									
Ampicillin										EMP	S	3
Amoxicillin										EMP	I	4
Amoxicillin-Clavulanic acid												
Nitrofurantoin	EMP	S	32		R	1				EMP	S	20
Ciprofloxacin	RGD	R	1		S	16						
					I	2						

RGD: Resistance Gene Detected
EMP: Empirical Recommendation

AST: Antimicrobial Sensitivity Test (S = Susceptible - I = Intermediate - R = Resistant)
MIC: Minimum Inhibitory Concentration

Antibiotic resistant genes - detected by PCR

CTX-M group, Qnr



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