



One Day One Genome

Escherichia coli

A highly adaptable microorganism that can function as a normal gut microbe, serve as an essential tool in biotechnology, or act as a possible pathogen



ISOLATION

Stool sample from a TB patient after six months of anti-TB treatment



GENOMICS

Whole genome sequencing (WGS) to investigate the impact of prolonged antibiotic exposure on the patient's gut microbiota



INSIGHTS

Resistance to five different types of antibiotics



TRANSLATION

Crucial information for development of diagnostic tools to combat antimicrobial resistance

Escherichia coli (A10)

Genome Accession Number: INS0009885

Quality of Genome Assembly and Annotation:

Results from indigenously developed **BHARAT** analysis pipeline: (**B**acterial **H**ybrid genome **A**ssembly and **R**apid **A**nnnotation **T**oolset)

Table 1: Assembly Details	
Contigs	98
GC Content	50.56
Contig L50	9
Genome length	4,953,602 bp
Contig N50	184,749

Table 2: Annotated Genome Features	
CDS	4,821
tRNA	82
Repeat Regions	23
rRNA	4

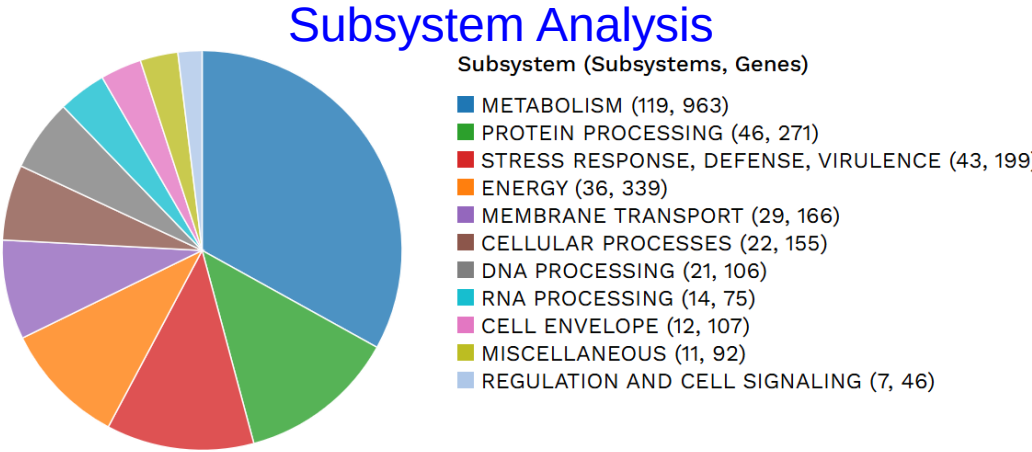


Table 3: Antimicrobial Resistance Genes	
AMR Mechanism	Genes
Antibiotic target in susceptible species	Alr, Ddl, dxr, EF-G, EF-Tu, folA, Dfr, folP, gyrA, gyrB, inhA, fabI, Iso-tRNA, kasA, MurA, rho, rpoB, rpoC, S10p, S12p
Efflux pump conferring antibiotic resistance	AcrAB-TolC, AcrAD-TolC, AcrEF-TolC , AcrZ, EmrAB-TolC, EmrD, EmrKY-TolC, MacA, MacB, MdfA/Cmr, MdtABC-TolC, MdtEF-TolC, MdtL, SugE, Tet(B), TolC/OpmH
Protein altering cell wall charge conferring antibiotic resistance	GdpD, PgsA
Antibiotic resistance gene cluster,cassette,or operon	MarA, MarB, MarR
Regulator modulating expression of antibiotic resistance genes	AcrAB-TolC, EmrAB-TolC, GadE, H-NS, OxyR

