



जैवप्रौद्योगिकी विभाग
DEPARTMENT OF
BIOTECHNOLOGY



ICGEB International Centre for Genetic
Engineering and Biotechnology

#OneDayOneGenomeInitiative

Today's Genome: *Cobetia marina* (an aerobic bacteria found in oceans & high-salt environments)



Cobetia marina

Genome Size: 3.3Mb

Total Genes: 3127

Protein Coding Genes: 2742

Potential benefits

Bioremediation: Cleans up pollutants like oil-spills
& industrial waste in marine environments

Can act as a source of unique enzymes which
help in production of bioplastics, pharmaceuticals
& detergents

Can capture & store carbon-dioxide and thus
help to mitigate climate change impacts

Quality of Genome Assembly and Annotation:
Results from indigenously developed **BHARAT** analysis pipeline:
(**B**acterial **H**ybrid genome **A**ssembly and **R**apid **A**nnotation **T**oolset)

Table 1: Assembly Details	
Contigs	1
GC Content	63.19
Contig L50	1
Genome length	3,345,506 bp
Contig N50	3,345,506

Table 2: Annotated Genome Features	
CDS	3,025
tRNA	71
Repeat Regions	22
rRNA	20

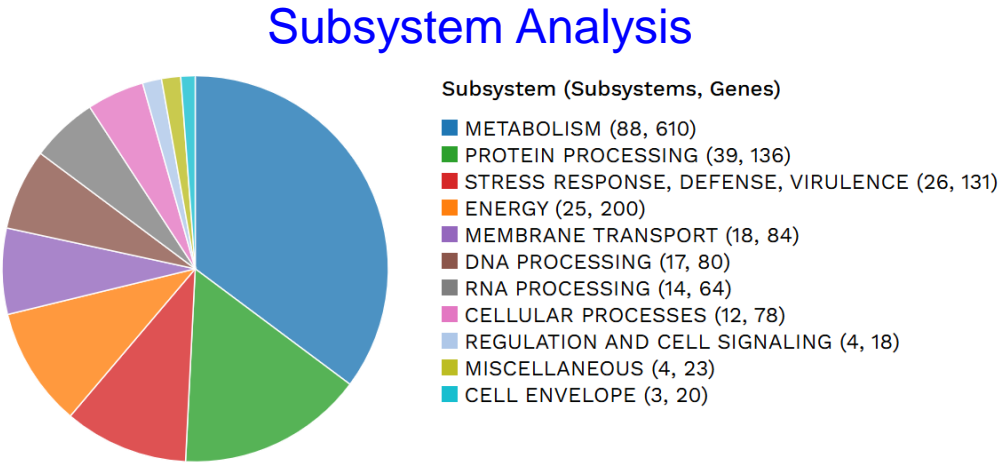


Table 3: Antimicrobial Resistance Genes	
AMR Mechanism	Genes
Antibiotic target in susceptible species	Alr, Ddl, dxr, EF-G, EF-Tu, folA, Dfr, folP, gyrA, gyrB, Iso-tRNA, kasA, MurA, rho, rpoB, rpoC, S10p, S12p
Efflux pump conferring antibiotic resistance	Tet(35), TolC/OpmH
Protein altering cell wall charge conferring antibiotic resistance	GdpD, PgsA
Protein modulating permeability to antibiotic	OxyR
Antibiotic target replacement protein	fabV

