



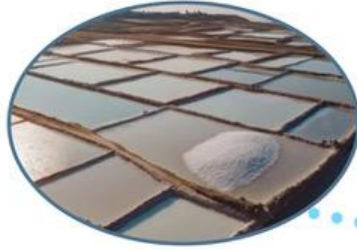
जैवप्रौद्योगिकी विभाग
DEPARTMENT OF
BIOTECHNOLOGY



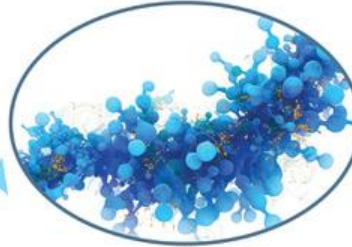
ICGEB International Centre for Genetic
Engineering and Biotechnology

#OneDayOneGenomeInitiative

Today's Genome: *Synechococcus elongatus* BDU (a photosynthetic bacterium which thrives in sea ecosystems)



Salt-pan



*Synechococcus
elongatus* BDU (isolated
from an abandoned salt-
pan in Odisha)

Application



Genome Size: 3.2 Mb
No of genes: 3222

Can be used to capture flue-gases from factories
and industries

Can be used for production of phycocyanin, a blue
dye which finds usage in food & cosmetic industry

Quality of Genome Assembly and Annotation:

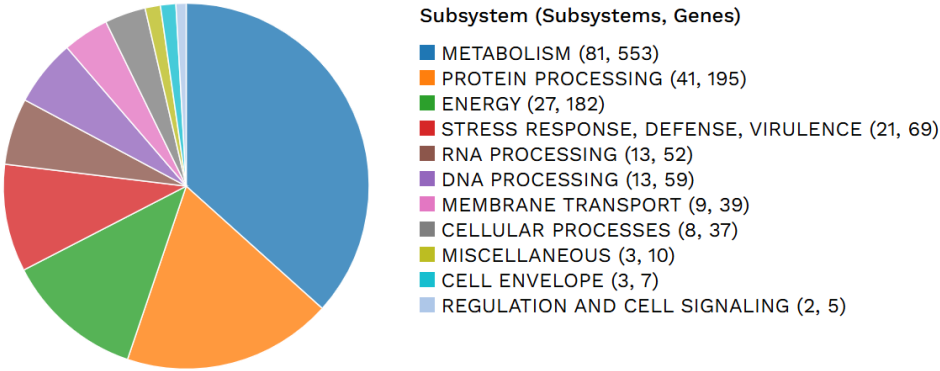
Results from indigenously developed **BHARAT** analysis pipeline:
(**B**acterial **H**ybrid genome **A**ssembly and **R**apid **A**nnotation **T**oolset)

Table 1: Assembly Details	
Contigs	62
GC Content	49.35
Contig L50	7
Genome length	3,257,113 bp
Contig N50	176,178

Table 2: Annotated Genome Features	
CDS	3,311
tRNA	44
Repeat Regions	0
rRNA	2

Table 3: Antimicrobial Resistance Genes	
AMR Mechanism	Genes
Antibiotic target in susceptible species	Alr, Ddl, dxr, EF-G, EF-Tu, folP, gyrA, gyrB, inhA, fabI, Iso-tRNA, kasA, MurA, rpoB, S10p, S12p
Antibiotic activation enzyme	KatG
Protein altering cell wall charge conferring antibiotic resistance	GdpD, PgsA
Gene conferring resistance via absence	gidB

Subsystem Analysis



Genome Assembly

