

One Day One Genome

Pseudomonas psychrophila



Isolation

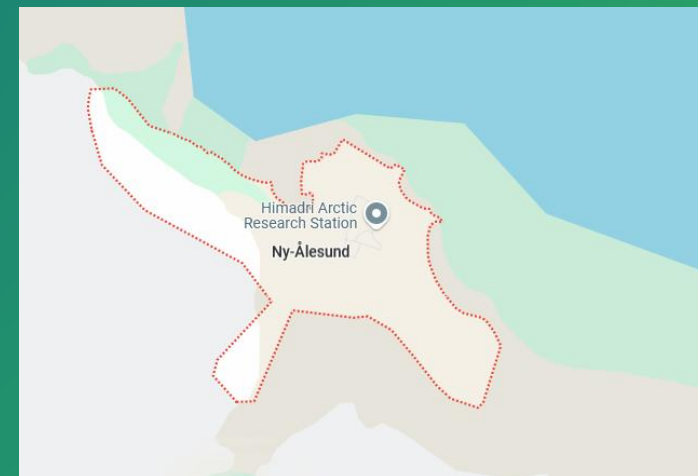
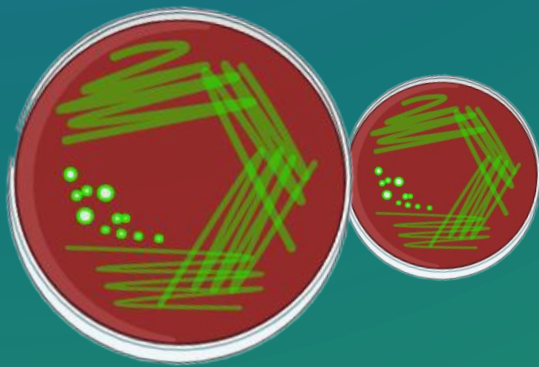
It is a facultatively psychrophilic bacterium isolated from the Arctic fjord Ny-alesund in the Svalbard Archipelago, as part of the Second Indian Arctic Expedition

Findings

Sequencing identified several cold acclimation genes including cold shock proteins, and chaperones involved in the adaptive mechanism to thrive in the cold environment

Application

Reveals the cellular mechanisms which favours the bacteria in conferring cold adaptation.



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		Table 2: Annotated Genome Features	
Contigs	150	CDS	5,072
GC Content	57.53	tRNA	57
Contig L50	30	Repeat Regions	0
Genome length	5,269,174 bp	rRNA	16
Contig N50	54,126		

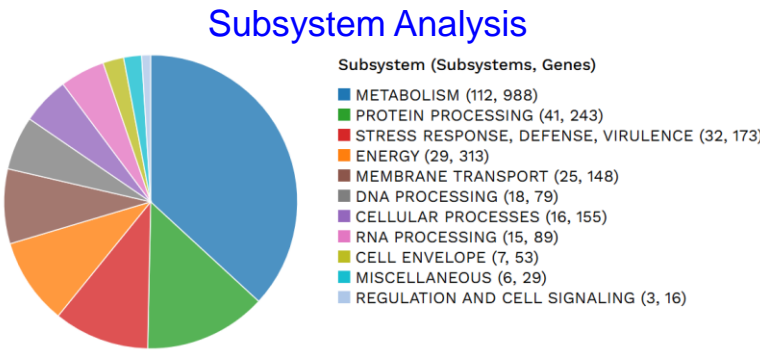


Table 3: Antimicrobial Resistance Genes	
AMR Mechanism	Genes
Antibiotic target in susceptible species	Alr, Ddl, dxr, EF-G, EF-Tu, folA, Dfr, folP, gyrA, gyrB, inhA, fabI, Iso-tRNA, kasA, rho, rpoB, rpoC, S10p, S12p
Antibiotic target replacement protein	FabG, HtdX
Efflux pump conferring antibiotic resistance	EmrAB-OMF, EmrAB-TolC, MacA, MacB, MdtABC-OMF, MdtABC-TolC, MexAB-OprM, MexEF-OprN, MexEF-OprN system, MexHI-OpmD, MexJK-OprM/OpmH, TolC/OpmH, TriABC-OpmH
Gene conferring resistance via absence	gidB
Protein altering cell wall charge conferring antibiotic resistance	GdpD, PgsA

Genome Assembly

