



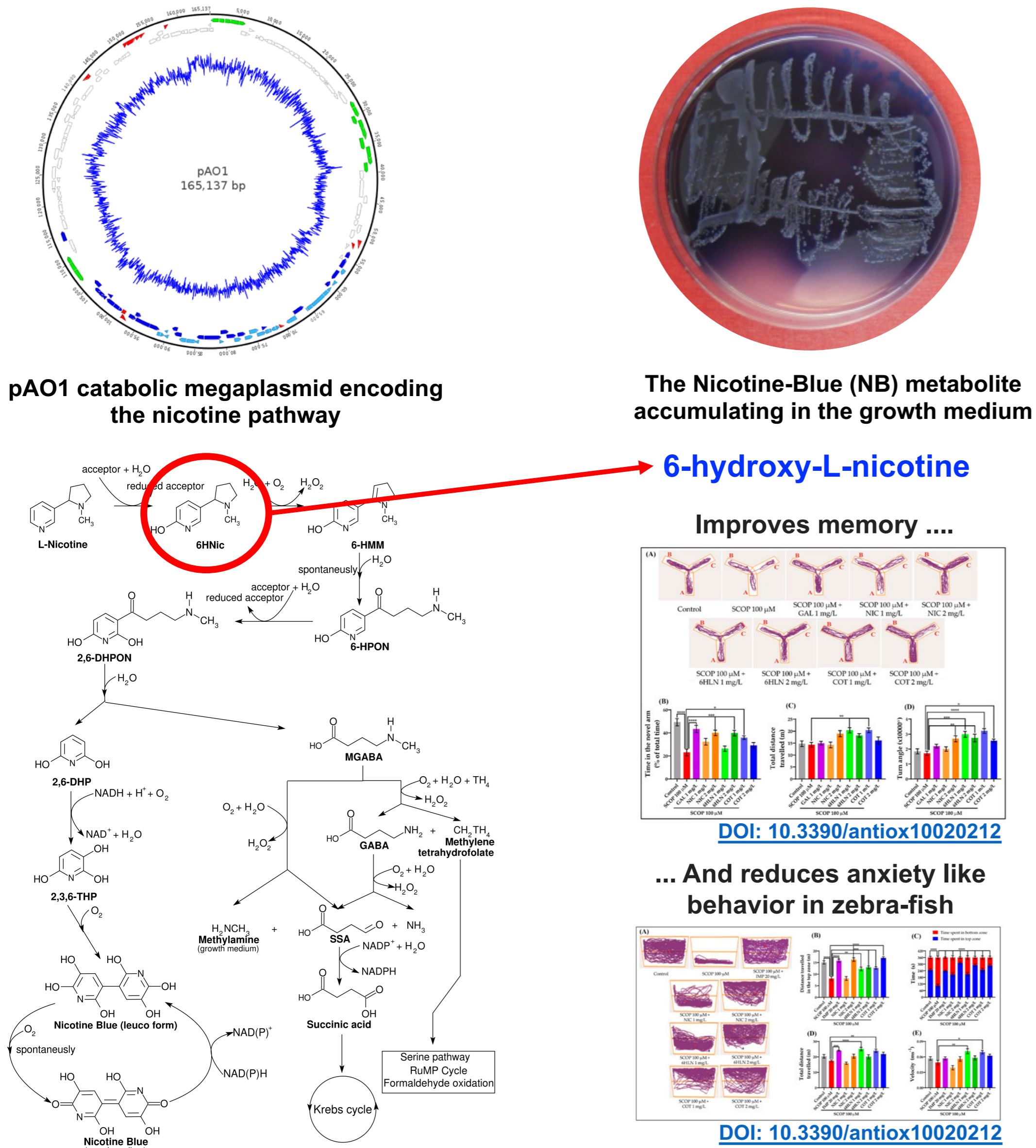
Draft genome of a useful bacteria *Paenarthrobacter nicotinovorans*



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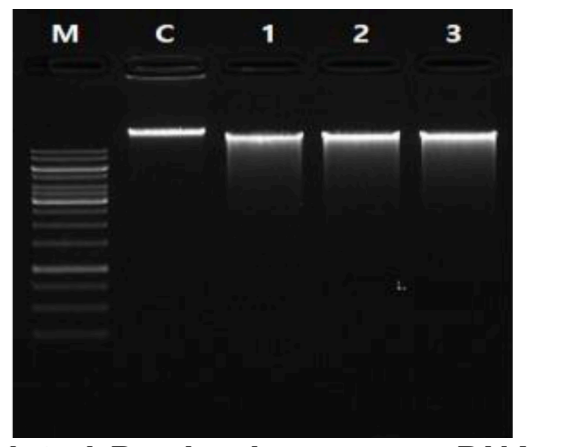
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1. Nicotine degradation pathway of *Paenarthrobacter nicotinovorans*



2. Sequencing and assembly

1. gDNA isolation – DNeasy UltraClean Microbial Kit, Qiagen

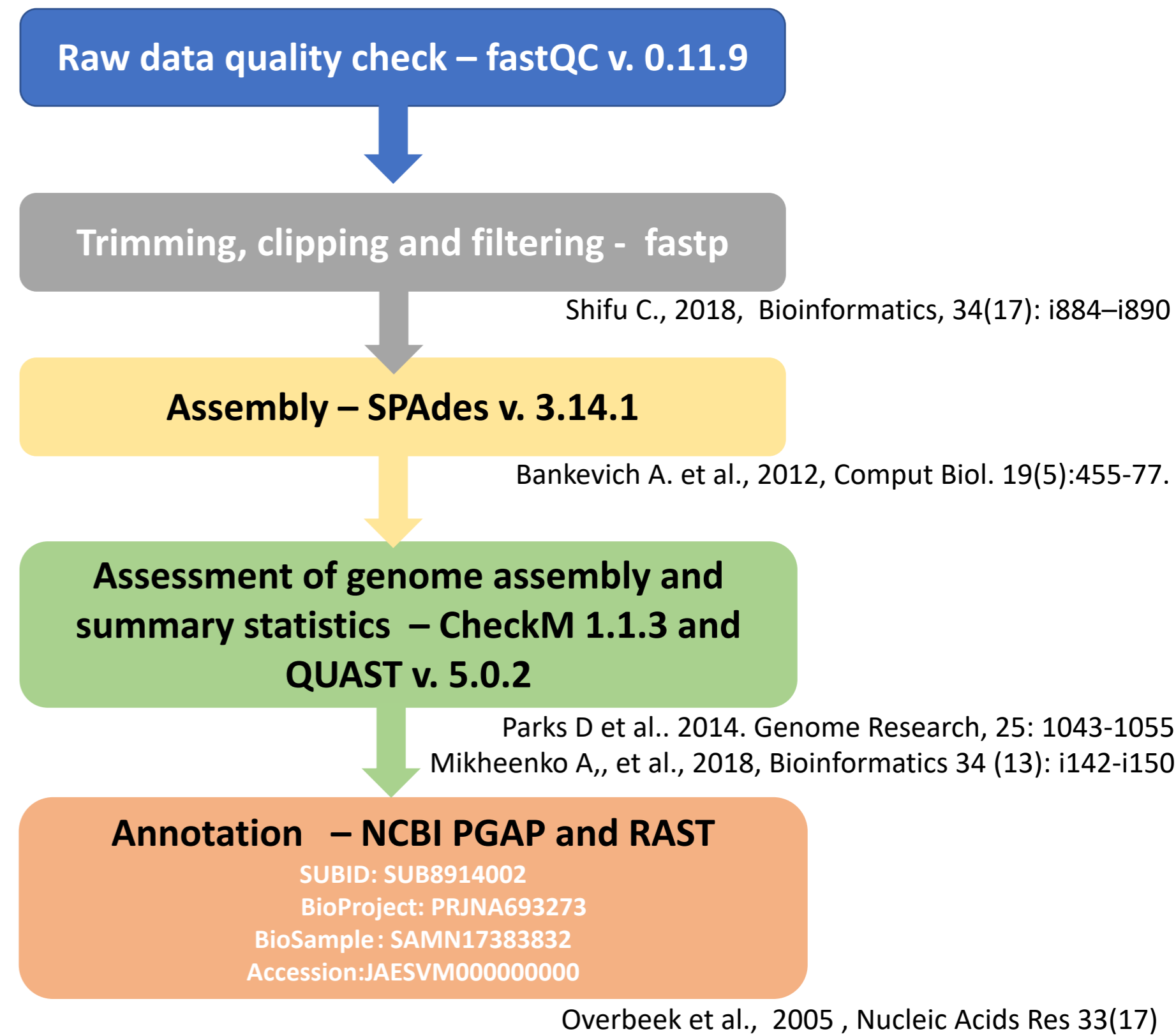


1, 2, 3 - Isolated *P. nicotinovorans* gDNA
1% agarose gel, 30min running at 100V, 0.5ul of DNA loaded

2. Sequencing – Illumina Platform, Paired-end, TrueSeq PCR Free (350)



3. Data analysis

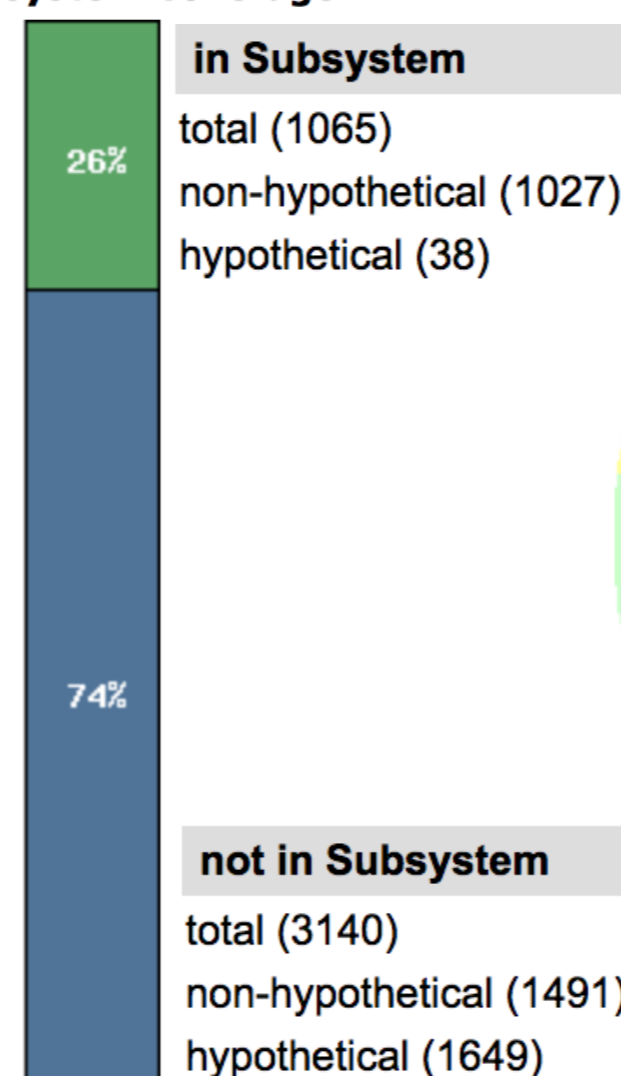


3. Assembled genome

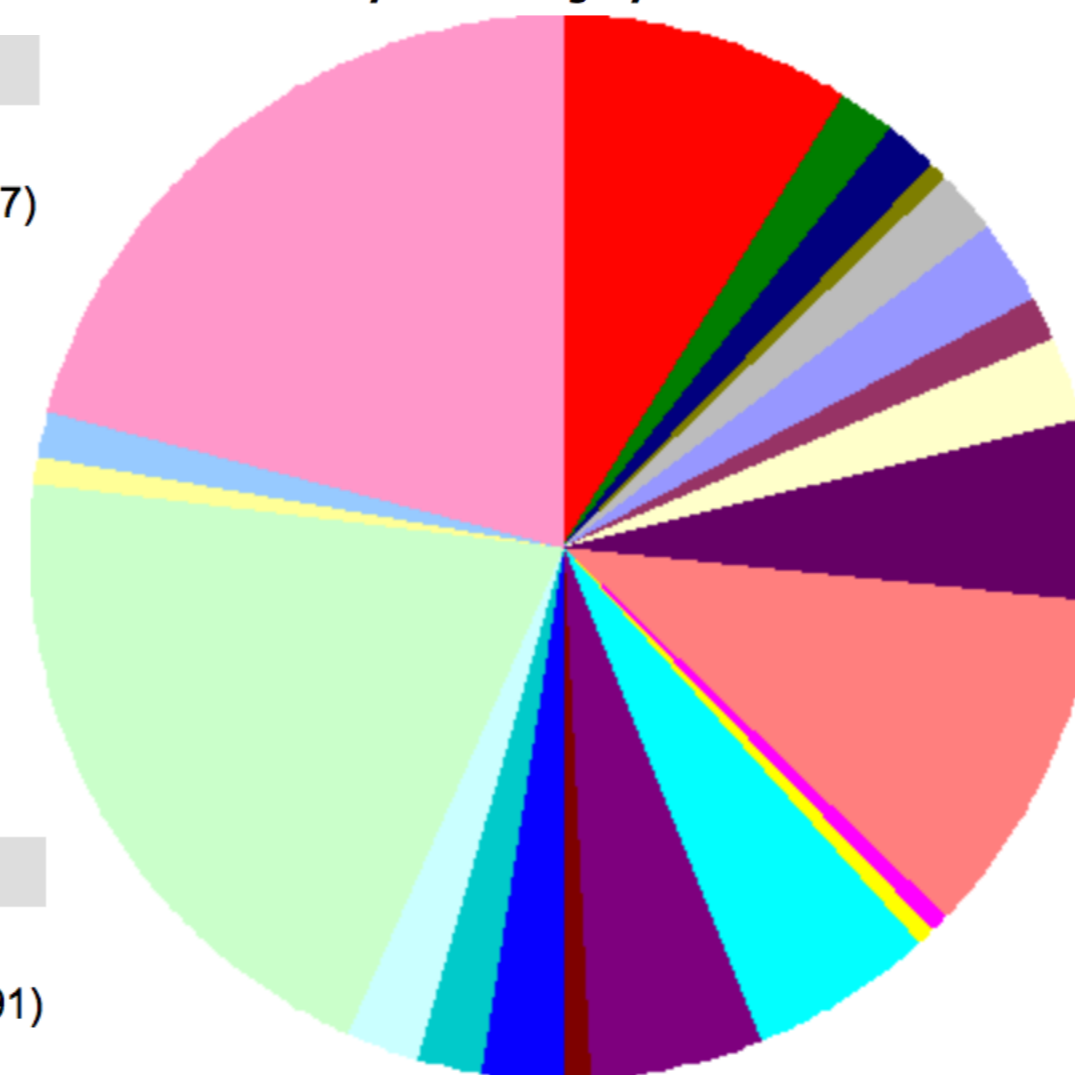
Summary statistics of the draft genome

CheckM		QUAST	
GC	0,6315601	GC (%)	63,16
GC std	0,0142442	-	-
Genome size	4442858	Total length	4442858
# ambiguous bases	0	# N's per 100 kbp	0
# contigs	43	# contigs	43
Longest contig	905946	Largest contig	905946
Mean contig length	103322,28		
N50 (contigs)	238729	N50	238729
-	-	N75	119844
-	-	L50	6
-	-	L75	13
Coding density	0,9053294	# predicted genes (unique)	4125
Translation table	11	# contigs (>= 0 bp)	43
# predicted genes	4139	# contigs (>= 1000 bp)	43
Completeness	99,707602	# contigs (>= 5000 bp)	36
Contamination	0	# contigs (>= 10000 bp)	35
-	-	# contigs (>= 25000 bp)	27
-	-	# contigs (>= 50000 bp)	22
-	-	Total length (>= 1000 bp)	4442858
-	-	Total length (>= 5000 bp)	4429723
-	-	Total length (>= 10000 bp)	4419943
-	-	Total length (>= 25000 bp)	4274365
-	-	Total length (>= 50000 bp)	4106955

Subsystem Coverage



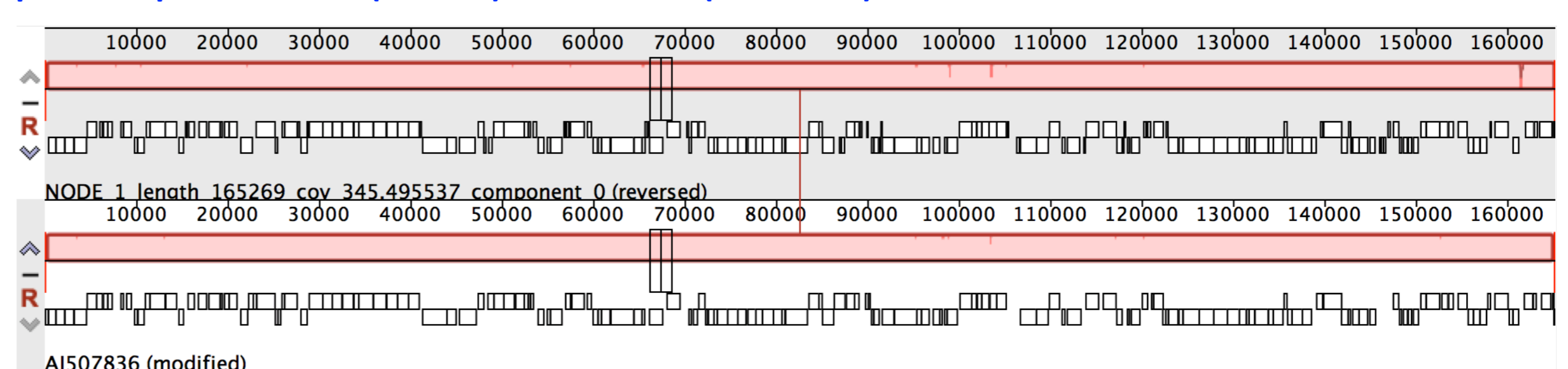
Subsystem Category Distribution



Subsystem Feature Counts

- Cofactors, Vitamins, Prosthetic Groups, Pigments (149)
- Cell Wall and Capsule (27)
- Virulence, Disease and Defense (27)
- Potassium metabolism (7)
- Photosynthesis (0)
- Miscellaneous (33)
- Phages, Prophages, Transposable elements, Plasmids (0)
- Membrane Transport (41)
- Iron acquisition and metabolism (24)
- RNA Metabolism (42)
- Protein Metabolism (173)
- Nucleosides and Nucleotides (87)
- Cell Division and Cell Cycle (0)
- Motility and Chemotaxis (1)
- Regulation and Cell signaling (11)
- Secondary Metabolism (10)
- DNA Metabolism (89)
- Fatty Acids, Lipids, and Isoprenoids (87)
- Nitrogen Metabolism (16)
- Dormancy and Sporulation (1)
- Respiration (40)
- Stress Response (31)
- Metabolism of Aromatic Compounds (38)
- Amino Acids and Derivatives (331)
- Sulfur Metabolism (11)
- Phosphorus Metabolism (23)
- Carbohydrates (338)

pAO1 sequence – new (Node 1) vs GenBank (AJ507836)



4. Conclusion

The draft genome of *Paenarthrobacter nicotinovorans* was successfully assembled and annotated. It consists of 43 contigs totaling 4,4 Mbp. One contig was identified as pAO1 megaplasmid, but alignment with the corresponding GenBank sequence shows 165205/165225(99%) identity and 17/165225 gaps.