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GitHub Link: https://github.com/jmande1/bioinformatics

Comparing SPAdes versus ABySS

There are a multitude of differences across the output between SPAdes and ABySS. Similarities though, are few, and thus would be easier to list them versus the latter. The following parameters are similar between SPAdes and ABySS: Reference GC (%), # scaffold gap ext. mis., # unaligned mis. contigs, complete and partial BUSCO (%), # c. translocations, # c. inversions, # scaffold misassemblies, # s. relocations, # s. translocations, # s. inversions, # unaligned mis. contigs, # fully unaligned contigs, fully unaligned length, and # partially unaligned contigs.

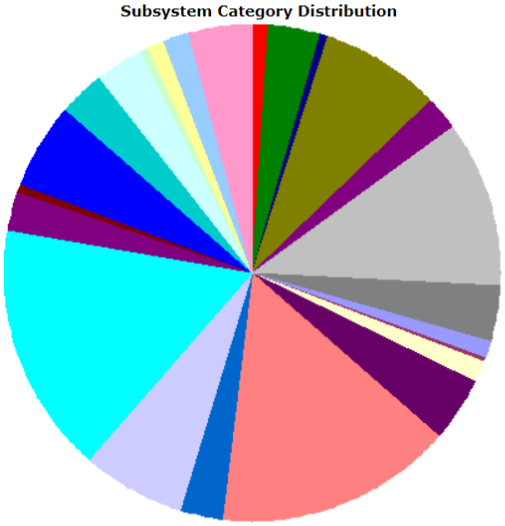
The important output metrics are the # contigs, the total sequence length, the contig N50, L50, GC content, total aligned length, and BUSCO results. For the # contigs, the output metrics are 191 and 150, respectively from Spades and Abyss. For the total sequence length (>= 0 bp), the output metrics are 4813654 and 4871123, respectively from Spades and Abyss. For the contig N50, the output metrics are 193475 and 272520 from Spades and Abyss respectively. For the L50, the output metrics are 8 and 6 from Spades and Abyss respectively. For the GC content (%), the output metrics are 52.13 and 52.19 from Spades and Abyss respectively. For the total aligned length, the output metrics are 4710913 and 4769483, from Spades and Abyss respectively. Interestingly, the results were identical with the complete BUSCO at 98.65% and the partial BUSCO at 0.00%.

Subsystem Information

Subsystem Statistics | Features in Subsystems

Subsystem Coverage

Subsystem Category Distribution



Subsystem Feature Counts

- RNA Metabolism (62)
- Amino Acids and Derivatives (341)
- Stress Response (88)
- Iron acquisition and metabolism (28)
- Cell Division and Cell Cycle (7)
- DNA Metabolism (83)
- Protein Metabolism (235)
  - Protein folding (27)
  - Protein biosynthesis (159)
  - Protein processing and modification (12)
  - Selenoproteins (8)
    - Selenocysteine metabolism (8)
  - Protein degradation (29)
- Miscellaneous (23)
- Nitrogen Metabolism (51)
- Cofactors, Vitamins, Prosthetic Groups, Pigments (167)
- Potassium metabolism (15)
- Sulfur Metabolism (25)
- Fatty Acids, Lipids, and Isoprenoids (72)
- Phosphorus Metabolism (35)
- Nucleosides and Nucleotides (82)
- Phages, Prophages, Transposable elements, Plasmids (12)
- Metabolism of Aromatic Compounds (29)
- Regulation and Cell signaling (62)
- Cell Wall and Capsule (66)
- Dormancy and Sporulation (1)
- Membrane Transport (123)
- Motility and Chemotaxis (13)
- Virulence, Disease and Defense (55)
- Secondary Metabolism (4)
- Carbohydrates (357)
- Photosynthesis (0)
- Respiration (145)

Subsystem: Selenocysteine metabolism

Curator gjo

This subsystem's description is:

For more information, please check out the description and the additional notes tabs, below

Diagram | Functional Roles | Subsystem Spreadsheet | Additional Notes

Group Alias (all)	Abbrev.	Functional Role	Reactions	Scenario Reactions	GO	Literature
	needs	selenocysteine-containing	-	-	-	none
AUX	SerRS	Seryl-tRNA synthetase (EC 6.1.1.11)	-	-	GO:0004828	none
AUX	aSerRS	Seryl-tRNA synthetase (EC 6.1.1.11), archaeal	-	-	GO:0004828	none
	SelA	L-seryl-tRNA(Sec) selenium transferase (EC 2.9.1.1)	-	R04689	GO:0004125	none
	PSTK	L-seryl-tRNA(Sec) kinase	-	-	-	none
	SepSecS	O-phosphoseryl-tRNA(Sec) selenium transferase	-	-	-	none
	SelB	Selenocysteine-specific translation elongation factor	-	-	GO:0005525, GO:0006412	none
	SelD	Selenide,water dikinase (EC 2.7.9.3)	-	R03595	GO:0004756	2 Publications
	2-SeU	Selenophosphate-dependent tRNA 2-selenouridine synthase	-	-	-	4 Publications
AUX	Cj1505c	Hypothetical protein Cj1505c	-	-	-	none
AUX	SelA-rel	L-seryl-tRNA(Sec) selenium transferase-related protein	-	-	-	none
AUX	SelA-rel2	L-seryl-tRNA(Sec) selenium transferase-related protein type 2	-	-	-	none
AUX	SelA-H	L-seryl-tRNA(Sec) selenium transferase, probably playing another role	-	-	-	none
AUX	MJ0158	UPF0425 pyridoxal phosphate-dependent protein MJ0158	-	-	-	none
	SBP2	SECIS-binding protein 2	-	-	-	none