



Bioinformatic Analysis Report

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Project title: Genome Sequence of Nannochloropsis
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Type of report: Summary Reference Alignment Report
Date: September 1, 2011
Details: All pooled RNA sequencing reads aligned to the transcriptome assembly

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1. Summary mapping report

1.1 Summary statistics

	Count	Average length	Total bases
Reads	17,634,460	50.51	890,679,793
Matched	16,094,133	50.51	812,838,793
Not matched	1,540,327	50.54	77,841,000
References	37,055	459	17,024,428
Paired reads	6,960,747	163.4	
Broken paired reads	2,172,639	50.1	

1.2 General algorithm parameters

Parameter	Value
Conflict resolution	Vote (A, C, G, T)
Non specific matches	random
Masking of references	none

1.3 Reads parameters

Reads	Length	Type	Parameters
pooled_NaGa_total_RNA (originally paired) trimmed (paired)	Short	Paired	Min distance=50,Max distance=500

1.4 Distribution of read length

Length	Count	Percentage	Cummulative Percentage
20	12,768	0.1%	0.1%
21	7,828	0.0%	0.1%
22	7,945	0.0%	0.2%
23	9,743	0.1%	0.2%
24	11,633	0.1%	0.3%
25	19,557	0.1%	0.4%
26	12,011	0.1%	0.5%

Length	Count	Percentage	Cummulative Percentage
27	11,886	0.1%	0.5%
28	12,288	0.1%	0.6%
29	14,425	0.1%	0.7%
30	23,466	0.1%	0.8%
31	12,984	0.1%	0.9%
32	13,143	0.1%	1.0%
33	13,886	0.1%	1.0%
34	16,027	0.1%	1.1%
35	26,235	0.1%	1.3%
36	15,413	0.1%	1.4%
37	16,119	0.1%	1.5%
38	19,164	0.1%	1.6%
39	25,100	0.1%	1.7%
40	36,561	0.2%	1.9%
41	31,493	0.2%	2.1%
42	24,886	0.1%	2.2%
43	30,876	0.2%	2.4%
44	36,701	0.2%	2.6%
45	59,948	0.3%	3.0%
46	54,877	0.3%	3.3%
47	35,317	0.2%	3.5%
48	39,681	0.2%	3.7%
49	59,887	0.3%	4.0%
50	125,033	0.7%	4.7%
51	16,797,579	95.3%	100.0%

1.5 Distribution of matched read length

Length	Count	Percentage	Cummulative Percentage
20	11,234	0.1%	0.1%
21	6,858	0.0%	0.1%
22	7,476	0.0%	0.2%
23	9,074	0.1%	0.2%
24	10,733	0.1%	0.3%
25	18,048	0.1%	0.4%
26	11,413	0.1%	0.5%
27	11,177	0.1%	0.5%

Length	Count	Percentage	Cummulative Percentage
28	11,553	0.1%	0.6%
29	13,446	0.1%	0.7%
30	21,902	0.1%	0.8%
31	12,074	0.1%	0.9%
32	12,197	0.1%	1.0%
33	12,891	0.1%	1.1%
34	14,781	0.1%	1.1%
35	24,068	0.1%	1.3%
36	14,238	0.1%	1.4%
37	14,789	0.1%	1.5%
38	17,448	0.1%	1.6%
39	22,885	0.1%	1.7%
40	33,117	0.2%	1.9%
41	28,892	0.2%	2.1%
42	22,550	0.1%	2.3%
43	27,897	0.2%	2.4%
44	33,009	0.2%	2.6%
45	53,976	0.3%	3.0%
46	50,251	0.3%	3.3%
47	31,848	0.2%	3.5%
48	35,648	0.2%	3.7%
49	53,623	0.3%	4.0%
50	112,260	0.7%	4.7%
51	15,332,777	95.3%	100.0%

1.6 Distribution of non-matched read length

Length	Count	Percentage	Cummulative Percentage
20	1,534	0.1%	0.1%
21	970	0.1%	0.2%
22	469	0.0%	0.2%
23	669	0.0%	0.2%
24	900	0.1%	0.3%
25	1,509	0.1%	0.4%
26	598	0.0%	0.4%
27	709	0.0%	0.5%
28	735	0.0%	0.5%

Length	Count	Percentage	Cummulative Percentage
29	979	0.1%	0.6%
30	1,564	0.1%	0.7%
31	910	0.1%	0.7%
32	946	0.1%	0.8%
33	995	0.1%	0.9%
34	1,246	0.1%	1.0%
35	2,167	0.1%	1.1%
36	1,175	0.1%	1.2%
37	1,330	0.1%	1.3%
38	1,716	0.1%	1.4%
39	2,215	0.1%	1.5%
40	3,444	0.2%	1.7%
41	2,601	0.2%	1.9%
42	2,336	0.2%	2.1%
43	2,979	0.2%	2.3%
44	3,692	0.2%	2.5%
45	5,972	0.4%	2.9%
46	4,626	0.3%	3.2%
47	3,469	0.2%	3.4%
48	4,033	0.3%	3.7%
49	6,264	0.4%	4.1%
50	12,773	0.8%	4.9%
51	1,464,802	95.1%	100.0%

1.7 Paired reads distance distribution

Distance	Count	Percentage	Cummulative Percentage
43	1	0.0%	0.0%
45	5	0.0%	0.0%
46	2	0.0%	0.0%
47	4	0.0%	0.0%
48	2	0.0%	0.0%
49	13	0.0%	0.0%
50	116	0.0%	0.0%
51	845	0.0%	0.0%
52	801	0.0%	0.0%
53	594	0.0%	0.0%

Distance	Count	Percentage	Cummulative Percentage
54	600	0.0%	0.0%
55	590	0.0%	0.1%
56	581	0.0%	0.1%
57	640	0.0%	0.1%
58	593	0.0%	0.1%
59	623	0.0%	0.1%
60	623	0.0%	0.1%
61	576	0.0%	0.1%
62	558	0.0%	0.1%
63	598	0.0%	0.1%
64	631	0.0%	0.1%
65	701	0.0%	0.1%
66	659	0.0%	0.1%
67	700	0.0%	0.2%
68	691	0.0%	0.2%
69	709	0.0%	0.2%
70	668	0.0%	0.2%
71	659	0.0%	0.2%
72	732	0.0%	0.2%
73	649	0.0%	0.2%
74	669	0.0%	0.2%
75	697	0.0%	0.2%
76	694	0.0%	0.2%
77	707	0.0%	0.3%
78	597	0.0%	0.3%
79	620	0.0%	0.3%
80	597	0.0%	0.3%
81	579	0.0%	0.3%
82	585	0.0%	0.3%
83	582	0.0%	0.3%
84	528	0.0%	0.3%
85	510	0.0%	0.3%
86	509	0.0%	0.3%
87	541	0.0%	0.3%
88	476	0.0%	0.3%
89	436	0.0%	0.4%
90	452	0.0%	0.4%

Distance	Count	Percentage	Cummulative Percentage
91	424	0.0%	0.4%
92	389	0.0%	0.4%
93	372	0.0%	0.4%
94	360	0.0%	0.4%
95	383	0.0%	0.4%
96	369	0.0%	0.4%
97	380	0.0%	0.4%
98	317	0.0%	0.4%
99	359	0.0%	0.4%
100	329	0.0%	0.4%
101	354	0.0%	0.4%
102	316	0.0%	0.4%
103	325	0.0%	0.4%
104	329	0.0%	0.4%
105	329	0.0%	0.4%
106	333	0.0%	0.4%
107	323	0.0%	0.4%
108	307	0.0%	0.4%
109	348	0.0%	0.5%
110	341	0.0%	0.5%
111	366	0.0%	0.5%
112	349	0.0%	0.5%
113	413	0.0%	0.5%
114	425	0.0%	0.5%
115	502	0.0%	0.5%
116	551	0.0%	0.5%
117	619	0.0%	0.5%
118	689	0.0%	0.5%
119	759	0.0%	0.5%
120	884	0.0%	0.5%
121	1,078	0.0%	0.6%
122	1,238	0.0%	0.6%
123	1,429	0.0%	0.6%
124	1,727	0.0%	0.6%
125	2,142	0.0%	0.6%
126	2,492	0.0%	0.7%
127	3,008	0.0%	0.7%

Distance	Count	Percentage	Cumulative Percentage
128	3,715	0.1%	0.8%
129	4,436	0.1%	0.8%
130	5,383	0.1%	0.9%
131	6,588	0.1%	1.0%
132	8,399	0.1%	1.1%
133	10,658	0.2%	1.3%
134	13,874	0.2%	1.5%
135	17,712	0.3%	1.7%
136	22,255	0.3%	2.1%
137	28,259	0.4%	2.5%
138	34,260	0.5%	3.0%
139	41,193	0.6%	3.6%
140	48,981	0.7%	4.3%
141	58,434	0.8%	5.1%
142	68,117	1.0%	6.1%
143	80,354	1.2%	7.2%
144	92,292	1.3%	8.6%
145	103,663	1.5%	10.0%
146	117,662	1.7%	11.7%
147	128,674	1.8%	13.6%
148	136,800	2.0%	15.5%
149	145,194	2.1%	17.6%
150	150,944	2.2%	19.8%
151	155,578	2.2%	22.0%
152	161,813	2.3%	24.4%
153	167,588	2.4%	26.8%
154	171,702	2.5%	29.2%
155	177,534	2.6%	31.8%
156	180,426	2.6%	34.4%
157	180,663	2.6%	37.0%
158	183,105	2.6%	39.6%
159	180,155	2.6%	42.2%
160	174,589	2.5%	44.7%
161	171,064	2.5%	47.2%
162	168,064	2.4%	49.6%
163	165,501	2.4%	52.0%
164	165,387	2.4%	54.3%

Distance	Count	Percentage	Cummulative Percentage
165	164,462	2.4%	56.7%
166	161,218	2.3%	59.0%
167	161,598	2.3%	61.3%
168	158,491	2.3%	63.6%
169	152,297	2.2%	65.8%
170	148,667	2.1%	67.9%
171	142,140	2.0%	70.0%
172	136,856	2.0%	71.9%
173	132,974	1.9%	73.8%
174	130,036	1.9%	75.7%
175	125,160	1.8%	77.5%
176	123,521	1.8%	79.3%
177	120,291	1.7%	81.0%
178	114,573	1.6%	82.7%
179	111,005	1.6%	84.3%
180	105,694	1.5%	85.8%
181	99,081	1.4%	87.2%
182	93,081	1.3%	88.5%
183	87,458	1.3%	89.8%
184	81,524	1.2%	91.0%
185	76,506	1.1%	92.1%
186	71,561	1.0%	93.1%
187	66,074	0.9%	94.0%
188	60,878	0.9%	94.9%
189	54,538	0.8%	95.7%
190	49,055	0.7%	96.4%
191	42,936	0.6%	97.0%
192	36,870	0.5%	97.5%
193	31,382	0.5%	98.0%
194	26,558	0.4%	98.4%
195	22,430	0.3%	98.7%
196	18,249	0.3%	99.0%
197	15,209	0.2%	99.2%
198	12,319	0.2%	99.4%
199	9,895	0.1%	99.5%
200	7,760	0.1%	99.6%
201	6,021	0.1%	99.7%

Distance	Count	Percentage	Cummulative Percentage
202	4,537	0.1%	99.8%
203	3,458	0.0%	99.8%
204	2,506	0.0%	99.9%
205	1,806	0.0%	99.9%
206	1,369	0.0%	99.9%
207	995	0.0%	99.9%
208	721	0.0%	99.9%
209	483	0.0%	99.9%
210	416	0.0%	99.9%
211	304	0.0%	99.9%
212	241	0.0%	99.9%
213	167	0.0%	99.9%
214	131	0.0%	99.9%
215	85	0.0%	99.9%
216	102	0.0%	100.0%
217	81	0.0%	100.0%
218	80	0.0%	100.0%
219	55	0.0%	100.0%
220	67	0.0%	100.0%
221	50	0.0%	100.0%
222	49	0.0%	100.0%
223	52	0.0%	100.0%
224	46	0.0%	100.0%
225	41	0.0%	100.0%
226	35	0.0%	100.0%
227	44	0.0%	100.0%
228	41	0.0%	100.0%
229	34	0.0%	100.0%
230	40	0.0%	100.0%
231	33	0.0%	100.0%
232	41	0.0%	100.0%
233	25	0.0%	100.0%
234	39	0.0%	100.0%
235	32	0.0%	100.0%
236	35	0.0%	100.0%
237	38	0.0%	100.0%
238	17	0.0%	100.0%

Distance	Count	Percentage	Cummulative Percentage
239	28	0.0%	100.0%
240	23	0.0%	100.0%
241	28	0.0%	100.0%
242	31	0.0%	100.0%
243	28	0.0%	100.0%
244	25	0.0%	100.0%
245	24	0.0%	100.0%
246	25	0.0%	100.0%
247	20	0.0%	100.0%
248	24	0.0%	100.0%
249	19	0.0%	100.0%
250	22	0.0%	100.0%
251	31	0.0%	100.0%
252	21	0.0%	100.0%
253	20	0.0%	100.0%
254	26	0.0%	100.0%
255	20	0.0%	100.0%
256	20	0.0%	100.0%
257	36	0.0%	100.0%
258	30	0.0%	100.0%
259	22	0.0%	100.0%
260	28	0.0%	100.0%
261	23	0.0%	100.0%
262	25	0.0%	100.0%
263	16	0.0%	100.0%
264	21	0.0%	100.0%
265	28	0.0%	100.0%
266	19	0.0%	100.0%
267	12	0.0%	100.0%
268	20	0.0%	100.0%
269	10	0.0%	100.0%
270	24	0.0%	100.0%
271	22	0.0%	100.0%
272	27	0.0%	100.0%
273	17	0.0%	100.0%
274	26	0.0%	100.0%
275	26	0.0%	100.0%

Distance	Count	Percentage	Cummulative Percentage
276	33	0.0%	100.0%
277	17	0.0%	100.0%
278	25	0.0%	100.0%
279	17	0.0%	100.0%
280	18	0.0%	100.0%
281	17	0.0%	100.0%
282	16	0.0%	100.0%
283	7	0.0%	100.0%
284	26	0.0%	100.0%
285	20	0.0%	100.0%
286	19	0.0%	100.0%
287	18	0.0%	100.0%
288	16	0.0%	100.0%
289	22	0.0%	100.0%
290	16	0.0%	100.0%
291	20	0.0%	100.0%
292	18	0.0%	100.0%
293	26	0.0%	100.0%
294	20	0.0%	100.0%
295	16	0.0%	100.0%
296	17	0.0%	100.0%
297	21	0.0%	100.0%
298	18	0.0%	100.0%
299	16	0.0%	100.0%
300	14	0.0%	100.0%
301	14	0.0%	100.0%
302	25	0.0%	100.0%
303	19	0.0%	100.0%
304	8	0.0%	100.0%
305	16	0.0%	100.0%
306	24	0.0%	100.0%
307	9	0.0%	100.0%
308	15	0.0%	100.0%
309	17	0.0%	100.0%
310	19	0.0%	100.0%
311	16	0.0%	100.0%
312	20	0.0%	100.0%

Distance	Count	Percentage	Cummulative Percentage
313	15	0.0%	100.0%
314	20	0.0%	100.0%
315	14	0.0%	100.0%
316	8	0.0%	100.0%
317	9	0.0%	100.0%
318	9	0.0%	100.0%
319	15	0.0%	100.0%
320	9	0.0%	100.0%
321	4	0.0%	100.0%
322	23	0.0%	100.0%
323	19	0.0%	100.0%
324	14	0.0%	100.0%
325	18	0.0%	100.0%
326	24	0.0%	100.0%
327	12	0.0%	100.0%
328	7	0.0%	100.0%
329	11	0.0%	100.0%
330	17	0.0%	100.0%
331	9	0.0%	100.0%
332	13	0.0%	100.0%
333	10	0.0%	100.0%
334	15	0.0%	100.0%
335	12	0.0%	100.0%
336	7	0.0%	100.0%
337	15	0.0%	100.0%
338	10	0.0%	100.0%
339	8	0.0%	100.0%
340	7	0.0%	100.0%
341	6	0.0%	100.0%
342	7	0.0%	100.0%
343	10	0.0%	100.0%
344	10	0.0%	100.0%
345	9	0.0%	100.0%
346	9	0.0%	100.0%
347	6	0.0%	100.0%
348	7	0.0%	100.0%
349	6	0.0%	100.0%

Distance	Count	Percentage	Cummulative Percentage
350	5	0.0%	100.0%
351	7	0.0%	100.0%
352	9	0.0%	100.0%
353	3	0.0%	100.0%
354	12	0.0%	100.0%
355	7	0.0%	100.0%
356	6	0.0%	100.0%
357	2	0.0%	100.0%
358	12	0.0%	100.0%
359	10	0.0%	100.0%
360	6	0.0%	100.0%
361	9	0.0%	100.0%
362	6	0.0%	100.0%
363	8	0.0%	100.0%
364	1	0.0%	100.0%
365	2	0.0%	100.0%
366	11	0.0%	100.0%
367	9	0.0%	100.0%
368	5	0.0%	100.0%
369	5	0.0%	100.0%
370	6	0.0%	100.0%
371	5	0.0%	100.0%
372	6	0.0%	100.0%
373	6	0.0%	100.0%
374	6	0.0%	100.0%
375	9	0.0%	100.0%
376	2	0.0%	100.0%
377	7	0.0%	100.0%
378	4	0.0%	100.0%
379	3	0.0%	100.0%
380	3	0.0%	100.0%
381	3	0.0%	100.0%
382	5	0.0%	100.0%
383	2	0.0%	100.0%
384	9	0.0%	100.0%
385	7	0.0%	100.0%
386	3	0.0%	100.0%

Distance	Count	Percentage	Cummulative Percentage
387	4	0.0%	100.0%
388	5	0.0%	100.0%
389	3	0.0%	100.0%
390	2	0.0%	100.0%
391	5	0.0%	100.0%
392	6	0.0%	100.0%
393	8	0.0%	100.0%
394	4	0.0%	100.0%
395	2	0.0%	100.0%
396	5	0.0%	100.0%
397	2	0.0%	100.0%
398	7	0.0%	100.0%
399	7	0.0%	100.0%
400	7	0.0%	100.0%
401	3	0.0%	100.0%
402	3	0.0%	100.0%
403	3	0.0%	100.0%
404	2	0.0%	100.0%
405	3	0.0%	100.0%
406	2	0.0%	100.0%
408	3	0.0%	100.0%
409	3	0.0%	100.0%
410	6	0.0%	100.0%
411	6	0.0%	100.0%
412	4	0.0%	100.0%
413	4	0.0%	100.0%
414	4	0.0%	100.0%
415	6	0.0%	100.0%
416	7	0.0%	100.0%
417	2	0.0%	100.0%
418	2	0.0%	100.0%
419	1	0.0%	100.0%
420	1	0.0%	100.0%
421	3	0.0%	100.0%
422	2	0.0%	100.0%
423	4	0.0%	100.0%
424	1	0.0%	100.0%

Distance	Count	Percentage	Cummulative Percentage
425	4	0.0%	100.0%
426	3	0.0%	100.0%
427	1	0.0%	100.0%
428	2	0.0%	100.0%
429	3	0.0%	100.0%
430	6	0.0%	100.0%
431	2	0.0%	100.0%
432	2	0.0%	100.0%
433	3	0.0%	100.0%
434	6	0.0%	100.0%
435	2	0.0%	100.0%
436	1	0.0%	100.0%
437	5	0.0%	100.0%
438	3	0.0%	100.0%
439	1	0.0%	100.0%
440	2	0.0%	100.0%
441	3	0.0%	100.0%
443	3	0.0%	100.0%
444	4	0.0%	100.0%
445	3	0.0%	100.0%
446	4	0.0%	100.0%
447	2	0.0%	100.0%
448	2	0.0%	100.0%
449	1	0.0%	100.0%
450	2	0.0%	100.0%
451	2	0.0%	100.0%
452	2	0.0%	100.0%
453	6	0.0%	100.0%
454	1	0.0%	100.0%
455	1	0.0%	100.0%
456	1	0.0%	100.0%
459	2	0.0%	100.0%
460	1	0.0%	100.0%
462	1	0.0%	100.0%
463	2	0.0%	100.0%
467	4	0.0%	100.0%
468	1	0.0%	100.0%

Distance	Count	Percentage	Cummulative Percentage
469	1	0.0%	100.0%
471	4	0.0%	100.0%
472	3	0.0%	100.0%
473	2	0.0%	100.0%
474	1	0.0%	100.0%
475	1	0.0%	100.0%
476	1	0.0%	100.0%
477	3	0.0%	100.0%
479	2	0.0%	100.0%
480	1	0.0%	100.0%
483	4	0.0%	100.0%
485	2	0.0%	100.0%
486	3	0.0%	100.0%
490	2	0.0%	100.0%
491	1	0.0%	100.0%
492	2	0.0%	100.0%
493	1	0.0%	100.0%
495	2	0.0%	100.0%
496	1	0.0%	100.0%
498	4	0.0%	100.0%
500	2	0.0%	100.0%