

Species	N source	Antibiotic	FED		STARVED	
			AV	SD	AV	SD
<i>D. acuminata</i>	Nitrate	+A	0.05	0.01	0.03	0.00
		N.A.	0.05	0.01	0.02	0.02
	Ammonium	+A	0.84	0.22	0.32	0.08
		N.A.	0.99	0.32	0.56	0.06
	Urea	+A	1.28	0.09	0.52	0.10
		N.A.	1.04	0.03	0.62	0.08
<i>D. acuta</i>	Nitrate	+A	0.08	0.01	0.06	0.00
		N.A.	0.10	0.02	0.07	0.01
	Ammonium	+A	2.00	0.51	1.69	0.65
		N.A.	2.33	0.56	1.78	0.21
	Urea	+A	2.34	0.47	1.49	0.53
		N.A.	1.95	0.25	1.45	0.39

Table S1. Uptake rates (pmol N cell⁻¹ h⁻¹) of N sources (urea, ammonium and nitrate) by *D. acuminata* and *D. acuta* cells in well-fed and starved conditions. +A: with antibiotic, N.A.: no antibiotic, AV: average, SD: standard deviation.

Species	Nitrate reductase	Nitrite reductase	Nitrate transporter	Ammonium transporter	Urease	Transcripts in ref
<i>A_andersonii</i>	80	15	15	10	27	101059
<i>A_carterae</i>	68	25	20	13	30	72029
<i>A_catenella</i>	92	11	22	19	37	113342
<i>A_margalefii</i>	116	26	23	27	56	135117
<i>A_massartii</i>	61	24	22	32	30	74135
<i>A_minutum</i>	52	8	32	10	36	142770
<i>A_monilatum</i>	145	33	24	29	78	161890
<i>A_spinosum</i>	131	28	31	26	81	208533
<i>A_tamarense</i>	185	33	35	42	69	216202
<i>C_cohnii*</i>	106	11	28	16	25	129408
<i>D_acuminata</i>	77	13	8	15	42	119662
<i>D_baltica</i>	179	45	52	63	57	171517
<i>G_australes</i>	79	19	26	35	46	96540
<i>G_catenatum</i>	95	33	31	10	50	114447
<i>G_spinifera</i>	73	15	18	17	42	77306
<i>H_arctica</i>	63	19	21	14	29	74907
<i>H_rotundata</i>	64	16	16	25	26	72882
<i>H_triquetra</i>	95	24	18	31	25	95540
<i>K_brevis</i>	299	35	106	52	142	372125
<i>K_foliaceum</i>	316	74	87	150	105	310847
<i>K_veneficum</i>	166	25	50	60	80	184831
<i>L_polyedrum</i>	150	31	48	41	99	179048
<i>N_scintillans*</i>	68	9	9	11	19	61180
<i>O_marina*</i>	204	35	44	32	89	243555
<i>P_aciculiferum</i>	123	17	23	10	52	131791
<i>P_bahamense</i>	107	29	18	28	58	141678
<i>P_bei</i>	92	24	34	24	49	103458
<i>P_glacialis</i>	90	19	19	28	31	109183
<i>P_minimum</i>	154	34	36	39	68	222953
<i>P_reticulatum</i>	73	16	30	33	38	106046
<i>S_hangoei</i>	245	24	50	29	73	236636
<i>S_trochoidea</i>	217	23	49	71	72	211069
<i>T_jolla</i>	65	12	30	17	29	70846

Table S2. Number of nitrate reductase, nitrite reductase, nitrate transporter, ammonium transporter, and urease homologs, as well as the total number of transcripts in the reference transcriptomes of 33 dinoflagellates. Asterisks (*) indicate heterotrophic species.