

Nutritional state determines reproductive investment in the mixotrophic sea slug *Elysia viridis*

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Supplement 1: Videos SV1 to SV3

Supplement 2

Table S1. Fatty acid profile of *Elysia viridis* egg masses, expressed as µg per whole egg mass. Animals were fed continuously with *Codium tomentosum* (Continuously fed), fed 1 day per week with *C. tomentosum* (Intermittently fed), or deprived of food source for the 35-days experimental period (Starved). Mean and SD (standard deviation), n = 5. SFA – saturated fatty acids; MUFA – monounsaturated fatty acids; PUFA – polyunsaturated fatty acids; and Total – total fatty acids.

FA	Continuously fed		Intermittently fed		Starved	
	Mean	SD	Mean	SD	Mean	SD
14:0	0.16	0.03	0.16	0.02	0.13	0.03
16:0	3.94	0.91	2.97	0.65	2.20	0.82
18:0	2.36	0.59	1.95	0.02	1.61	0.52
20:0	0.12	0.01	0.08	0.01	0.07	0.01
22:0	0.07	0.01	0.04	0.03	0.03	0.03
Σ SFA	6.65	1.43	5.21	0.83	4.04	1.33
Σ 16:1	0.24	0.04	0.14	0.02	0.07	0.01
18:1 n-11	0.23	0.03	0.14	0.03	0.10	0.01
18:1 n-9	1.39	0.16	0.54	0.12	0.31	0.05
18:1 n-6	0.13	0.01	0.09	0.01	0.06	0.02
20:1 n-13	0.47	0.19	0.24	0.05	0.17	0.05
20:1 n-9	0.53	0.14	0.20	0.06	0.12	0.02
22:1	0.11	0.04	0.08	0.01	0.08	0.03
Σ MUFA	3.04	0.48	1.44	0.28	0.91	0.14
16:3 n-3	0.12	0.03	0.04	0.01	0.04	0.01
18:2 n-6	0.75	0.10	0.25	0.05	0.09	0.01
18:3 n-6	0.11	0.02	0.03	0.01	0.00	0.00
18:3 n-3	2.38	0.40	1.02	0.39	0.52	0.14
^{Δ5,11} 20:2	0.68	0.15	0.31	0.08	0.17	0.03
20:2 n-9	0.40	0.07	0.12	0.03	0.07	0.02
^{Δ5,11,14} 20:3	0.10	0.02	0.04	0.01	0.03	0.02
20:3 n-6	0.26	0.08	0.09	0.02	0.05	0.01
20:3 n-3	1.12	0.27	0.42	0.15	0.20	0.04
22:2 n-9	0.35	0.11	0.17	0.03	0.11	0.03
^{Δ7,13,16} 22:3	0.09	0.02	0.03	0.02	0.02	0.02
22:3 n-6	0.08	0.02	0.04	0.01	0.02	0.01
18:4 n-3	0.08	0.01	0.03	0.01	0.00	0.00
20:4 n-6	2.22	0.40	0.75	0.16	0.58	0.17
^{Δ5,11,14,17} 20:4	0.12	0.03	0.07	0.02	0.04	0.01
20:4 n-3	0.22	0.08	0.10	0.03	0.05	0.01
20:5 n-3	1.95	0.43	0.88	0.26	0.48	0.09
22:4 n-6	1.77	0.27	0.72	0.17	0.52	0.17

22:4 <i>n</i> -3	0.19	0.06	0.08	0.02	0.04	0.01
22:5 <i>n</i> -3	0.57	0.12	0.32	0.08	0.18	0.04
Σ PUFA	13.57	2.29	5.49	1.45	3.20	0.65
TOTAL	23.27	4.03	12.14	2.30	8.15	1.64

Table S2. Fatty acid profile of *Elysia viridis* eggs, expressed as µg per egg. Animals were fed continuously with *Codium tomentosum* (Continuously fed), fed 1 day per week with *C. tomentosum* (Intermittently fed) or deprived of food source for the 35-days experimental period (Starved). Mean and SD (standard deviation), n = 5. SFA – saturated fatty acids; MUFA – monounsaturated fatty acids; PUFA – polyunsaturated fatty acids; and Total – total fatty acids.

FA	Continuously fed		Intermittently fed		Starved	
	Mean	SD	Mean	SD	Mean	SD
14:0	4.5E-05	1.2E-05	7.6E-05	1.6E-05	9.3E-05	1.6E-05
16:0	1.0E-03	3.6E-04	1.4E-03	2.6E-04	1.5E-03	4.2E-04
18:0	6.0E-04	1.9E-04	9.4E-04	2.0E-04	1.1E-03	2.7E-04
20:0	3.2E-05	6.3E-06	4.2E-05	8.2E-06	5.2E-05	1.1E-05
22:0	2.0E-05	4.4E-06	2.0E-05	1.5E-05	2.0E-05	2.4E-05
Σ SFA	1.7E-03	5.6E-04	2.5E-03	4.6E-04	2.8E-03	6.6E-04
Σ 16:1	6.5E-05	1.9E-05	6.7E-05	1.1E-05	5.0E-05	9.9E-06
18:1 <i>n</i> -11	6.1E-05	1.5E-05	6.7E-05	4.9E-06	7.0E-05	1.5E-05
18:1 <i>n</i> -9	3.4E-04	7.2E-05	2.5E-04	6.3E-05	2.3E-04	6.2E-05
18:1 <i>n</i> -6	3.5E-05	7.5E-06	4.6E-05	7.8E-06	4.5E-05	1.8E-05
20:1 <i>n</i> -13	9.7E-05	3.7E-05	1.1E-04	1.5E-05	1.2E-04	4.4E-05
20:1 <i>n</i> -9	1.3E-04	2.8E-05	9.2E-05	1.6E-05	8.4E-05	2.2E-05
22:1	2.7E-05	1.1E-05	3.8E-05	6.7E-06	6.6E-05	3.0E-05
Σ MUFA	7.6E-04	1.7E-04	6.8E-04	1.1E-04	6.6E-04	1.8E-04
16:3 <i>n</i> -3	3.3E-05	1.3E-05	1.9E-05	5.0E-06	2.6E-05	1.2E-05
18:2 <i>n</i> -6	1.9E-04	4.4E-05	1.2E-04	1.6E-05	6.3E-05	2.0E-05
18:3 <i>n</i> -6	2.8E-05	7.8E-06	1.3E-05	3.4E-06	0.0E+00	0.0E+00
18:3 <i>n</i> -3	6.0E-04	1.7E-04	4.5E-04	8.5E-05	3.9E-04	1.4E-04
^{Δ5,11} 20:2	1.6E-04	4.2E-05	1.4E-04	2.2E-05	1.2E-04	4.2E-05
20:2 <i>n</i> -9	9.5E-05	2.0E-05	5.6E-05	9.1E-06	5.2E-05	1.8E-05
^{Δ5,11,14} 20:3	2.6E-05	9.2E-06	2.0E-05	6.9E-06	2.0E-05	1.8E-05
20:3 <i>n</i> -6	6.8E-05	2.7E-05	3.9E-05	7.0E-06	3.4E-05	7.6E-06
20:3 <i>n</i> -3	2.7E-04	7.4E-05	1.9E-04	4.0E-05	1.4E-04	4.5E-05
22:2 <i>n</i> -9	8.0E-05	2.2E-05	7.9E-05	1.1E-05	8.4E-05	3.5E-05
Δ7,13,16 22:3	2.3E-05	8.0E-06	1.6E-05	1.0E-05	1.7E-05	1.6E-05
22:3 <i>n</i> -6	2.1E-05	8.0E-06	1.5E-05	1.0E-05	1.0E-05	1.3E-05
18:4 <i>n</i> -3	2.2E-05	6.0E-06	1.3E-05	4.1E-06	0.0E+00	0.0E+00
20:4 <i>n</i> -6	5.3E-04	1.2E-04	3.5E-04	5.4E-05	4.1E-04	1.3E-04
^{Δ5,11,14,17} 20:4	2.9E-05	1.1E-05	3.1E-05	3.5E-06	3.0E-05	1.4E-05
20:4 <i>n</i> -3	5.8E-05	2.5E-05	4.4E-05	8.4E-06	3.7E-05	7.8E-06
20:5 <i>n</i> -3	4.6E-04	8.0E-05	4.0E-04	4.9E-05	3.4E-04	6.1E-05
22:4 <i>n</i> -6	4.3E-04	1.4E-04	3.4E-04	7.5E-05	3.8E-04	1.7E-04
22:4 <i>n</i> -3	4.6E-05	1.7E-05	3.6E-05	7.0E-06	3.3E-05	1.5E-05
22:5 <i>n</i> -3	1.4E-04	3.8E-05	1.5E-04	2.6E-05	1.3E-04	5.1E-05
Σ PUFA	3.3E-03	8.1E-04	2.5E-03	3.7E-04	2.3E-03	7.6E-04
TOTAL	5.8E-03	1.5E-03	5.7E-03	6.3E-04	5.8E-03	1.2E-03