Supplementary material

Table S1: Dataset of the selected studies for the more detailed analysis after the screening of the titles and abstracts of each study and removing all papers in which the subject was not about predation on ascidians or about ascidians' defense. We put the reasons for the rejection of an article in front of it.

N	Authors	Year	Title	Status	Reason for rejection	Doi / website
1	L. Núñez-Pons et al	2010	Chemical defenses of tunicates of the genus *Aplidium* from the Weddell Sea (Antarctica)	Approved		https://doi.org/10.1007/s00300-010-0819-7
2	Joullie M.M et al	2003	Chemical Defense in Ascidians of the Didemnidae Family	Rejected	The study uses a freshwater fish to test the predation on ascidians.	https://doi.org/10.1021/bc025576n
3	Stoecker D	1980	Relationship between chemical defense and ecology in benthic ascidians	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians	https://www.int-res.com/articles/meps/3/m003p257.pdf
4	Tarjuelo I et al	2002	Defence mechanisms of adults and larvae of colonial ascidians: patterns of palatability and toxicity	Rejected	The number of replicates varies from 20 to 30.	https://www.jstor.org/stable/24866249
5	Odate S & Pawlik J	2007	The Role of Vanadium in the Chemical Defense of the Solitary Tunicate, *Phallusia nigra*	Approved		https://doi.org/10.1007/s10886-007-9251-z
6	Stoecker D	1980	Chemical defenses of ascidians against predators	Approved		https://doi.org/10.2307/1939041
7	Mcclintok J. B. et al	2004	Biochemical composition, energy content and chemical antifeedant and antifoulant defenses of the colonial Antarctic ascidian *Distaplia cylindrica*	Approved		https://doi.org/10.1007/s00227-004-1388-5
8	Pisut D.P., Pawlik J.R	2002	Anti-predatory chemical defenses of ascidians: secondary metabolites or inorganic acids?	Approved		https://doi.org/10.1016/S0022-0981(02)00023-0
9	Vervoort H.C et al	1998	Chemical defense of the Caribbean ascidian *Didemnum conchyliatum*	Approved		https://www.jstor.org/stable/24825539
10	López-Legentil S., Turon X., Schupp P	2006	Chemical and physical defenses against predators in *Cystodytes* (Ascidiacea)	Approved		https://doi.org/10.1016/j.jembe.2005.11.002
11	Mayzel B. et al	2014	Chemical Defense Against Fouling in the Solitary Ascidian *Phallusia nigra*	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians	https://doi.org/10.1086/BBLv227n3p232
12	Paul V et al	1990	Chemical defenses of the tropical ascidian *Atapozoa* sp. and its nudibranch predators *Nembrotha* spp.	Approved		https://www.jstor.org/stable/24842427
13	Lindquist N.; Hay M.	1996	Palatability and Chemical Defense of Marine Invertebrate Larvae	Approved		https://doi.org/10.2307/2963489
14	Lindquist N.; Hay M. Fenical W.	1992	Defense of Ascidians and Their Conspicuous Larvae: Adult vs. Larval Chemical Defenses	Approved		https://doi.org/10.2307/2937316
15	Koplovitz, G., & McClintock, J. B.	2011	An evaluation of chemical and physical defenses against fish predation in a suite of seagrass-associated ascidians	Approved		https://doi.org/10.1016/j.jembe.2011.06.038
16	Hiebert LS et al	2019	Colonial ascidians strongly preyed upon, yet dominate the substrate in a subtropical fouling community	Approved		https://doi.org/10.1098/rspb.2019.0396
17	Gretchen Lambert	2019	Fouling ascidians (Chordata: Ascidiacea) of the Galápagos: Santa Cruz and Baltra Islands	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians	https://doi.org/10.3391/ai.2019.14.1.05
18	Lippert H. et al	2004	Chemical defence against predators in a sub-Arctic fjord	Rejected	The number of replicates varies	https://doi.org/10.1016/j.jembe.2004.03.023
19	Koplovitz Gil et al	2009	Palatability and chemical anti-predatory defenses in common ascidians from the Antarctic Peninsula	Approved		doi: 10.3354/ab00188

20	Moles, Juan et al	2015	Anti-predatory chemical defences in Antarctic benthic fauna	Approved		https://doi.org/10.1007/s00227-015-2714-9
21	Núñez-Pons et al	2012	Feeding deterrency in Antarctic marine organisms: Bioassays with the omnivore amphipod *Cheirimedon femoratus*	Approved		https://doi.org/10.3354/meps09840
22	Nuñez-Pons, Laura; Avila, Conxita	2014	Defensive metabolites from antarctic invertebrates: Does energetic content interfere with feeding repellence?	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians. It has a choice test.	https://doi.org/10.3390%2Fmd12063770
23	Mcclintok J. B. et al	1991	Biochemical and energetic composition, population biology, and chemical defense of the antarctic ascidian *Cnemidocarpa verrucosa* lesson	Approved		https://doi.org/10.1016/0022-0981(91)90180-5
24	Teo, S. L. M; Ryland, J. S.	1994	Toxicity and palatability of some British ascidians	Approved		https://doi.org/10.1007/BF00349691
25	Taboada, Sergi et al	2013	Feeding repellence of Antarctic and sub-Antarctic benthic invertebrates against the omnivorous sea star *Odontaster validus*	Approved		https://doi.org/10.1007/s00300-012-1234-z
26	Nuñez-Pons, Laura et al	2012	Natural Products from Antarctic Colonial Ascidians of the Genera *Aplidium* and *Synoicum*: Variability and Defensive Role	Rejected	The study uses the same data as the study (Núñez-Pons et al, 2012)	https://doi.org/10.3390/md10081741
27	Simoncini, Melissa; Miller, Robert J.	2007	Feeding preference of *Strongylocentrotus droebachiensis* (Echinoidea) for a dominant native ascidian, *Aplidium glabrum*, relative to the invasive ascidian *Botrylloides violaceus*	Approved		https://doi.org/10.1016/j.jembe.2006.10.019
28	Mercier, A et al	2013	Contrasting predation rates on planktotrophic and lecithotrophic propagules by marine benthic invertebrates	Rejected	In this study, the ascidian is the predator.	https://doi.org/10.1016/j.jembe.2013.09.007
29	Koplovitz Gil et al	2011	A comprehensive evaluation of the potential chemical defenses of antarctic ascidians against sympatric fouling microorganisms	Rejected	The study tests the epibionts on ascidians.	https://doi.org/10.1007/s00227-011-1764-x
30	Kremer, Laura; Rosana Moreira	2016	The biotic resistance role of fish predation in fouling communities	Rejected	The study tests the abundance of ascidians	https://doi.org/10.1007/s10530-016-1210-6
31	Euichi Hirose	2009	Ascidian tunic cells: morphology and functional diversity of free cells outside the epidermis	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1111/j.1744-7410.2008.00153.x
32	Nathan Pelletier	2004	Conspecific injury fluids induce an electrophysiological response in the clonal tunicate *Clavelina huntsmani*	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1007/s00227-004-1401-z
33	Giachetti, Clara B et al	2020	Invasive ascidians: How predators reduce their dominance in artificial structures in cold temperate areas	Approved		https://doi.org/10.1016/j.jembe.2020.151459
34	Megumu Fujibayashi et al	2019	Effect of sedimentary organic matter on species richness of deposit feeders in enclosed bay ecosystems: Insight from fatty acid nutritional indicators	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1016/j.marenvres.2019.05.011
35	Sakai D. et al	2018	Physical properties of the tunic in the pinkish-brown salp *Pegea confoederata* (Tunicata: Thaliacea)	Rejected	The study is about salps	https://doi.org/10.1186/s40851-018-0091-1
36	de Caralt. S et al	2002	Contrasting biological traits of *Clavelina lepadiformis* (Ascidiacea) populations from inside and outside harbours in the western Mediterranean	Approved		doi:10.3354/meps244125
37	Yun A et al	2019	Growth performance and the soft body composition of juvenile	Rejected	The study does not test the ascidians' defenses or	https://doi.org/10.1111/anu.13047

			abalone, *Haliotis discus*, Reeve 1846, fed the extruded pellets substituting fish meal and macroalgae with tunic meal of sea squirt, *Halocynthia roretzi*		palatability, or predation on ascidians.	
38	Choi et al	2018	Dietary Substitution Effect of Fishmeal with Tunic Meal of Sea Squirt, *Halocynthia roretzi*, Drasche, on Growth and Soft Body Composition of Juvenile Abalone, *Haliotis discus*, Reeve 1846	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1111/jwas.12537
39	Nawata et al.	2018	Tunic extract of the host ascidian attracts the causal agent of soft tunic syndrome, *Azumiobodo hoyamushi* (Kinetoplastea: Neobodonida)	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.3354/dao03253
40	García-García et al	2014	Histamine regulates the inflammatory response of the tunicate *Styela plicata*	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1016/j.dci.2014.05.017
41	A.R. Davis	1991	Alkaloids and ascidian chemical defense: evidence for the ecological role of natural products from *Eudistoma olivaceum*	Approved		https://doi.org/10.1007/BF01319409
42	Khalaman V. et al	2007	Effect of the Excretory-Secretory Products of Some Marine Invertebrates on Byssus Production of the Blue Mussel *Mytilus edulis* (Bivalvia: Mytilidae)	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1134/S1063074009030055
43	Bianco et al.	2013	Anti-Infective Potential of Marine Invertebrates and Seaweeds from the Brazilian Coast	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.3390/molecules18055761
44	Hopkins et al.	2011	Factors affecting survivorship of defouled communities and the effect of fragmentation on establishment success	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1016/j.jembe.2010.10.027
45	Turon, Xavier;Holan, Jessica R.; Davis, Andrew R.	2018	Defence behind the ramparts: Spicule armament against specialist predators in a subtidal habitat-forming ascidian	Approved		https://doi.org/10.1016/j.jembe.2018.07.008
46	Conlan, Kathleen E.; Rau, Greg H.; Kvitek, Rikk G.	2006	δ13C and δ15N shifts in benthic invertebrates exposed to sewage from McMurdo Station, Antarctica	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1016/j.marpolbul.2006.06.010
47	Lee, Sang Mee et al.	2015	Stalked sea squirt (*Styela clava*) tunic waste as a valuable bioresource: Cosmetic and antioxidant activities	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1016/j.procbio.2015.07.018
48	Epelbaum, A. et al.	2009	Susceptibility of non-indigenous ascidian species in British Columbia (Canada) to invertebrate predation	Approved		https://doi.org/10.1007/s00227-009-1172-7
49	Niels Lindquist and Mark E . Hay	1995	Can Small Rare Prey be Chemically Defended? The Case for Marine Larvae	Approved		https://doi.org/10.2307/1940941
50	Weldrick, Christine K. and Jelinski, Dennis E.	2017	Seasonal dynamics in a near-shore isotopic niche and spatial subsidies from multi-trophic aquaculture	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1139/cjfas-2016-0372
51	Pérez-Portela, Rocío and Turon, Xavier	2007	Prey preferences of the polyclad flatworm *Prostheceraeus roseus* among Mediterranean species of the ascidian genus *Pycnoclavella*	Rejected	The study does not have separate control and treatment groups. The comparison is between ascidians.	https://doi.org/10.1007/s10750-007-0807-2
52	Holman, Luke E.; Rius, Marc; Blackburn, Tim M.	2019	Observations of a novel predatory gull behavior on an invasive ascidian: A new consequence of coastal urban sprawl?	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1002/ecs2.2636

53	P, H Lippert; O, K Iken	2003	Palatability and nutritional quality of marine invertebrates in a sub-Arctic fjord	Approved		doi:10.1017/S0025315403008518
54	Olguin-Uribe, G. et al.	1997	6-bromoindole-3-carbaldehyde, from an *Acinetobacter* sp. Bacterium associated with the ascidian *Stomozoa murrayi*	Rejected	The study does not have an observed effect.	https://doi.org/10.1023/B:JOEC.0000006663.28348.03
55	Stefaniak, Lauren M.	2017	Mechanisms for invasion success by *Didemnum vexillum* (Chordata: Ascidiacea): observations versus manipulations	Rejected	The study does not have separate control and treatment groups. The treatment groups include predation and competition together.	https://doi.org/10.1007/s10530-016-1317-9
56	Rivero, Natalie K. et al.	2013	Environmental and ecological changes associated with a marina	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1080/08927014.2013.805751
57	Rolheiser, K. C. et al.	2012	Assessment of chemical treatments for controlling *Didemnum vexillum*, other biofouling, and predatory sea stars in Pacific oyster aquaculture	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1016/j.aquaculture.2012.07.038
58	Kincaid, Erin S. and de Rivera, Catherine E.	2020	Predators Associated with Marinas Consume Indigenous over Non-indigenous Ascidians	Rejected	The study uses proportions. It does not present exact values.	https://doi.org/10.1007/s12237-020-00793-2
59	Vervoort, Hélène C. et al.	1997	Didemnimides A-D: Novel, predator-deterrent alkaloids from the Caribbean mangrove ascidian *Didemnum conchyliatum*	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1021/jo961789s
60	Auker, Linda A.;Majkut, Alison L.;Harris, Larry G.	2014	Exploring Biotic Impacts from *Carcinus maenas* Predation and Didemnum vexillum Epibiosis on *Mytilus edulis* in the Gulf of Maine	Rejected	Ascidian is an epibiont	http://www.jstor.org/stable/26453606
61	Sargent, Philip S.; Hamel, J. F.; Mercier, A.	2019	The life history and feeding ecology of velvet shell, *Velutina velutina* (Gastropoda: Velutinidae), a specialist predator of ascidians	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians. It has a choice test.	https://doi.org/10.1139/cjz-2018-0327
62	Abourriche, A. et al.	1999	Investigation of bioactivity of extracts from Moroccan solitary tunicate *Cynthia savignyi*	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1016/S0378-8741(99)00033-1
63	Montenegro, Tasso G.C. et al.	2012	Cytotoxic activity of fungal strains isolated from the ascidian *Eudistoma vannamei*	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1002/cbdv.201100366
64	Letourneur, Yves; Galzin, René; Harmelin-Vivien, Mireille	1997	Temporal variations in the diet of the damselfish *Stegastes nigricans* (Lacepede) on a Reunion fringing reef	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1016/S0022-0981(96)02730-X
65	Johnson, Matthew W. et al.	2010	Age, Growth, Mortality, and Diet Composition of Vermilion Snapper from the North-Central Gulf of Mexico	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	http://dx.doi.org/10.1577/T09-179.1
66	Dijkstra, Jennifer; Harris, Larry G.; Westerman, Erica	2007	Distribution and long-term temporal patterns of four invasive colonial ascidians in the Gulf of Maine	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1016/j.jembe.2006.10.015
67	Young, C. M.	1986	Defenses and refuges: alternative mechanisms of coexistence between a predatory gastropod and its ascidian prey	Approved		https://doi.org/10.1007/BF00392603
68	Rogers, Tanya L.; Byrnes, Jarrett E.; Stachowicz, John J.	2016	Native predators limit invasion of benthic invertebrate communities in Bodega Harbor, California, USA	Rejected	The study does not have separate control and treatment groups.	https://doi.org/10.3354/meps11611
69	Lindquist, N.	1996	Palatability of invertebrate larvae to corals and sea anemones	Approved		https://doi.org/10.1007/BF00351341

70	Avila, Conxita	2016	Ecological and Pharmacological Activities of Antarctic Marine Natural Products	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1055/s-0042-105652
71	Núñez-Pons, Laura and Avila, Conxita	2014	Deterrent activities in the crude lipophilic fractions of Antarctic benthic organisms: Chemical defences against keystone predators	Approved		https://doi.org/10.3402/polar.v33.21624
72	N. Lindquist; W. Fenical	1991	New tambjamine class alkaloids from the marine ascidian *Atapozoa* sp. and its nudibranch predators. Origin of the tambjamines in *Atapozoa*	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1007/BF01959957
73	Mcclintok J. B. et al	1994	Homarine as a feeding deterrent in common shallow-water antarctic lamellarian gastropod *Marseniopsis mollis*: A rare example of chemical defense in a marine prosobranch	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians. It tests the palatability of nudibranchs.	https://doi.org/10.1007/bf02036190
74	G.J. Bakus	1981	Chemical defense mechanisms on the Great Barrier Reef, Australia	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1126/science.7455691
75	Lindquist N.; et al	1991	Polyclinal, a new sulfated polyhydroxy benzaldehyde from the marine ascidian *Polyclinum planum*	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1007/BF01959956
76	C. M. Young; B. L. Bingham	1987	Chemical defense and aposematic coloration in larvae of the ascidian *Ecteinascidia turbinata*	Approved		https://doi.org/10.1007/BF00397972
77	Richard R. Strathmann; Lindsay R. Kendall; Adam G. Marsh	2005	Embryonic and larval development of a cold adapted Antarctic ascidian	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1007/s00300-005-0080-7
78	Vieira et al.	2012	How the timing of predation affects composition and diversity of species in a marine sessile community?	Approved		https://doi.org/10.1016/j.jembe.2011.11.011
79	Dias et al.	2019	Calcareous defence structures of prey mediate the effects of predation and biotic resistance towards the tropics	Approved		https://doi.org/10.1111/ddi.13020
80	Tsukamoto et al.	1994	Phlorotannins and Sulfoquinovosyl Diacylglycerols: Promoters of Larval Metamorphosis in Ascidians, Isolated from the Brown Alga *Sargassum thunbergii*	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.2331/fishsci.60.319
81	K. J. Murphy et al.	2019	Abiotic conditions are not sufficient to predict spatial and interannual variation in abundance of *Ciona intestinalis* in Nova Scotia, Canada	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.3354/meps13076
82	Dror et al.	2019	Core and Dynamic Microbial Communities of Two Invasive Ascidians: Can Host–Symbiont Dynamics Plasticity Affect Invasion Capacity?	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1007/s00248-018-1276-z
83	Edmund S. Hobson; James R. Chess	2001	Influence of trophic relations on form and behavior among fishes and benthic invertebrates in some California marine communities	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1023/A:1011027312001
84	Tadesse et al.	2008	Screening for antibacterial and antifungal activities in marine benthic invertebrates from northern Norway	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1016/j.jip.2008.06.009
85	Vinuesa et al.	2021	The Bioactive Potential of Trawl Discard: Case Study from a Crinoid Bed Off Blanes (North-Western Mediterranean)	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.3390/md19020083
86	Reis et al.	2012	Diet of the queen angelfish *Holacanthus ciliaris*	Rejected	The study does not test the ascidians' defenses or	https://doi.org/10.1017/S0025315412001099

			(Pomacanthidae) in São Pedro e São Paulo Archipelago, Brazil		palatability, or predation on ascidians.	
87	Elia Tait; Mary Carman; Stefan M. Sievert	2007	Phylogenetic diversity of bacteria associated with ascidians in Eel Pond (Woods Hole, Massachusetts, USA)	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1016/j.jembe.2006.10.024
88	Riedel et al.	2014	Effect of hypoxia and anoxia on invertebrate behaviour: ecological perspectives from species to community level	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.5194/bg-11-1491-2014
89	P. A. Lezin; V. V. Khalaman	2007	Byssus production rate of the White Sea blue mussel *Mytilus edulis* (Linnaeus, 1758) in the presence of metabolites of some hydrobionts	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1134/S1063074007010075
90	K. J. Collins ; A. C. Jensen; A. P. M. Lockwood	1992	Stability of a Coal Waste Artificial Reef	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1080/02757549208035264
91	Konuklugil et al.	2018	Isolation and Bioactivities Screening of Turkish *Microcosmus vulgaris*	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	http://doi.org/10.4194/1303-2712-v19_8_03
92	T. E. Thompson	2009	Acidic allomones in marine organisms	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1017/S0025315400043368
93	Finlayson et al.	2011	Didemnidines A and B, Indole Spermidine Alkaloids from the New Zealand Ascidian *Didemnum* sp.	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1021/np1008619
94	Castellano et al.	2015	The diatom-derived aldehyde decadienal affects life cycle transition in the ascidian *Ciona intestinalis* through nitric oxide/ERK signalling	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1098/rsob.140182
95	Bell et al.	2003	Seasonal 'fall out' of sessile macro-fauna from submarine cliffs: quantification, causes and implications	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1017/S002531540300849X
96	Anna Metaxas; Victoria Burdett-Coutts	2006	Response of invertebrate larvae to the presence of the ctenophore *Bolinopsis infundibulum*, a potential predator	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1016/j.jembe.2006.01.025
97	Erika V. Iyengar; C. Drew Harvell	2001	Predator deterrence of early developmental stages of temperate lecithotrophic asteroids and holothuroids	Rejected	Ascidian is the predator	https://doi.org/10.1016/S0022-0981(01)00314-8
98	Andrew R. Davis	1988	Colony regeneration following damage and size-dependent mortality in the Australian ascidian *Podoclavella moluccensis* Sluiter	Approved		https://doi.org/10.1016/0022-0981(88)90047-0
99	Tarallo et al	2016	Comparative morpho-physiological analysis between *Ciona robusta* and *Ciona savignyi*	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1016/j.jembe.2016.09.001
100	Vafidis D; Antoniadou C; Chintiroglou C	2008	Population dynamics, allometric relationships and reproductive status of *Microcosmus sabatieri* (Tunicata: Ascidiacea) in the Aegean Sea	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1017/S0025315408001811
101	Rohmah et al.	2016	Effect of ascidian (*Halocynthia roretzi*, Drasche 1884) tunics carotenoids on enhancing growth and muscle coloring of sea-reared rainbow trout (*Oncorhynchus mykiss*, Walbaum 1792)	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1016/j.aqrep.2016.05.003
102	Arumugam et al.	2019	Tunicates as a biocontrol tool for larvicides acute toxicity of Zika virus vector *Aedes aegypti*	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1007/s13205-019-1699-3
103	Ayuningrum et al.	2019	Tunicate-associated bacteria show a great potential for the	Rejected	The study does not test the ascidians' defenses or	https://doi.org/10.1371/journal.pone.0213797

			discovery of antimicrobial compounds		palatability, or predation on ascidians.	
104	Holman, L. E.; M. Rius; T. M. Blackburn	2019	Observations of a novel predatory gull behavior on an invasive ascidian: A new consequence of coastal urban sprawl?	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1002/ecs2.2636
105	Euichi Hirose1; Hideyuki Yamashiro; Yasuaki Mori	2001	Properties of Tunic Acid in the Ascidian *Phallusia nigra* (Ascidiidae, Phlebobranchia)	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.2108/zsj.18.309
106	Kakiuchida et al.	2017	Measurement of refractive indices of tunicates' tunics: light reflection of the transparent integuments in an ascidian *Rhopalaea* sp. and a salp *Thetys vagina*	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1186/s40851-017-0067-6
107	Eva-Maria Rottmayr; Bert Steffan; Gerhard Wanner	2000	Pigmentation and tunic cells in *Cystodytes dellechiajei* (Urochordata, Ascidiacea)	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1007/s004350000032
108	Akira Kumagai; Takashi Kamaishi	2013	Development of Polymerase Chain Reaction Assays for Detection of the Kinetoplastid *Azumiobodo hoyamushi*, the Causative Agent for Soft Tunic Syndrome in the Ascidian *Halocynthia roretzi*	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.3147/jsfp.48.42
109	Hirose et al.	2015	Does the tunic nipple array serve to camouflage diurnal salps?	Rejected	The study is about salps	https://doi.org/10.1017/S0025315415000119
110	Euichi Hirose	1999	Pigmentation and Acid Storage in the Tunic: Protective Functions of the Tunic Cells in the Tropical Ascidian *Phallusia nigra*	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.2307/3227010
111	Daniel Martin; Arne Nygren; Edwin Cruz-Rivera	2017	*Proceraea exoryxae* sp. nov. (Annelida, Syllidae, Autolytinae), the first known polychaete miner tunneling into the tunic of an ascidian	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.7717/peerj.3374
112	Martínez-García et al.	2006	Microbial community associated with the colonial ascidian *Cystodytes dellechiajei*	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1111/j.1462-2920.2006.01170.x
113	Craig M. Young	1989	Selection of predator-free settlement sites by larval ascidians	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1080/00785326.1989.10430840
114	Martínez-García et al.	2008	Ammonia-oxidizing Crenarchaeota and nitrification inside the tissue of a colonial ascidian	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1111/j.1462-2920.2008.01761.x
115	Voultsiadou et al.	2010	Sponge epibionts on ecosystem-engineering ascidians: The case of *Microcosmus sabatieri*	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1016/j.ecss.2009.11.035
116	Novak et al.	2017	Rapid establishment of the non-indigenous ascidian *Styela plicata* and its associated bacteria in marinas and fishing harbors along the Mediterranean coast of Israel	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.12681/mms.2135
117	Palanisamy et al.	2018	Patterns of chemical diversity in the marine ascidian *Phallusia* spp.: anti-tumor activity and metabolic pathway inhibiting steroid biosynthesis	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1007/s13205-018-1273-4
118	Choon-Kyu Park et al.	1991	Extractive Nitrogenous Constituents of Two Species of Edible Ascidians *Styela clava* and *S. plicata*	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.2331/suisan.57.169
119	P. S. Sargent; J-F. Hamel; A. Mercier	2019	The life history and feeding ecology of velvet shell, *Velutina velutina* (Gastropoda:	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1139/cjz-2018-0327

			Velutinidae), a specialist predator of ascidians			
120	Anna Aiello; Ernesto Fattorusso; Maria luisa Menna	1996	Low molecular weight metabolites of three species of ascidians collected in the lagoon of Venice	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1016/0305-1978(96)00058-0
121	Hun Kim et al.	2012	*Hasllibacter halocynthiae* gen. nov., sp. nov., a nutriacholic acid-producing bacterium isolated from the marine ascidian *Halocynthia roretzi*	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1099/ijs.0.028738-0
122	Gretchen Lambert	2009	Adventures of a sea squirt sleuth: unraveling the identity of *Didemnum vexillum*, a global ascidian invader	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	doi: 10.3391/ai. 2009.4.1.2
123	Rodolfo C. de Barros; Rosana M. da Rocha; Marcio R. Pie	2009	Human-mediated global dispersion of *Styela plicata* (Tunicata, Ascidiacea)	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.3391/AI.2009.4.1.4
124	Azumi et al.	1990	Inhibitory effect of halocyamine, an antimicrobial substance from ascidian hemocytes, on the growth of fish viruses and marine bacteria	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1007/BF01940675
125	Garth Arsenault; Jeff Davidson; Aaron Ramsay	2009	Temporal and spatial development of an infestation of *Styela clava* on mussel farms in Malpeque Bay, Prince Edward Island, Canada	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	doi: 10.3391/ai.2009.4.1.19
126	Renée Y. Bernier; Andrea Locke; John Mark Hanson	2009	Lobsters and crabs as potential vectors for tunicate dispersal in the southern Gulf of St. Lawrence, Canada	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	doi: 10.3391/ai. 2009.4.1.11
127	Rémi M. Daigle; Christophe M. Herbinger	2009	Ecological interactions between the vase tunicate (*Ciona intestinalis*) and the farmed blue mussel (*Mytilus edulis*) in Nova Scotia, Canada	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	doi: 10.3391/ai.2009.4.1.18
128	Darbyson et al.	2009	Settlement and potential for transport of clubbed tunicate (*Styela clava*) on boat hulls	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	doi: 10.3391/ai. 2009.4.1.10
129	Epelbaum et al.	2009	Botryllid tunicates: Culture techniques and experimental procedures	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	doi: 10.3391/ai. 2009.4.1.12
130	Erin K. Grey	2009	Do we need to jump in? A comparison of two survey methods of exotic ascidians on docks	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	doi: 10.3391/ai. 2009.4.1.8
131	Andrés Izquierdo-Muñoz; Marta Díaz-Valdés; Alfonso A. Ramos-Esplá	2009	Recent non-indigenous ascidians in the Mediterranean Sea	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	doi: 10.3391/ai. 2009.4.1.5
132	Nicole L. Lengyel; Jeremy S. Collie; and Page C. Valentine	2009	The invasive colonial ascidian *Didemnum vexillum* on Georges Bank — Ecological effects and genetic identification	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	doi: 10.3391/ai.2009.4.1.15
133	Locke et al.	2009	Preliminary evaluation of effects of invasive tunicate management with acetic acid and calcium hydroxide on non-target marine organisms in Prince Edward Island, Canada	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.3391/AI.2009.4.1.23
134	Lutz-Collins et al.	2009	Invasive tunicates fouling mussel lines: evidence of their impact on native tunicates and other epifaunal invertebrates	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	doi: 10.3391/ai.2009.4.1.22

135	Jeffery M. Mercer; Robert B. Whitlatch; Richard W. Osman	2009	Potential effects of the invasive colonial ascidian (*Didemnum vexillum* Kott, 2002) on pebble-cobble bottom habitats in Long Island Sound, USA	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	doi: 10.3391/ai. 2009.4.1.14
136	Morris, Jr. et al.	2009	Impact of the invasive colonial tunicate *Didemnum vexillum* on the recruitment of the bay scallop (*Argopecten irradians irradians*) and implications for recruitment of the sea scallop (*Placopecten magellanicus)* on Georges Bank	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	doi: 10.3391/ai.2009.4.1.21
137	Ramsay et al.	2009	Recruitment patterns and population development of the invasive ascidian *Ciona intestinalis* in Prince Edward Island, Canada	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	doi: 10.3391/ai.2009.4.1.17
138	M. Rocha et al.	2009	Bivalve cultures provide habitat for exotic tunicates in southern Brazil	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	doi: 10.3391/ai.2009.4.1.20
139	Valentine et al.	2009	Larval recruitment of the invasive colonial ascidian *Didemnum vexillum*, seasonal water temperatures in New England coastal and offshore waters, and implications for spread of the species	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	doi: 10.3391/ai.2009.4.1.16
140	Robert B. Whitlatch; Richard W. Osman	2009	Post-settlement predation on ascidian recruits: predator responses to changing prey density	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	doi: 10.3391/ai. 2009.4.1.13
141	Locke et al.	2009	Rapid response to non-indigenous species. 2. Case studies of invasive tunicates in Prince Edward Island	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	doi: 10.3391/ai.2009.4.1.25
142	Stephan G. Bullard; Robert B. Whitlatch	2009	In situ growth of the colonial ascidian *Didemnum vexillum* under different environmental conditions	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	doi: 10.3391/ai.2009.4.1.27
143	Adriaan Gittenberger	2009	Invasive tunicates on Zeeland and Prince Edward Island mussels, and management practices in The Netherlands	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	doi: 10.3391/ai.2009.4.1.28
144	Martin H. Davis; Mary E. Davis	2009	*Styela clava* (Tunicata, Ascidiacea) – a new threat to the Mediterranean shellfish industry?	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.3391/AI.2009.4.1.29
145	Mary R. Carman; Hannah M. Allen; and Megan C. Tyrrell	2009	Limited value of the common periwinkle snail *Littorina littorea* as a biological control for the invasive tunicate *Didemnum vexillum*	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	doi: 10.3391/ai.2009.4.1.30
146	Richard C. Karney; Walter Y. Rhee	2009	Market potential for *Styela clava*, a non-indigenous pest invading New England coastal waters	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	doi: 10.3391/ai.2009.4.1.31
147	Cameron Findlay; Valerie J.Smith	1995	Antimicrobial factors in solitary ascidians	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1016/S1050-4648(95)80047-6
148	Aditep Nontratip; Hideaki Yamanaka	1994	Seasonal Variations of Activities of Glycogen-degrading Enzymes in Ascidian Muscle	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.2331/fishsci.60.77
149	Watanabe et al.	1983	Seasonal Variation of Extractive Nitrogen and Free Amino Acids in the Muscle of the Ascidian *Halocynthia roretzi*	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.2331/suisan.49.1755
150	Brian Morton	1990	Prey capture, preference and consumption by *Linatella caudata* (Gastropoda: Tonnoidea: Ranellidae) in Hong Kong	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians. It has a choice test	https://doi.org/10.1093/mollus/56.4.477

151	Freestone et al.	2011	Stronger predation in the tropics shapes species richness patterns in marine communities	Rejected	The study does not test, specifically, the ascidians.	https://doi.org/10.1890/09-2379.1
152	Freestone A.; Osman R	2011	Latitudinal variation in local interactions and regional enrichment shape patterns of marine community diversity	Rejected	The study does not test the ascidians' def defenses ences or palatability, or predation on ascidians.	https://doi.org/10.1890/09-1841.1
153	Amy l. Freestone; Gregory M. Ruiz; Mark E. Torchin	2013	Stronger biotic resistance in tropics relative to temperate zone: effects of predation on marine invasion dynamics	Rejected	This article was approved but was not included because the results were in a boxplot form. I asked the authors for their original data, but they did not answer me.	https://doi.org/10.1890/12-1382.1
154	Richard W. Osman; Robert B. Whitlatch; Richard J. Malatesta	1992	Potential role of micro-predators in determining recruitment into a marine community	Approved		https://www.int-res.com/articles/meps/83/m083p035.pdf
155	Richard W. Osman; Robert B. Whitlatch	1995	Predation on early ontogenetic life stages and its effect on recruitment into a marine epifaunal community	Approved		https://www.int-res.com/articles/meps/117/m117p111.pdf
156	T.V. Raveendran and Eiji Harada	1996	Intense predation on Ascidians by a trunk fish, *Ostracion immaculatus* (Temminck et Schlegel) (Pisces : Ostraciidae)	Approved		https://repository.kulib.kyoto-u.ac.jp/dspace/bitstream/2433/176252/1/fia0371-2_193.pdf
157	Yuki Koide and Yoichi Sakai	2021	Feeding habits of the white-spotted boxfish *Ostracion meleagris* reveal a strong preference for colonial ascidians	Rejected	The study does not test the ascidians' defenses or palatability, or predation on ascidians.	https://doi.org/10.1007/s10228-021-00800-x
158	Giachetti et al.	2022	The smaller, the most delicious: Differences on vulnerability to predation between juvenile and adult of invasive ascidians	Approved		https://doi.org/10.1016/j.ecss.2022.107810
159	Avila, Conxita et al.	2022	Would Antarctic Marine Benthos Survive Alien Species Invasions? What Chemical Ecology May Tell Us	Approved		https://doi.org/10.3390/md20090543
160	Tamburini et al.	2022	Effect of Predation on Fouling Communities in an Italian Hotspot of Non-Indigenous Species	Approved		https://doi.org/10.3390/jmse10101496
161	Gauff et al.	2022	Alien vs. predator: influence of environmental variability and predation on the survival of ascidian recruits of a native and alien species	Approved		https://doi.org/10.1007/s10530-021-02720-3
162	Vieira, Edson A.; Flores, Augusto A. V; Dias, Gustavo M.	2021	Colonization history meets further niche processes: how the identity of founders modulates the way predation structure fouling communities	Approved		https://doi.org/10.1007/s00442-021-04996-7
163	Giachetti et al.	2019	Macropredators as shapers of invaded fouling communities in a cold temperate port	Approved		https://doi.org/10.1016/j.jembe.2019.151177

Table S2 Mixed-effects meta-analytical models that were used in each dataset (Community and palatability studies).

Models	Moderators	Random effects
Overall effect	No moderators	Study ID + Ascidian species
Biological model	Predator's identity + Ascidian's sociability	Study ID + Ascidian species
Methodological model	Experiment type + Place	Study ID + Ascidian species

Figure S1: Flowchart representing the mixed-effects meta-analytical models that were used in each dataset (Community and palatability studies).

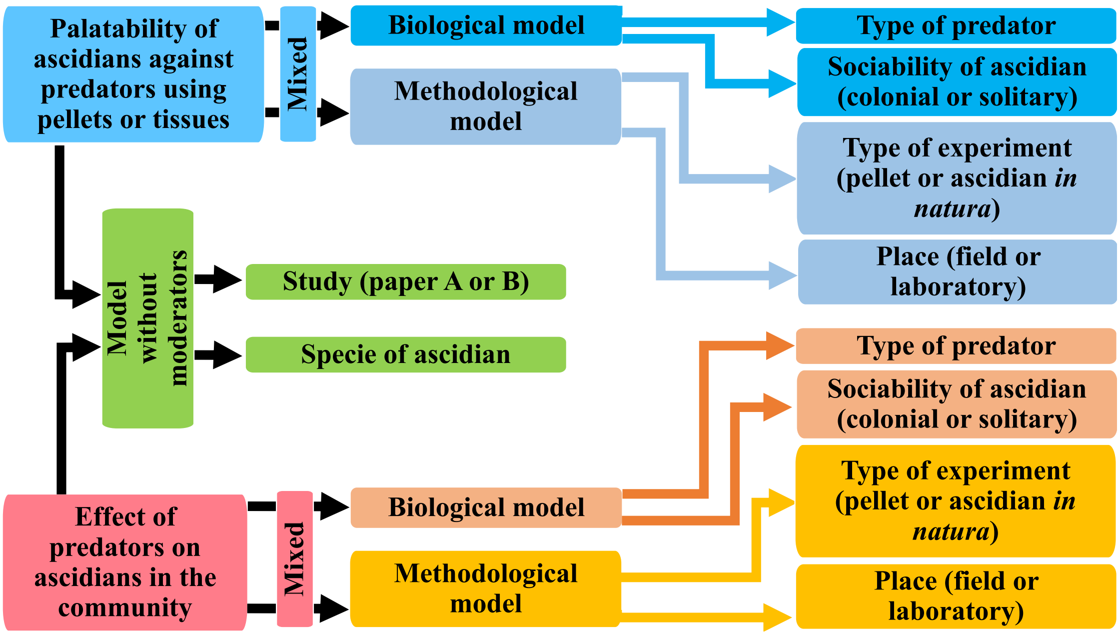

Table S3: Species of ascidians used as models in the palatability studies (A) and in the community studies (B). The asterisk means that the value of 'n' only considers those identified ascidians at the species level. Ascidians whose specific epithet was 'sp.' were not considered in the sum. Species in red are outliers that were not included in the main analysis but were tested in the analysis with outliers. Their removal did not change any results.

A: Ascidians found in the palatability studies	
Families (n = 13)	**Species (n = 54*)**
Polyclinidae	*Aplidium constellatum*
	Aplidium falklandicum
	Aplidium fuegiense
	Aplidium meridianum
	Aplidium millari
	Aplidium proliferum
	Aplidium sp.
	Aplidium stellatum
	Morchellium argus

	Polyclinum aurantium
	Synoicum adareanum
	Synoicum sp.
	Synoicum turgens
Ascidiidae	*Ascidia interrupta*
	Ascidia sp.
	Ascidiella aspersa
	Phallusia nigra
Styelidae	*Botrylloides leachii*
	Botrylloides niger
	Botrylloides sp.
	Botryllus schlosseri
	Cnemidocarpa sp.
	Cnemidocarpa verrucosa
	Dendrodoa grossularia
	Styela plicata
	Styela sp.
	Symplegma rubra
Cionidae	*Ciona intestinalis*
Clavelinidae	*Clavelina lepadiformis*
	Clavelina oblonga
	Clavelina picta
Corellidae	*Corella eumyota*
Didemnidae	*Didemnum biglans*
	Didemnum candidum
	Didemnum conchyliatum
	Didemnum vanderhorsti
	Diplosoma listerianum
	Trididemnum solidum
Holozoidae	*Distaplia bermudensis*
	Distaplia colligans
	Distaplia cylindrica
	Sigillina signifera
	Sigillina sp.
	Sycozoa gaimardi
Perophoridae	*Ecteinascidia turbinata*
Polycitoridae	*Cystodytes violatinctus*
	Eudistoma capsulatum

	Eudistoma carolinense
	Eudistoma hepaticum
	Eudistoma obscuratum
	Eudistoma olivaceum
	Eudistoma sp.
Pyuridae	*Bathypera* sp.
	Halocynthia igaboja
	Halocynthia pyriformis
	Herdmania grandis
	Microcosmus sp.
	Pyura georgiana
	Pyura setosa
	Pyura sp.
Molgulidae	*Molgula occidentalis*
	Molgula pedunculata
	Pareugyrioides arnbackae
Diazonidae	*Rhopalaea abdominalis*
	Tylobranchion speciosum

B: Ascidians found in the community studies

Families (n = 11)	**Species (n = 35*)**
Polyclinidae	*Aplidium accarense*
	Aplidium glabrum
	Aplidium sp.
	Polyclinum constellatum
Ascidiidae	*Ascidia curvata*
	Ascidia interrupta
	Ascidia sp.
	Ascidiella aspersa
	Ascidiella sp.
	Phallusia nigra
Styelidae	*Asterocarpa humilis*
	Botrylloides diegensis
	Botrylloides giganteus
	Botrylloides niger
	Botrylloides violaceus
	Botryllus schlosseri
	Botryllus tabori
	Polyandrocarpa zorritensis
	Styela clava
	Styela plicata
	Styela sp.
	Symplegma brakenhielmi
	Symplegma rubra
	Symplegma sp.

Cionidae	*Ciona robusta* *Ciona intestinalis* *Ciona* sp.
Corellidae	*Corella eumyota*
Clavelinidae	*Clavelina moluccensis* *Clavelina oblonga* *Clavelina* sp.
Didemnidae	*Didemnum cineraceum* *Didemnum galacteum* *Didemnum perlucidum* *Didemnum* sp. *Didemnum vexillum* *Diplosoma listerianum* *Diplosoma* sp. *Lissoclinum* sp. *Trididemnum orbiculatum*
Holozoidae	*Distaplia bermudensis* *Distaplia stylifera*
Molgulidae	*Molgula* sp.
Perophoridae	*Perophora* sp.
Pyuridae	*Herdmania grandis* *Herdmania pallida* *Microcosmus exasperatus*

Table S4: Table made with the inclusion of outliers. Statistical tests of the biological model of the palatability studies.

	Hedges' *g*	**SE**	**CI (lower bound)**	**CI (upper bound)**
Colonial ascidian; Predator: Amphipod	0.10	0.39	-0.67	0.88
Solitary ascidian; Predator: Amphipod	-0.81	0.41	-1.62	0.00
Colonial ascidian; Field predators	2.65	0.62	1.43	3.86
Solitary ascidian; Field predators	1.56	0.45	0.67	2.45
Colonial ascidian; Predator: Crab	0.97	1.06	-1.10	3.04
Solitary ascidian; Predator: Crab	0.81	1.14	-1.43	3.05
Colonial ascidian; Predator: Hermit crab	2.01	1.45	-0.83	4.85
Solitary ascidian; Predator: Hermit crab	0.15	1.39	-2.57	2.87
Colonial ascidian; Predator: Starfish	1.38	0.37	0.65	2.10
Solitary ascidian; Predator: Starfish	1.00	0.41	0.19	1.80
Colonial ascidian; Predator: Fish	2.22	0.35	1.52	2.91
Solitary ascidian; Predator: Fish	2.94	0.42	2.12	3.75

Table S5: Table made with the inclusion of outliers. Statistical tests of the biological model of the community studies.

	Hedges' *g*	SE	CI (lower bound)	CI (upper bound)
Colonial ascidian; Field predators	-0.34	0.18	-0.70	0.01
Solitary ascidian; Field predators	-0.50	0.18	-0.85	-0.16
Colonial ascidian; Predator: Crab	0.19	0.43	-0.65	1.03
Solitary ascidian; Predator: Crab	-1.50	0.48	-2.44	-0.56
Colonial ascidian; Predator: Starfish	0.60	0.46	-0.31	1.50
Solitary ascidian; Predator: Starfish	-1.30	0.43	-2.13	-0.46
Colonial ascidian; Predator: Nudibranch	-1.35	0.70	-2.72	0.01
Solitary ascidian; Predator: Nudibranch	-0.86	0.47	-1.79	0.07
Colonial ascidian; Predator: Sea urchin	-1.54	0.42	-2.36	-0.71
Solitary ascidian; Predator: Sea urchin	-1.51	0.47	-2.43	-0.59

Table S6: Table made with the inclusion of outliers. Publication bias analysis from Egger's regression test. A: Data from the palatability studies. B: Data from the community studies. Significative interactions have the p-value in bold.

A: Publication bias in the palatability studies			
	Intercept	**95% Confidence interval**	**p-value**
Model without moderators	-2.24	-2.49 to -1.98	**p < 0.01**
Biological model	-1.93	-2.20 to -1.66	**p < 0.01**
Methodological model	-1.94	-2.21 to -1.68	**p < 0.01**

B: Publication bias in the community studies			
	Intercept	**95% Confidence interval**	**p-value**
Model without moderators	0.96	-0.10 to 2.03	**p < 0.01**
Biological model	0.89	-0.18 to 1.96	**p < 0.01**
Methodological model	0.91	-0.16 to 1.98	**p < 0.01**

Table S7: Table made with the inclusion of outliers. Heterogeneity analysis models using the I^2 test. A: Data from the palatability studies. B: Data from the community studies. High heterogeneity data (values higher than 70) are in bold.

A: Heterogeneity from the dataset formed by the palatability studies		
	I^2 value	**95% Confidence interval**
Model without moderators		
I^2 - Total	**77.73**	75.81 to 79.65
I^2 - Study	47.92	46.00 to 49.84
I^2 - Species	29.81	27.89 to 31.73
Biological model		
I^2 - Total	**82.00**	80.07 to 83.91
I^2 - Study	63.99	62.07 to 65.91
I^2 - Species	18.00	16.08 to 19.92
Methodological model		
I^2 - Total	**81.15**	79.23 to 83.07
I^2 - Study	57.47	55.55 to 59.39
I^2 - Species	23.67	21.75 to 25.59

B: Heterogeneity from the dataset formed by the community studies		
	I^2 value	**95% Confidence interval**
Model without moderators		
I^2 - Total	41.41	39.49 to 43.33
I^2 - Study	27.50	25.58 to 29.42
I^2 - Species	13.91	11.99 to 15.83
Biological model		
I^2 - Total	35.07	33.15 to 36.99
I^2 - Study	20.83	18.91 to 22.75
I^2 - Species	14.24	12.32 to 16.16
Methodological model		
I^2 - Total	34.25	32.33 to 36.17
I^2 - Study	19.47	17.55 to 21.39
I^2 - Species	14.78	12.86 to 16.70

Table S8: Statistical tests of the biological model of the palatability studies

	Hedges' *g*	SE	CI (lower bound)	CI (upper bound)
Colonial ascidian; Predator: Amphipod	0.10	0.41	-0.70	0.89
Solitary ascidian; Predator: Amphipod	-0.75	0.42	-1.57	0.07
Colonial ascidian; Field predators	2.68	0.63	1.45	3.92
Solitary ascidian; Field predators	1.60	0.46	0.70	2.50
Colonial ascidian; Predator: Crab	0.98	1.11	-1.19	3.15
Solitary ascidian; Predator: Crab	0.83	1.18	-1.49	3.15
Colonial ascidian; Predator: Hermit crab	1.94	1.52	-1.04	4.93
Solitary ascidian; Predator: Hermit crab	0.15	1.46	-2.71	3.02
Colonial ascidian; Predator: Starfish	1.40	0.38	0.65	2.15
Solitary ascidian; Predator: Starfish	1.04	0.42	0.23	1.86
Colonial ascidian; Predator: Fish	2.21	0.37	1.49	2.93
Solitary ascidian; Predator: Fish	2.99	0.42	2.16	3.82

Table S9: Statistical tests of the biological model of the community studies.

	Hedges' *g*	SE	CI (lower bound)	CI (upper bound)
Colonial ascidian; Field predators	-0.35	0.19	-0.72	0.02
Solitary ascidian; Field predators	-0.48	0.19	-0.84	-0.11
Colonial ascidian; Predator: Crab	0.20	0.44	-0.67	1.07
Solitary ascidian; Predator: Crab	-1.46	0.50	-2.43	-0.49
Colonial ascidian; Predator: Starfish	0.61	0.48	-0.33	1.54
Solitary ascidian; Predator: Starfish	-1.25	0.44	-2.12	-0.38
Colonial ascidian; Predator: Nudibranch	-1.35	0.71	-2.74	0.05
Solitary ascidian; Predator: Nudibranch	-0.85	0.49	-1.81	0.11
Colonial ascidian; Predator: Sea urchin	-1.53	0.44	-2.38	-0.67
Solitary ascidian; Predator: Sea urchin	-1.50	0.49	-2.46	-0.54

Table S10: Status, place and habitat information for each effect size in palatability studies

Species	Status	Country	Latitude	Predator	Experiment	Place	Habitat
Phallusia nigra	Alien	USA	25	*Thalassoma bifasciatum*	Pellet	Laboratory	N/A
Phallusia nigra	Alien	USA	25	*Thalassoma bifasciatum*	Pellet	Laboratory	N/A
Phallusia nigra	Alien	USA	25	*Thalassoma bifasciatum*	Pellet	Laboratory	N/A
Aplidium stellatum	N/A		34	*Thalassoma bifasciatum*	Pellet	Laboratory	N/A
Botrylloides niger	N/A		34	*Thalassoma bifasciatum*	Pellet	Laboratory	N/A
Botrylloides sp.	N/A		34	*Thalassoma bifasciatum*	Pellet	Laboratory	N/A
Clavelina picta	N/A		34	*Thalassoma bifasciatum*	Pellet	Laboratory	N/A
Didemnum candidum	N/A	USA	34	*Thalassoma bifasciatum*	Pellet	Laboratory	N/A
Diplosoma listerianum	Alien (no records)		34	*Thalassoma bifasciatum*	Pellet	Laboratory	N/A
Ecteinascidia turbinata	Alien (no records)	USA	34	*Thalassoma bifasciatum*	Pellet	Laboratory	N/A
Rhopalaea abdominalis	N/A		34	*Thalassoma bifasciatum*	Pellet	Laboratory	N/A
Aplidium constellatum	N/A		34	*Thalassoma bifasciatum*	Pellet	Laboratory	N/A
Eudistoma hepaticum	N/A		34	*Thalassoma bifasciatum*	Pellet	Laboratory	N/A
Symplegma rubra	N/A		34	*Thalassoma bifasciatum*	Pellet	Laboratory	N/A
Styela plicata	Alien (no records)	USA	34	*Thalassoma bifasciatum*	Pellet	Laboratory	N/A
Phallusia nigra	Alien		34	*Thalassoma bifasciatum*	Pellet	Laboratory	N/A
Ascidia interrupta	N/A		34	*Thalassoma bifasciatum*	Pellet	Laboratory	N/A
Didemnum conchyliatum	N/A	Bahamas	26	*Field (unindentified)*	Pellet	Field	Natural
Cystodytes violatinctus	N/A		13	*Field (unindentified)*	Pellet	Field	Natural
Cystodytes violatinctus	N/A		41	*Field (unindentified)*	Pellet	Field	Natural
Cystodytes violatinctus	N/A		41	*Field (unindentified)*	Pellet	Field	Natural
Cystodytes violatinctus	N/A		13	*Diadema savignyi*	Pellet	Laboratory	N/A
Cystodytes violatinctus	N/A		41	*Diadema savignyi*	Pellet	Laboratory	N/A
Cystodytes violatinctus	N/A		41	*Diadema savignyi*	Pellet	Laboratory	N/A
Cystodytes violatinctus	N/A		13	*Canthigaster solandri*	Pellet	Laboratory	N/A
Cystodytes violatinctus	N/A		41	*Canthigaster solandri*	Pellet	Laboratory	N/A
Cystodytes violatinctus	N/A		41	*Canthigaster solandri*	Pellet	Laboratory	N/A
Sigillina sp.	N/A		13	*Field (unindentified)*	Pellet	Field	Natural

Aplidium sp.	N/A		-64	*Gondogeneia antarctica*	Pellet	Laboratory	N/A
Aplidium sp.	N/A		-64	*Gondogeneia antarctica*	Pellet	Laboratory	N/A
Distaplia cylindrica	N/A		-64	*Gondogeneia antarctica*	Pellet	Laboratory	N/A
Distaplia cylindrica	N/A		-64	*Gondogeneia antarctica*	Pellet	Laboratory	N/A
Synoicum adareanum	N/A		-64	*Gondogeneia antarctica*	Pellet	Laboratory	N/A
Synoicum adareanum	N/A		-64	*Gondogeneia antarctica*	Pellet	Laboratory	N/A
Synoicum sp.	N/A		-64	*Gondogeneia antarctica*	Pellet	Laboratory	N/A
Synoicum sp.	N/A		-64	*Gondogeneia antarctica*	Pellet	Laboratory	N/A
Ascidia sp.	N/A		-64	*Gondogeneia antarctica*	Pellet	Laboratory	N/A
Ascidia sp.	N/A		-64	*Gondogeneia antarctica*	Pellet	Laboratory	N/A
Cnemidocarpa verrucosa	N/A		-64	*Gondogeneia antarctica*	Pellet	Laboratory	N/A
Cnemidocarpa verrucosa	N/A		-64	*Gondogeneia antarctica*	Pellet	Laboratory	N/A
Corella eumyota	N/A		-64	*Gondogeneia antarctica*	Pellet	Laboratory	N/A
Corella eumyota	N/A		-64	*Gondogeneia antarctica*	Pellet	Laboratory	N/A
Microcosmus sp.	N/A		-64	*Gondogeneia antarctica*	Pellet	Laboratory	N/A
Microcosmus sp.	N/A		-64	*Gondogeneia antarctica*	Pellet	Laboratory	N/A
Pyura georgiana	N/A		-64	*Gondogeneia antarctica*	Pellet	Laboratory	N/A
Pyura georgiana	N/A		-64	*Gondogeneia antarctica*	Pellet	Laboratory	N/A
Pyura setosa	N/A		-64	*Gondogeneia antarctica*	Pellet	Laboratory	N/A
Pyura setosa	N/A		-64	*Gondogeneia antarctica*	Pellet	Laboratory	N/A
Aplidium falklandicum	N/A		-70	*Cheirimedon femoratus*	Pellet	Laboratory	N/A
Aplidium fuegiense	N/A		-71	*Cheirimedon femoratus*	Pellet	Laboratory	N/A
Aplidium meridianum	N/A		-70	*Cheirimedon femoratus*	Pellet	Laboratory	N/A
Synoicum adareanum	N/A		-70	*Cheirimedon femoratus*	Pellet	Laboratory	N/A
Synoicum adareanum	N/A		-70	*Cheirimedon femoratus*	Pellet	Laboratory	N/A
Synoicum adareanum	N/A		-70	*Cheirimedon femoratus*	Pellet	Laboratory	N/A
Synoicum adareanum	N/A		-70	*Cheirimedon femoratus*	Pellet	Laboratory	N/A
Synoicum adareanum	N/A		-70	*Cheirimedon femoratus*	Pellet	Laboratory	N/A
Synoicum adareanum	N/A		-71	*Cheirimedon femoratus*	Pellet	Laboratory	N/A

Synoicum adareanum	N/A		-70	*Cheirimedon femoratus*	Pellet	Laboratory	N/A
Synoicum adareanum	N/A		-70	*Cheirimedon femoratus*	Pellet	Laboratory	N/A
Synoicum adareanum	N/A		-70	*Cheirimedon femoratus*	Pellet	Laboratory	N/A
Aplidium proliferum	N/A		51	*Carcinus maenas*	Pellet	Laboratory	N/A
Aplidium proliferum	N/A		51	*Carcinus maenas*	Pellet	Laboratory	N/A
Ascidiella aspersa	Native	Wales	51	*Carcinus maenas*	Pellet	Laboratory	N/A
Ascidiella aspersa	Native	Wales	51	*Carcinus maenas*	Pellet	Laboratory	N/A
Ascidiella aspersa	Native	Wales	51	*Carcinus maenas*	Pellet	Laboratory	N/A
Botrylloides leachii	N/A		51	*Carcinus maenas*	Pellet	Laboratory	N/A
Botrylloides leachii	N/A		51	*Carcinus maenas*	Pellet	Laboratory	N/A
Botryllus schlosseri	N/A	Wales	51	*Carcinus maenas*	Pellet	Laboratory	N/A
Botryllus schlosseri	N/A	Wales	51	*Carcinus maenas*	Pellet	Laboratory	N/A
Ciona intestinalis	N/A	Wales	51	*Carcinus maenas*	Pellet	Laboratory	N/A
Ciona intestinalis	N/A	Wales	51	*Carcinus maenas*	Pellet	Laboratory	N/A
Ciona intestinalis	N/A	Wales	51	*Carcinus maenas*	Pellet	Laboratory	N/A
Clavelina lepadiformis	N/A		51	*Carcinus maenas*	Pellet	Laboratory	N/A
Clavelina lepadiformis	N/A		51	*Carcinus maenas*	Pellet	Laboratory	N/A
Dendrodoa grossularia	N/A		51	*Carcinus maenas*	Pellet	Laboratory	N/A
Dendrodoa grossularia	N/A		51	*Carcinus maenas*	Pellet	Laboratory	N/A
Morchellium argus	N/A		51	*Carcinus maenas*	Pellet	Laboratory	N/A
Morchellium argus	N/A		51	*Carcinus maenas*	Pellet	Laboratory	N/A
Morchellium argus	N/A		51	*Carcinus maenas*	Pellet	Laboratory	N/A
Polyclinum aurantium	N/A		51	*Carcinus maenas*	Pellet	Laboratory	N/A
Polyclinum aurantium	N/A		51	*Carcinus maenas*	Pellet	Laboratory	N/A
Aplidium proliferum	N/A		51	*Carcinus maenas*	Pellet	Laboratory	N/A
Botryllus schlosseri	N/A	Wales	51	*Carcinus maenas*	Pellet	Laboratory	N/A
Clavelina lepadiformis	N/A		51	*Carcinus maenas*	Pellet	Laboratory	N/A
Morchellium argus	N/A		51	*Carcinus maenas*	Pellet	Laboratory	N/A
Herdmania grandis	N/A		-34	*Cabestana spengleri*	Pellet	Laboratory	N/A

Herdmania grandis	N/A		-34	*Ranella australasia*	Pellet	Laboratory	N/A
Herdmania grandis	N/A		-34	*Meridiastra calcar*	Pellet	Laboratory	N/A
Aplidium falklandicum	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Aplidium falklandicum	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Aplidium falklandicum	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Aplidium falklandicum	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Aplidium falklandicum	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Aplidium falklandicum	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Aplidium falklandicum	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Aplidium falklandicum	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Aplidium falklandicum	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Aplidium falklandicum	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Aplidium falklandicum	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Aplidium falklandicum	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Aplidium falklandicum	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Distaplia cylindrica	N/A		-64	*Odontaster validus*	Pellet	Laboratory	N/A
Didemnum conchyliatum	N/A	Bahamas	26	*Thalassoma bifasciatum*	Pellet	Laboratory	N/A
Aplidium stellatum	N/A		34	*Lagodon rhomboides*	Pellet	Laboratory	N/A
Aplidium constellatum	N/A		34	*Lagodon rhomboides*	Pellet	Laboratory	N/A
Aplidium stellatum	N/A		34	*Lagodon rhomboides*	Pellet	Laboratory	N/A
Trididemnum solidum	N/A	USA	24	*Thalassoma bifasciatum*	Pellet	Laboratory	N/A
Aplidium sp.	N/A		-64	*Odontaster validus*	Pellet	Laboratory	N/A
Aplidium sp.	N/A		-64	*Odontaster validus*	Pellet	Laboratory	N/A
Distaplia colligans	N/A		-64	*Odontaster validus*	Pellet	Laboratory	N/A
Distaplia colligans	N/A		-64	*Odontaster validus*	Pellet	Laboratory	N/A
Distaplia cylindrica	N/A		-64	*Odontaster validus*	Pellet	Laboratory	N/A
Distaplia cylindrica	N/A		-64	*Odontaster validus*	Pellet	Laboratory	N/A
Synoicum adareanum	N/A		-64	*Odontaster validus*	Pellet	Laboratory	N/A
Synoicum adareanum	N/A		-64	*Odontaster validus*	Pellet	Laboratory	N/A

Synoicum sp.	N/A		-64	*Odontaster validus*	Pellet	Laboratory	N/A
Synoicum sp.	N/A		-64	*Odontaster validus*	Pellet	Laboratory	N/A
Ascidia sp.	N/A		-64	*Odontaster validus*	Pellet	Laboratory	N/A
Ascidia sp.	N/A		-64	*Odontaster validus*	Pellet	Laboratory	N/A
Corella eumyota	N/A		-64	*Odontaster validus*	Pellet	Laboratory	N/A
Corella eumyota	N/A		-64	*Odontaster validus*	Pellet	Laboratory	N/A
Bathypera sp.	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Bathypera sp.	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Bathypera sp.	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Cnemidocarpa verrucosa	N/A		-71	*Odontaster validus*	Pellet	Laboratory	N/A
Cnemidocarpa verrucosa	N/A		-71	*Odontaster validus*	Pellet	Laboratory	N/A
Cnemidocarpa verrucosa	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Cnemidocarpa verrucosa	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Cnemidocarpa verrucosa	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Cnemidocarpa verrucosa	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Cnemidocarpa verrucosa	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Cnemidocarpa verrucosa	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Cnemidocarpa verrucosa	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Cnemidocarpa verrucosa	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Molgula pedunculata	N/A		-71	*Odontaster validus*	Pellet	Laboratory	N/A
Molgula pedunculata	N/A		-71	*Odontaster validus*	Pellet	Laboratory	N/A
Pyura sp.	N/A		-62	*Odontaster validus*	Pellet	Laboratory	N/A
Pyura sp.	N/A		-62	*Odontaster validus*	Pellet	Laboratory	N/A
Pyura sp.	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Pyura sp.	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Aplidium fuegiense	N/A		-71	*Odontaster validus*	Pellet	Laboratory	N/A
Cnemidocarpa verrucosa	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Cnemidocarpa verrucosa	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Cnemidocarpa verrucosa	N/A		-77	*Fundulus grandis*	Pellet	Laboratory	N/A

Aplidium falklandicum	N/A		-71	*Odontaster validus*	Pellet	Laboratory	N/A
Aplidium millari	N/A		-71	*Odontaster validus*	Pellet	Laboratory	N/A
Aplidium millari	N/A		-71	*Odontaster validus*	Pellet	Laboratory	N/A
Cnemidocarpa verrucosa	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Cnemidocarpa verrucosa	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Molgula pedunculata	N/A		-71	*Odontaster validus*	Pellet	Laboratory	N/A
Molgula pedunculata	N/A		-71	*Odontaster validus*	Pellet	Laboratory	N/A
Molgula pedunculata	N/A		-71	*Odontaster validus*	Pellet	Laboratory	N/A
Pareugyrioides arnbackae	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Pareugyrioides arnbackae	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Synoicum adareanum	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Synoicum adareanum	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Synoicum adareanum	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Clavelina lepadiformis	Alien		41	*Chromis chromis*	Pellet	Field	Artificial
Clavelina lepadiformis	Alien		41	*Chromis chromis*	Pellet	Field	Artificial
Eudistoma olivaceum	N/A		27	*Lagodon rhomboides*	Pellet	Laboratory	N/A
Eudistoma olivaceum	N/A		27	*Lagodon rhomboides*	Pellet	Laboratory	N/A
Trididemnum solidum	N/A	USA	15	*Lagodon rhomboides*	Pellet	Laboratory	N/A
Trididemnum solidum	N/A	USA	15	*Exaiptasia diaphana*	Pellet	Laboratory	N/A
Trididemnum solidum	N/A	USA	15	*Exaiptasia diaphana*	Pellet	Laboratory	N/A
Aplidium falklandicum	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Aplidium fuegiense	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Aplidium meridianum	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Synoicum adareanum	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Synoicum adareanum	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Synoicum adareanum	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Synoicum adareanum	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Synoicum adareanum	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Synoicum adareanum	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A

Synoicum adareanum	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Synoicum adareanum	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Synoicum adareanum	N/A		-70	*Odontaster validus*	Pellet	Laboratory	N/A
Clavelina oblonga	N/A		27	*Lagodon rhomboides*	Pellet	Laboratory	N/A
Clavelina oblonga	N/A		27	*Lagodon rhomboides*	Pellet	Laboratory	N/A
Clavelina oblonga	N/A		27	*Lagodon rhomboides*	Pellet	Laboratory	N/A
Ecteinascidia turbinata	Alien (no records)	USA	29	*Lagodon rhomboides*	Pellet	Laboratory	N/A
Ecteinascidia turbinata	Alien (no records)	USA	29	*Lagodon rhomboides*	Pellet	Laboratory	N/A
Ecteinascidia turbinata	Alien (no records)	USA	29	*Lagodon rhomboides*	Pellet	Laboratory	N/A
Ecteinascidia turbinata	Alien (no records)	USA	29	*Lagodon rhomboides*	Pellet	Laboratory	N/A
Ecteinascidia turbinata	Alien (no records)	USA	29	*Lagodon rhomboides*	Pellet	Laboratory	N/A
Styela sp.	N/A		-70	*Dardanus arrosor*	Pellet	Laboratory	N/A
Styela sp.	N/A		-70	*Dardanus arrosor*	Pellet	Laboratory	N/A
Synoicum adareanum	N/A		-70	*Dardanus arrosor*	Pellet	Laboratory	N/A
Synoicum adareanum	N/A		-70	*Dardanus arrosor*	Pellet	Laboratory	N/A
Cnemidocarpa sp.	N/A		-70	*Dardanus arrosor*	Pellet	Laboratory	N/A
Cnemidocarpa sp.	N/A		-70	*Dardanus arrosor*	Pellet	Laboratory	N/A
Cnemidocarpa verrucosa	N/A		-70	*Dardanus arrosor*	Pellet	Laboratory	N/A
Cnemidocarpa verrucosa	N/A		-70	*Dardanus arrosor*	Pellet	Laboratory	N/A
Tylobranchion speciosum	N/A		-70	*Dardanus arrosor*	Pellet	Laboratory	N/A
Tylobranchion speciosum	N/A		-70	*Dardanus arrosor*	Pellet	Laboratory	N/A

Table S11: Status, place and habitat information for each effect size in community studies

Species	**Status**	**Country**	**Latitude**	**Predator**	**Experiment**	**Place**	**Habitat**
Aplidium glabrum	N/A		42	*Strongylocentrotus droebachiensis*	Community	Field	Natural
Botrylloides violaceus	alien (no records)	USA	42	*Strongylocentrotus droebachiensis*	Community	Field	Natural
Ascidiella aspersa	alien	Argentina	-42	*Field (unindentified)*	Community	Field	Artificial
Ascidiella aspersa	alien	Argentina	-42	*Field (unindentified)*	Community	Field	Artificial
Ciona robusta	alien	Argentina	-42	*Field (unindentified)*	Community	Field	Artificial

Ciona robusta	alien	Argentina	-42	*Field (unindentified)*	Community	Field	Artificial
Botryllus schlosseri	alien (no records)	Canada	49	*Strongylocentrotus droebachiensis*	Community	Laboratory	N/A
Botryllus schlosseri	alien (no records)	Canada	49	*Strongylocentrotus franciscanus*	Community	Laboratory	N/A
Botryllus schlosseri	alien (no records)	Canada	49	*Pisaster ochraceus*	Community	Laboratory	N/A
Botryllus schlosseri	alien (no records)	Canada	49	*Evasterias troschelii*	Community	Laboratory	N/A
Botryllus schlosseri	alien (no records)	Canada	49	*Dermasterias imbricata*	Community	Laboratory	N/A
Botryllus schlosseri	alien (no records)	Canada	49	*Cancer productus*	Community	Laboratory	N/A
Botryllus schlosseri	alien (no records)	Canada	49	*Cancer productus*	Community	Laboratory	N/A
Botryllus schlosseri	alien (no records)	Canada	49	*Cancer magister*	Community	Laboratory	N/A
Botryllus schlosseri	alien (no records)	Canada	49	*Cancer magister*	Community	Laboratory	N/A
Botryllus schlosseri	alien (no records)	Canada	49	*Cancer gracilis*	Community	Laboratory	N/A
Botryllus schlosseri	alien (no records)	Canada	49	*Carcinus maenas*	Community	Laboratory	N/A
Botryllus schlosseri	alien (no records)	Canada	49	*Hermissenda crassicornis*	Community	Laboratory	N/A
Botryllus schlosseri	alien (no records)	Canada	49	*Fusitriton oregonensis*	Community	Laboratory	N/A
Botrylloides violaceus	alien	Canada	49	*Strongylocentrotus droebachiensis*	Community	Laboratory	N/A
Botrylloides violaceus	alien	Canada	49	*Strongylocentrotus franciscanus*	Community	Laboratory	N/A
Botrylloides violaceus	alien	Canada	49	*Pisaster ochraceus*	Community	Laboratory	N/A
Botrylloides violaceus	alien	Canada	49	*Evasterias troschelii*	Community	Laboratory	N/A
Botrylloides violaceus	alien	Canada	49	*Dermasterias imbricata*	Community	Laboratory	N/A
Botrylloides violaceus	alien	Canada	49	*Cancer productus*	Community	Laboratory	N/A
Botrylloides violaceus	alien	Canada	49	*Cancer productus*	Community	Laboratory	N/A
Botrylloides violaceus	alien	Canada	49	*Cancer magister*	Community	Laboratory	N/A
Botrylloides violaceus	alien	Canada	49	*Cancer magister*	Community	Laboratory	N/A
Botrylloides violaceus	alien	Canada	49	*Cancer gracilis*	Community	Laboratory	N/A
Botrylloides violaceus	alien	Canada	49	*Carcinus maenas*	Community	Laboratory	N/A
Botrylloides violaceus	alien	Canada	49	*Hermissenda crassicornis*	Community	Laboratory	N/A
Botrylloides violaceus	alien	Canada	49	*Fusitriton oregonensis*	Community	Laboratory	N/A
Didemnum vexillum	N/A	Canada	49	*Strongylocentrotus droebachiensis*	Community	Laboratory	N/A
Didemnum vexillum	N/A	Canada	49	*Strongylocentrotus franciscanus*	Community	Laboratory	N/A

Didemnum vexillum	N/A	Canada	49	*Pisaster ochraceus*	Community	Laboratory	N/A
Didemnum vexillum	N/A	Canada	49	*Evasterias troschelii*	Community	Laboratory	N/A
Didemnum vexillum	N/A	Canada	49	*Cancer productus*	Community	Laboratory	N/A
Didemnum vexillum	N/A	Canada	49	*Cancer productus*	Community	Laboratory	N/A
Didemnum vexillum	N/A	Canada	49	*Cancer magister*	Community	Laboratory	N/A
Didemnum vexillum	N/A	Canada	49	*Cancer gracilis*	Community	Laboratory	N/A
Didemnum vexillum	N/A	Canada	49	*Carcinus maenas*	Community	Laboratory	N/A
Didemnum vexillum	N/A	Canada	49	*Fusitriton oregonensis*	Community	Laboratory	N/A
Clavelina moluccensis	N/A		-35	*Field (unindentified)*	Community	Field	Artificial
Clavelina moluccensis	N/A		-35	*Field (unindentified)*	Community	Field	Artificial
Clavelina moluccensis	N/A		-35	*Field (unindentified)*	Community	Field	Artificial
Clavelina moluccensis	N/A		-35	*Field (unindentified)*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Costoanachis avara*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Costoanachis avara*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Costoanachis avara*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Costoanachis avara*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Costoanachis avara*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Costoanachis avara*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Costoanachis avara*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Costoanachis avara*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Astyris lunata*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Astyris lunata*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Astyris lunata*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Costoanachis avara*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Costoanachis avara*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Costoanachis avara*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Costoanachis avara*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Costoanachis avara*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Costoanachis avara*	Community	Field	Artificial

Botrylloides diegensis	N/A	USA	41	*Costoanachis avara*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Costoanachis avara*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Astyris lunata*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Astyris lunata*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Astyris lunata*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Costoanachis avara*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Costoanachis avara*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Costoanachis avara*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Costoanachis avara*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Costoanachis avara*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Costoanachis avara*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Costoanachis avara*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Astyris lunata*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Astyris lunata*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Astyris lunata*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Astyris lunata*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Astyris lunata*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Astyris lunata*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Astyris lunata*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Astyris lunata*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Astyris lunata*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Astyris lunata*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Astyris lunata*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Astyris lunata*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Astyris lunata*	Community	Field	Artificial

Botrylloides diegensis	N/A	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Astyris lunata*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Astyris lunata*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Astyris lunata*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Astyris lunata*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Astyris lunata*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial

Botrylloides diegensis	N/A	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Cotonopsis lafresnayi*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Cotonopsis lafresnayi*	Community	Field	Artificial

Botryllus schlosseri	alien	USA	41	*Astyris lunata*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Astyris lunata*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Astyris lunata*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Astyris lunata*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Astyris lunata*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Astyris lunata*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Astyris lunata*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Astyris lunata*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Astyris lunata*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Astyris lunata*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Astyris lunata*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Astyris lunata*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Astyris lunata*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Astyris lunata*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Astyris lunata*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Astyris lunata*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Astyris lunata*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Astyris lunata*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Astyris lunata*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Astyris lunata*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Astyris lunata*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Astyris lunata*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Astyris lunata*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Astyris lunata*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Astyris lunata*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Astyris lunata*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Astyris lunata*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Astyris lunata*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Astyris lunata*	Community	Field	Artificial

Botrylloides diegensis	N/A	USA	41	*Astyris lunata*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Astyris lunata*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Astyris lunata*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Astyris lunata*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Astyris lunata*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Astyris lunata*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Astyris lunata*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Astyris lunata*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Astyris lunata*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Astyris lunata*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Astyris lunata*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Astyris lunata*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Astyris lunata*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Astyris lunata*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Astyris lunata*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Astyris lunata*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Lacuna vincta*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Lacuna vincta*	Community	Field	Artificial
Botryllus schlosseri	alien	USA	41	*Lacuna vincta*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Lacuna vincta*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Lacuna vincta*	Community	Field	Artificial
Botrylloides diegensis	N/A	USA	41	*Lacuna vincta*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Lacuna vincta*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Lacuna vincta*	Community	Field	Artificial
Diplosoma sp.	N/A		41	*Lacuna vincta*	Community	Field	Artificial
Clavelina oblonga	alien	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Polyandrocarpa zorritensis	N/A	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Polyclinum constellatum	N/A	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Aplidium accarense	N/A		-23	*Field (unindentified)*	Community	Field	Artificial
Botrylloides niger	uncertain	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Styela plicata	alien	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Herdmania pallida	alien	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Styela sp.	N/A		44	*Field (unindentified)*	Community	Field	Artificial
Ascidia sp.	N/A		44	*Field (unindentified)*	Community	Field	Artificial
Botryllus schlosseri	uncertain	Italy	44	*Field (unindentified)*	Community	Field	Artificial

-	N/A		44	*Field (unindentified)*	Community	Field	Artificial
Diplosoma sp.	N/A		44	*Field (unindentified)*	Community	Field	Artificial
Perophora sp.	N/A		44	*Field (unindentified)*	Community	Field	Artificial
Ascidia curvata	alien	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Ascidia curvata	alien	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Ascidia curvata	alien	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Ascidia interrupta	alien	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Ascidia interrupta	alien	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Ascidia interrupta	alien	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Botrylloides niger	uncertain	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Botrylloides niger	uncertain	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Botrylloides niger	uncertain	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Botrylloides niger	uncertain	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Clavelina oblonga	alien	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Clavelina oblonga	alien	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Clavelina oblonga	alien	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Clavelina oblonga	alien	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Didemnum sp.	N/A		-23	*Field (unindentified)*	Community	Field	Artificial
Didemnum sp.	N/A		-23	*Field (unindentified)*	Community	Field	Artificial
Didemnum cineraceum	alien	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Didemnum cineraceum	alien	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Didemnum cineraceum	alien	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Didemnum perlucidum	alien (no records)	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Didemnum perlucidum	alien (no records)	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Didemnum perlucidum	alien (no records)	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Didemnum perlucidum	alien (no records)	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
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Diplosoma listerianum	N/A	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Diplosoma listerianum	N/A	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial

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Distaplia stilifera	alien	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
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Distaplia stilifera	alien	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
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Herdmania pallida	alien	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Perophora sp.	N/A		-23	*Field (unindentified)*	Community	Field	Artificial
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Perophora sp.	N/A		-23	*Field (unindentified)*	Community	Field	Artificial
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Phallusia nigra	uncertain	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
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Phallusia nigra	uncertain	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
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Polyclinum constellatum	N/A	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Styela plicata	alien	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
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Trididemnum orbiculatum	N/A	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
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Botrylloides niger	uncertain	Brazil	-23	*Field (unindentified)*	Community	Field	Natural
Symplegma brakenhielmi	uncertain	Brazil	-23	*Field (unindentified)*	Community	Field	Natural
Phallusia nigra	uncertain	Brazil	-23	*Field (unindentified)*	Community	Field	Natural

Botrylloides giganteus	uncertain	Brazil	-23	*Field (unindentified)*	Community	Field	Natural
Didemnum perlucidum	alien (no records)	Brazil	-23	*Field (unindentified)*	Community	Field	Natural
Symplegma rubra	N/A	Brazil	-23	*Field (unindentified)*	Community	Field	Natural
Herdmania pallida	alien	Brazil	-23	*Field (unindentified)*	Community	Field	Natural
Microcosmus exasperatus	N/A	Brazil	-23	*Field (unindentified)*	Community	Field	Natural
Ciona intestinalis	alien	Brazil	-23	*Field (unindentified)*	Community	Field	Natural
Ascidia interrupta	alien	Brazil	-23	*Field (unindentified)*	Community	Field	Natural
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Botrylloides niger	N/A	Angola	-12	*Field (unindentified)*	Community	Field	Artificial
Diplosoma listerianum	N/A	Angola	-12	*Field (unindentified)*	Community	Field	Artificial
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Ascidia curvata	alien	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Herdmania pallida	alien	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Microcosmus exasperatus	N/A	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
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Botrylloides niger	uncertain	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Clavelina sp.	N/A		-23	*Field (unindentified)*	Community	Field	Artificial
Diplosoma listerianum	N/A	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial

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Lissoclinum sp.	N/A		-23	*Field (unindentified)*	Community	Field	Artificial
Perophora sp.	N/A		-23	*Field (unindentified)*	Community	Field	Artificial
Symplegma brakenhielmi	uncertain	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Symplegma rubra	N/A	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Ascidia interrupta	alien	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
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-	N/A		-23	*Field (unindentified)*	Community	Field	Artificial
Styela plicata	alien	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Botrylloides giganteus	uncertain	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Botrylloides niger	uncertain	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Botryllus tabori	N/A		-23	*Field (unindentified)*	Community	Field	Artificial
Distaplia bermudensis	N/A	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Diplosoma listerianum	N/A	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Didemnum perlucidum	alien (no records)	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Perophora sp.	N/A		-23	*Field (unindentified)*	Community	Field	Artificial
Symplegma brakenhielmi	uncertain	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Symplegma rubra	N/A	Brazil	-23	*Field (unindentified)*	Community	Field	Artificial
Ascidiella sp.	N/A		53	*Field (unindentified)*	Community	Field	Artificial
Ciona intestinalis	N/A	UK	53	*Field (unindentified)*	Community	Field	Artificial
Ascidiella sp.	N/A		53	*Field (unindentified)*	Community	Field	Artificial
Corella eumyota	N/A	UK	53	*Field (unindentified)*	Community	Field	Artificial
Diplosoma listerianum	N/A	UK	53	*Field (unindentified)*	Community	Field	Artificial
Molgula sp.	N/A		53	*Field (unindentified)*	Community	Field	Artificial
-	N/A	Argentina	53	*Field (unindentified)*	Community	Field	Artificial
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Ascidiella aspersa	alien	Argentina	-42	*Field (unindentified)*	Community	Field	Artificial
Ciona sp.	N/A	Argentina	-42	*Field (unindentified)*	Community	Field	Artificial

Asterocarpa humilis	uncertain	Argentina	-42	*Field (unindentified)*	Community	Field	Artificial
Asterocarpa humilis	uncertain	Argentina	-42	*Field (unindentified)*	Community	Field	Artificial
Polyclinum constellatum	N/A	Japan	33	*Ostracion immaculatum*	Separated ascidian	Laboratory	N/A
Polyclinum constellatum	N/A	Japan	33	*Ostracion immaculatum*	Separated ascidian	Laboratory	N/A
Polyclinum constellatum	N/A	Japan	33	*Ostracion immaculatum*	Separated ascidian	Laboratory	N/A
Polyclinum constellatum	N/A	Japan	33	*Ostracion immaculatum*	Separated ascidian	Laboratory	N/A
Ciona robusta	alien	Argentina	-42	*Arbacia dufresnii*	Separated ascidian	Laboratory	N/A
Ciona robusta	alien	Argentina	-42	*Pleurobranchaea maculata*	Separated ascidian	Laboratory	N/A
Ascidiella aspersa	alien	Argentina	-42	*Carcinus maenas*	Separated ascidian	Laboratory	N/A
Ascidiella aspersa	alien	Argentina	-42	*Allostichaster capensis*	Separated ascidian	Laboratory	N/A
Ciona robusta	alien	Argentina	-42	*Arbacia dufresnii*	Separated ascidian	Laboratory	N/A
Ciona robusta	alien	Argentina	-42	*Carcinus maenas*	Separated ascidian	Laboratory	N/A
Ciona robusta	alien	Argentina	-42	*Allostichaster capensis*	Separated ascidian	Laboratory	N/A
Ciona robusta	alien	Argentina	-42	*Pleurobranchaea maculata*	Separated ascidian	Laboratory	N/A
Ascidiella aspersa	alien	Argentina	-42	*Arbacia dufresnii*	Separated ascidian	Laboratory	N/A
Ascidiella aspersa	alien	Argentina	-42	*Carcinus maenas*	Separated ascidian	Laboratory	N/A
Ascidiella aspersa	alien	Argentina	-42	*Allostichaster capensis*	Separated ascidian	Laboratory	N/A
Ascidiella aspersa	alien	Argentina	-42	*Pleurobranchaea maculata*	Separated ascidian	Laboratory	N/A
Ciona intestinalis	N/A	France	48	*Field (unindentified)*	Separated ascidian	Field	Artificial
Styela clava	N/A	France	48	*Field (unindentified)*	Separated ascidian	Field	Artificial
Ciona intestinalis	N/A	France	48	*Field (unindentified)*	Separated ascidian	Field	Artificial
Styela clava	N/A	France	48	*Field (unindentified)*	Separated ascidian	Field	Artificial
Ciona intestinalis	N/A	France	48	*Field (unindentified)*	Separated ascidian	Field	Artificial
Styela clava	N/A	France	48	*Field (unindentified)*	Separated ascidian	Field	Artificial

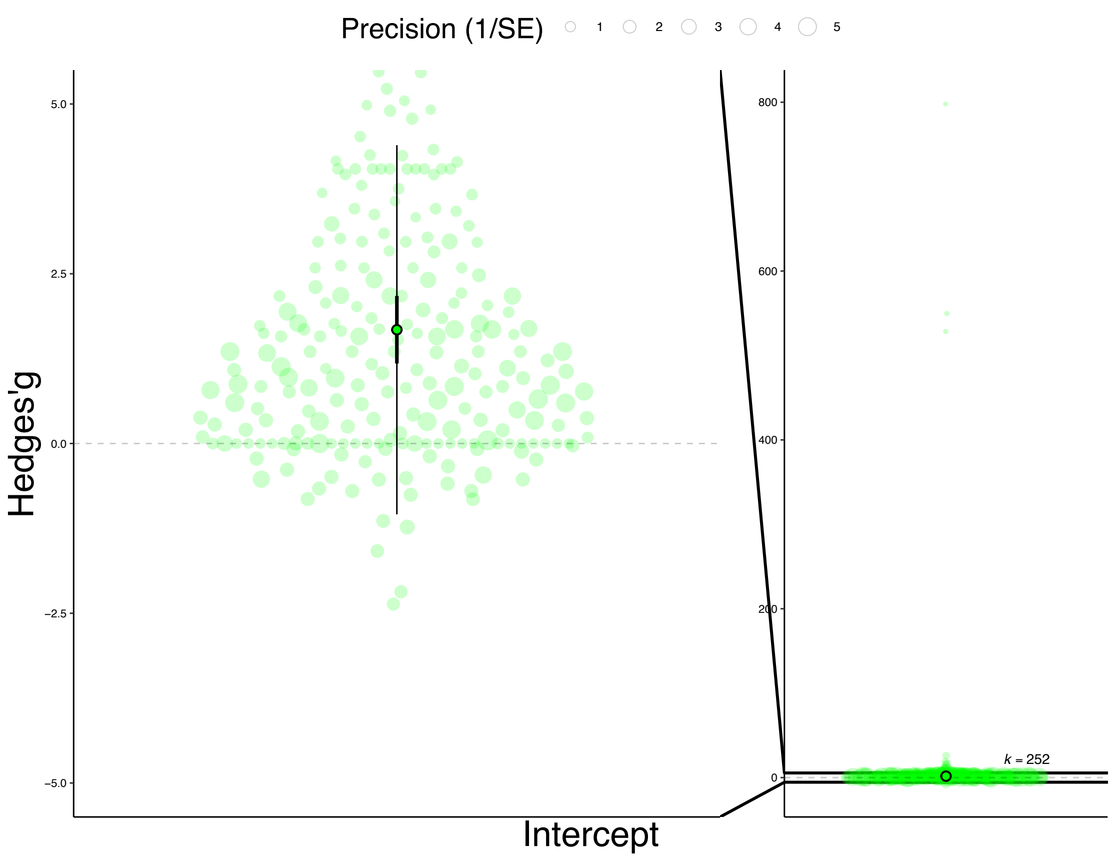

Figure S2: Data distribution of the palatability studies with the inclusion of outliers. The size of the circles represents the precision of each effect size (Hedges' *g*). The precision is calculated through the division of 1 by the standard error. In other words, the bigger the circle, the more precise the effect size. The central circle represents the mean effect size found. The thicker bar associated with this circle represents the 95% confidence interval, and the thinner one represents the prediction interval. When the confidence interval includes zero, we cannot consider that there is a significant effect on the defense of ascidians. *k* = number of effect sizes found. The more positive the value of Hedges' *g*, the bigger the effect of the defense of ascidians against predators.

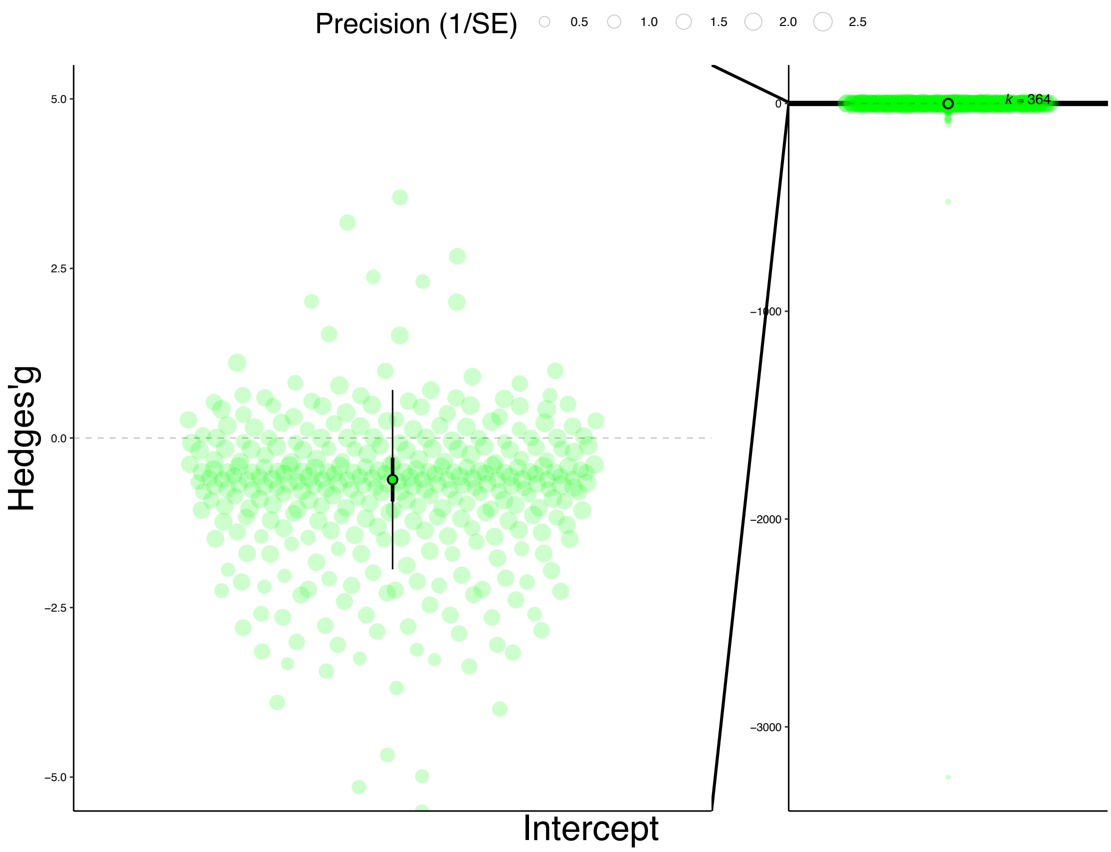

Figure S3: Data distribution of the community studies with the inclusion of outliers. The size of the circles represents the precision of each effect size (Hedges' *g*). The precision is calculated through the division of 1 by the standard error. In other words, the bigger the circle, the more precise the effect size. The central circle represents the mean effect size found. The thicker bar associated with this circle represents the 95% confidence interval, and the thinner one represents the prediction interval. When the confidence interval includes zero, we cannot consider that there is a significant effect on the defense of ascidians. *k* = number of effect sizes found. The more positive the value of Hedges' *g*, the bigger the effect of the defense of ascidians against predators.

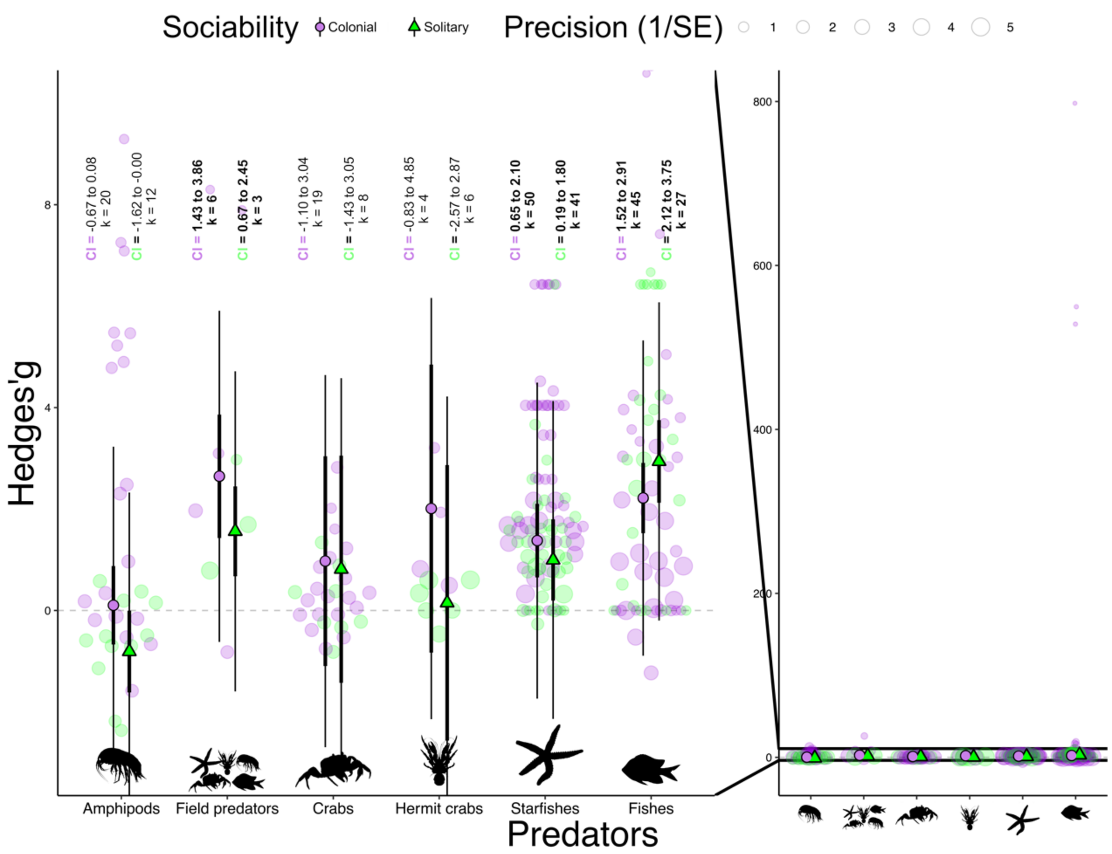

Figure S4: Figure made with the inclusion of outliers. Biological model applied to palatability studies. The central solid circle/triangle represents the mean effect size. The thicker bar associated with it represents the 95% confidence interval (CI), and the thinner one represents the prediction interval. Purple circles represent colonial ascidians, and green triangles represent solitary ones. CIs values are above each interaction. The size of the translucent circles is proportional to the precision of each effect size (Hedges' *g*). Bold values represent significant interactions. k = number of effect sizes. The more positive the value of Hedges' *g*, the bigger the effect of the defense of ascidians against predators.

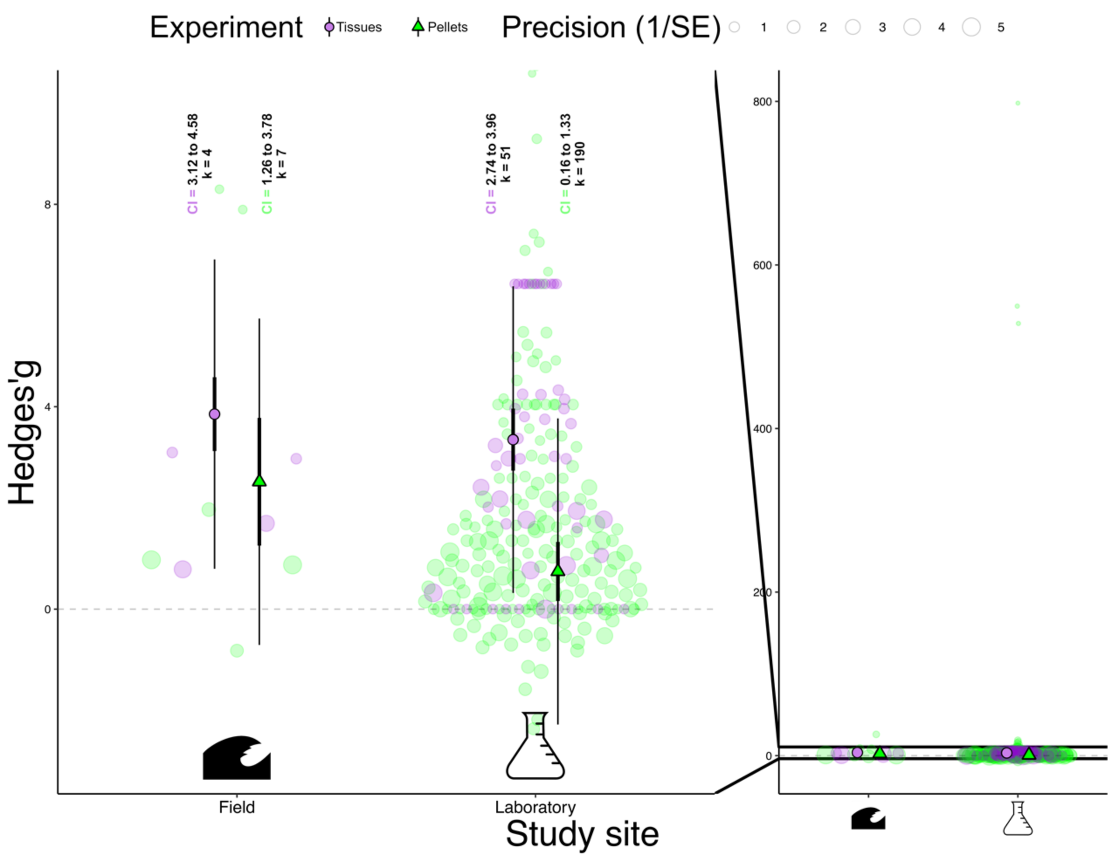

Figure S5: Figure made with the inclusion of outliers. Methodological model applied to palatability studies. The central solid circle/triangle represents the mean effect size. The thicker bar associated with it represents the 95% confidence interval (CI), and the thinner one represents the prediction interval. Purple circles represent experiments that used tissues of ascidians, and green triangles represent experiments that used pellets. CIs values are above each interaction. The size of the translucent circles is proportional to the precision of each effect size (Hedges' *g*). Bold values represent significant interactions. k = number of effect sizes. The more positive the value of Hedges' *g*, the bigger the effect of the defense of ascidians against predators.

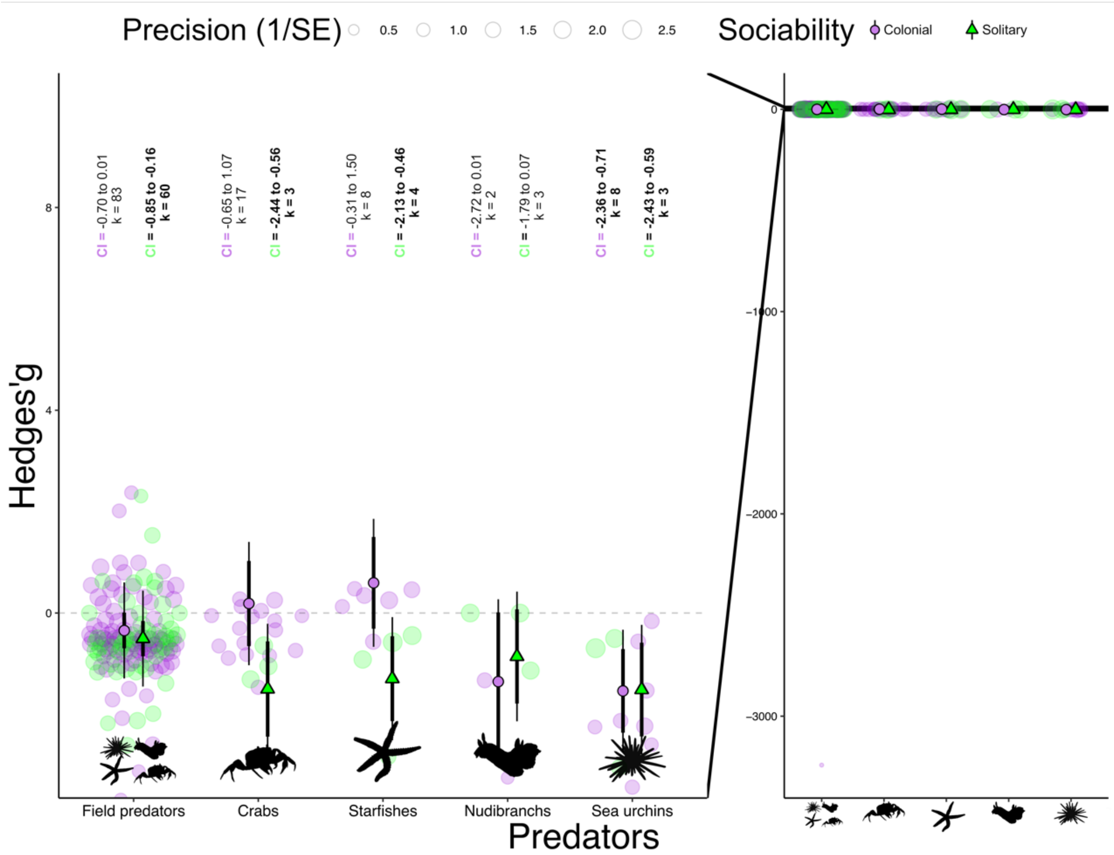

Figure S6: Figure made with the inclusion of outliers. Biological model applied to community studies. The central solid circle/triangle represents the mean effect size. The thicker bar associated with it represents the 95% confidence interval (CI), and the thinner one represents the prediction interval. Purple circles represent colonial ascidians, and green triangles represent solitary ones. CIs values are above each interaction. The size of the translucent circles is proportional to the precision of each effect size (Hedges' *g*). Bold values represent significant interactions. k = number of effect sizes. The more positive the value of Hedges' *g*, the bigger the effect of the defense of ascidians against predators.

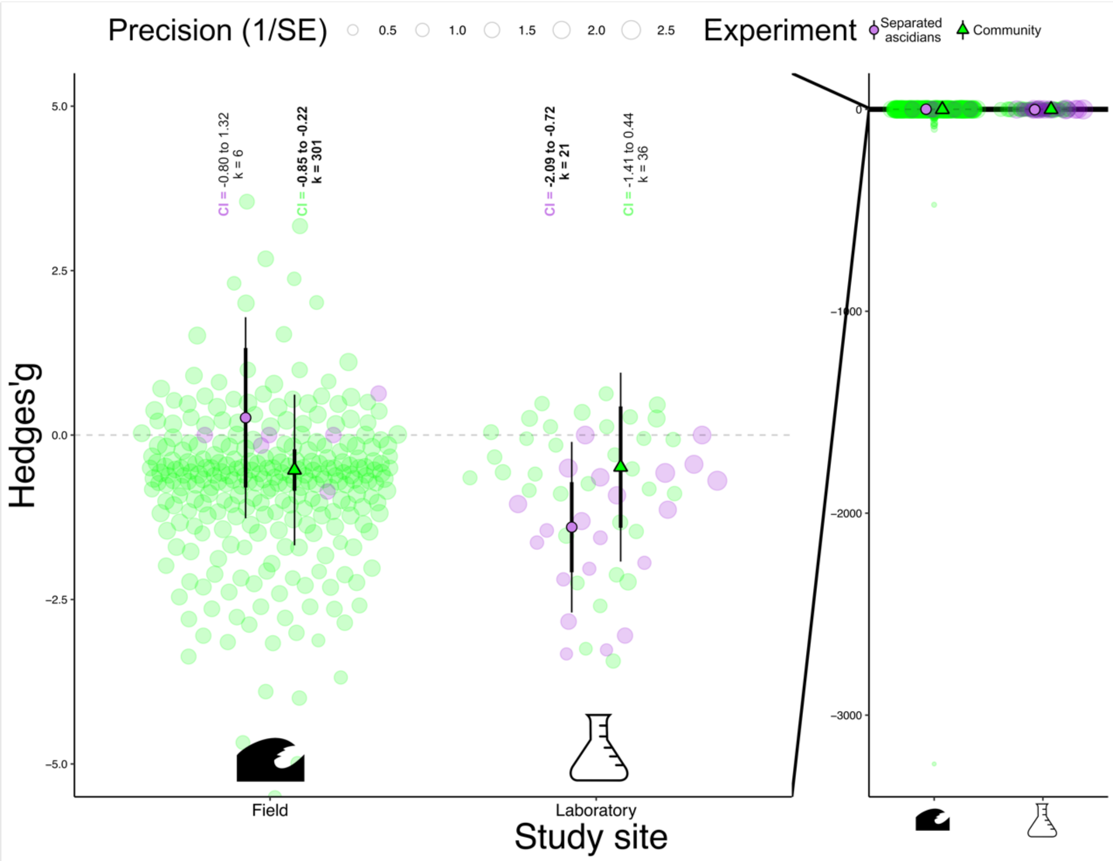

Figure S7: Figure made with the inclusion of outliers. Methodological model applied to community studies. The central solid circle/triangle represents the mean effect size. The thicker bar associated with it represents the 95% confidence interval (CI), and the thinner one represents the prediction interval. Purple circles represent experiments that used tissues of ascidians, and green triangles represent experiments that used pellets. CIs values are above each interaction. The size of the translucent circles is proportional to the precision of each effect size (Hedges' *g*). Bold values represent significant interactions. k = number of effect sizes. The more positive the value of Hedges' *g*, the bigger the effect of the defense of ascidians against predators.

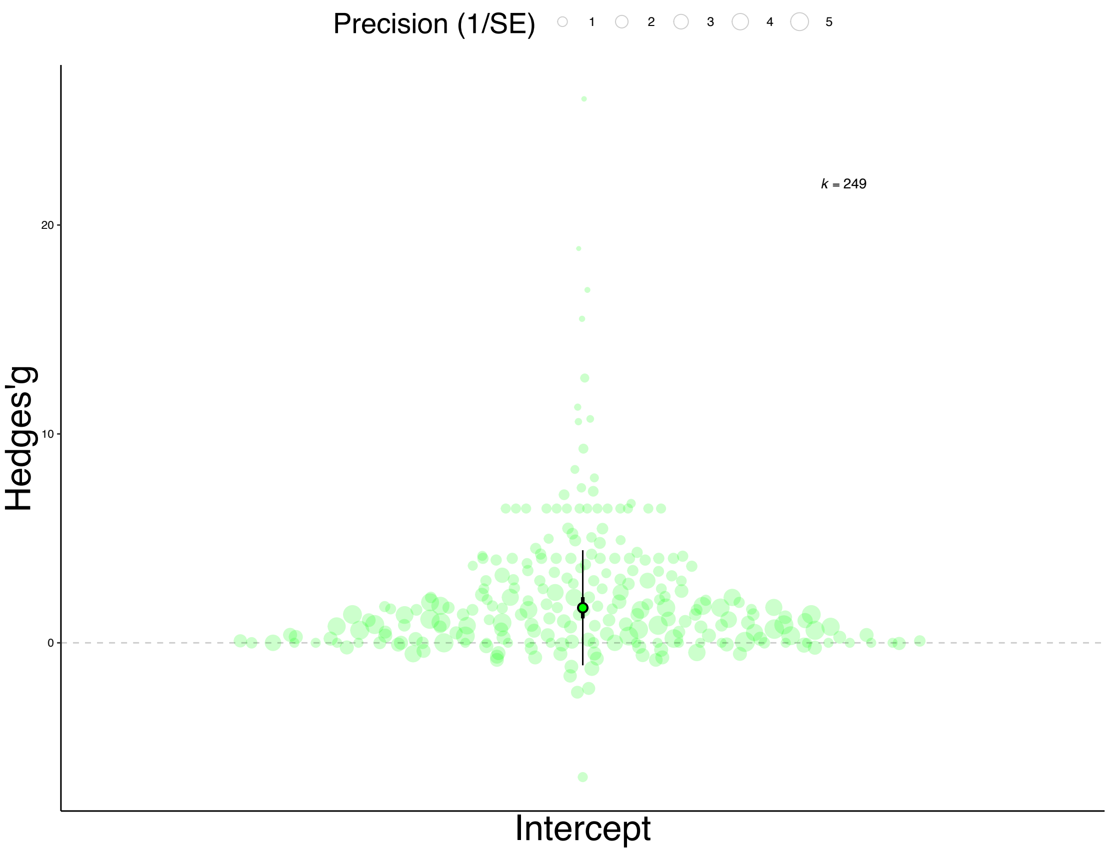

Figure S8: Data distribution of the palatability studies. The size of the circles represents the precision of each effect size (Hedges' *g*). The precision is calculated through the division of 1 by the standard error. In other words, the bigger the circle, the more precise the effect size. The central circle represents the mean effect size found. The thicker bar associated with this circle represents the 95% confidence interval, and the thinner one represents the prediction interval. When the confidence interval includes zero, we cannot consider that there is a significant effect on the defense of ascidians. K = number of effect sizes found. The more positive the value of Hedges' *g*, the bigger the effect of the defense of ascidians against predators.

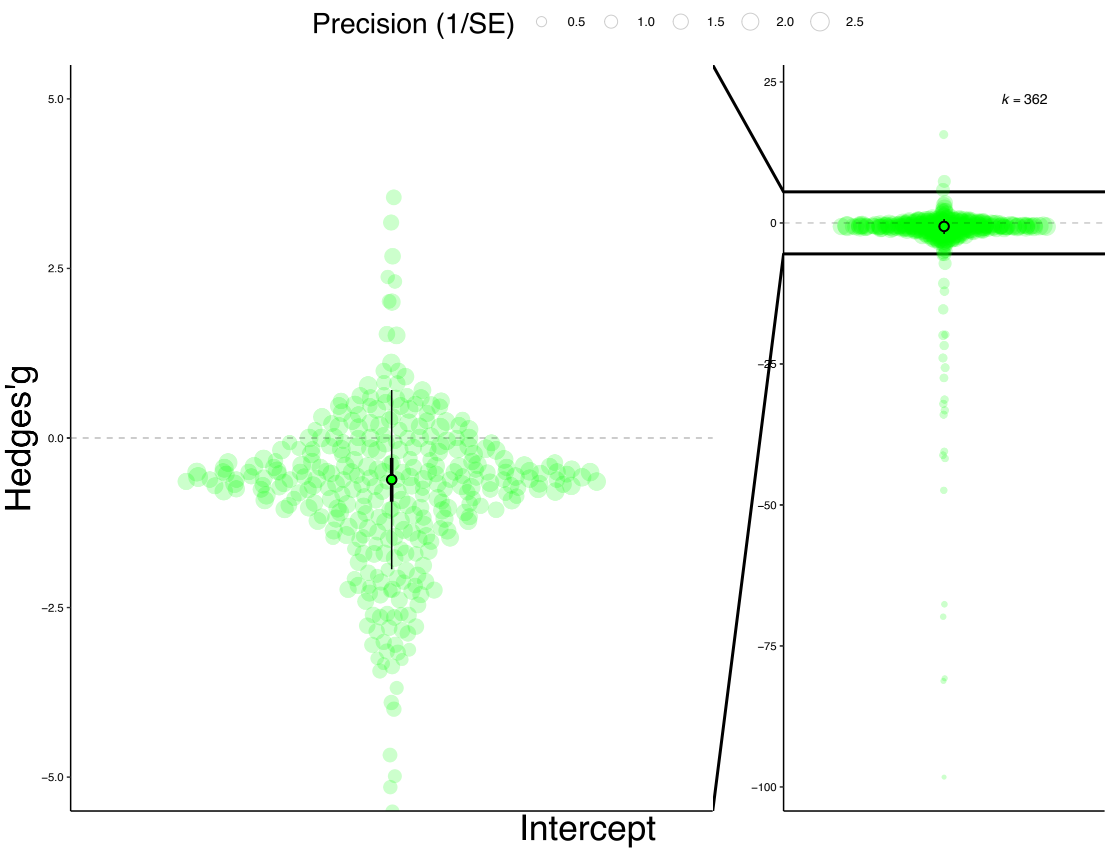

Figure S9: Data distribution of the community studies. The size of the circles represents the precision of each effect size (Hedges' *g*). The precision is calculated through the division of 1 by the standard error. In other words, the bigger the circle, the more precise the effect size. The central circle represents the mean effect size found. The thicker bar associated with this circle represents the 95% confidence interval, and the thinner one represents the prediction interval. When the confidence interval includes zero, we cannot consider that there is a significant effect on the defense of ascidians. K = number of effect sizes found. The more positive the value of Hedges' *g*, the bigger the effect of the defense of ascidians against predators.

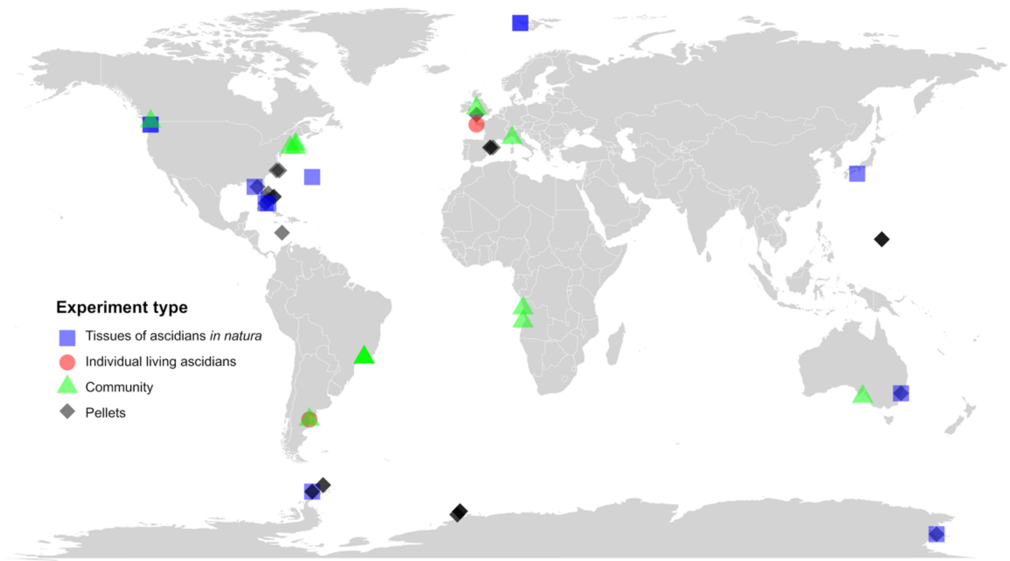

Figure S10: Experiment type and their respective countries of implementation. There is a lack of studies in tropical regions, mainly, in the Southern hemisphere. Ascidian's tissues = studies that tested the palatability or the defenses of ascidians against predators using tissues of ascidians in natura. Pellets = studies that tested the palatability or the defenses of ascidians against predators using either a pellet with crude extract or fractions of ascidians (e.g., aqueous, hexanoic, or methanolic) or its isolated molecules (e.g., Meridianins or Tambjamines). Community = studies that evaluated the effect of predators on benthic communities with ascidians. Individual living ascidians = experiments that used individual living ascidians that were separated from the community, and predation was tested apart from the original community,

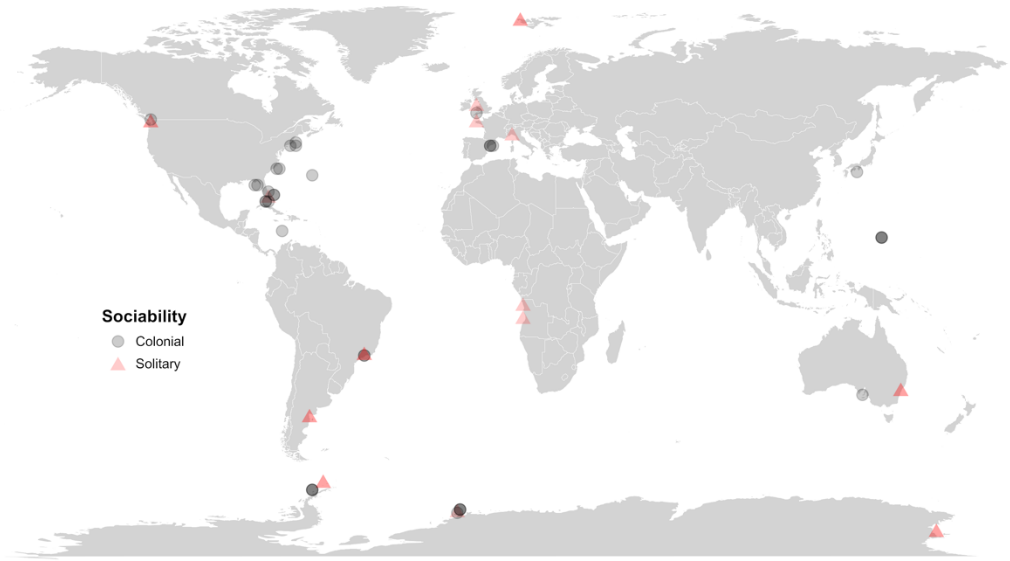

Figure S11: Sociability of ascidians found in both palatability and community studies. There is a lack of studies using solitary ascidians.

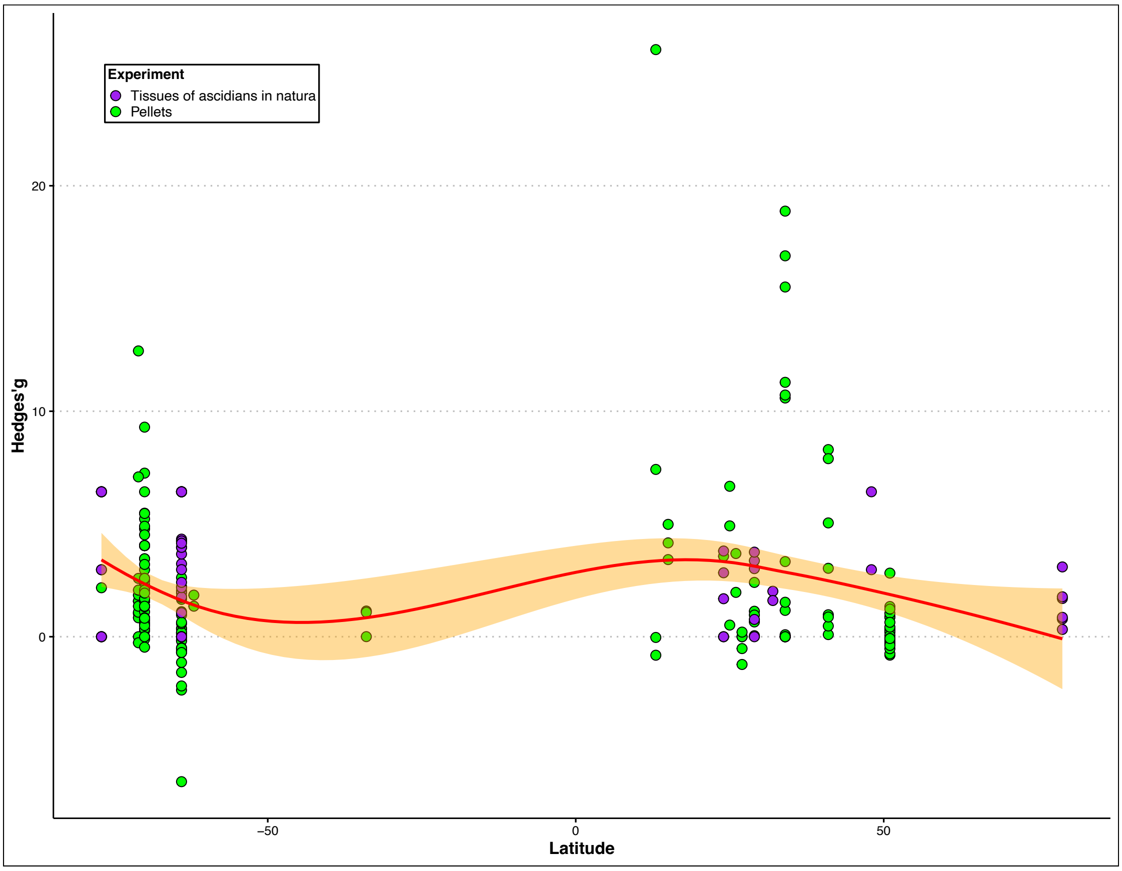

Figure S12: Latitude tests using the type of experiment in palatability studies. One of our initial hypotheses (based on the Latitudinal Biotic Interaction Hypothesis) was that ascidians that possess defenses against predation would present bigger effect sizes when they were at lower latitudes (where predation is more intense) than at higher latitudes (less intense interactions), however, since we found geographic bias in our studies (many studies in the United States and Europe, and few studies in the southern hemisphere, mainly South America and Africa) we did not find anything relevant when we tested our hypothesis, even using the latitude in modulus. As can be seen, there is a big gap in tropical regions.

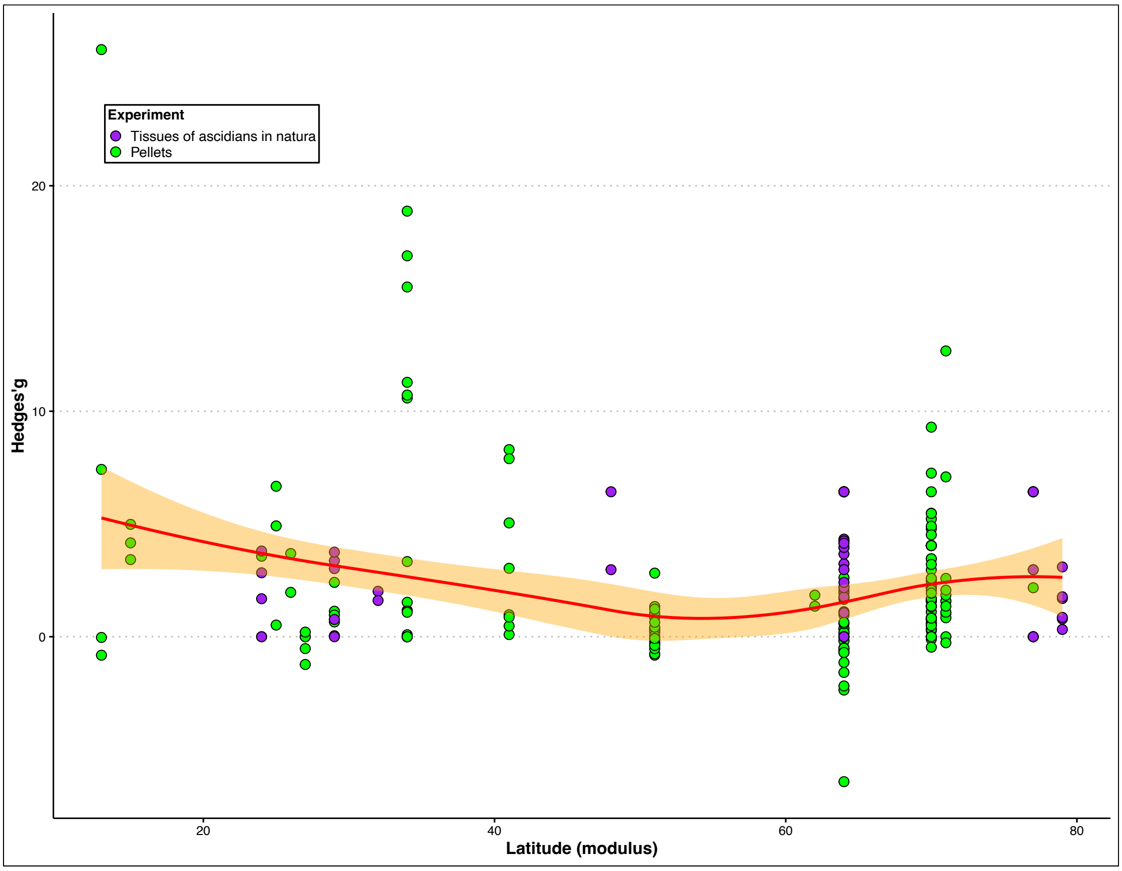

Figure S13: Latitude (modulus) tests using the type of experiment in palatability studies.

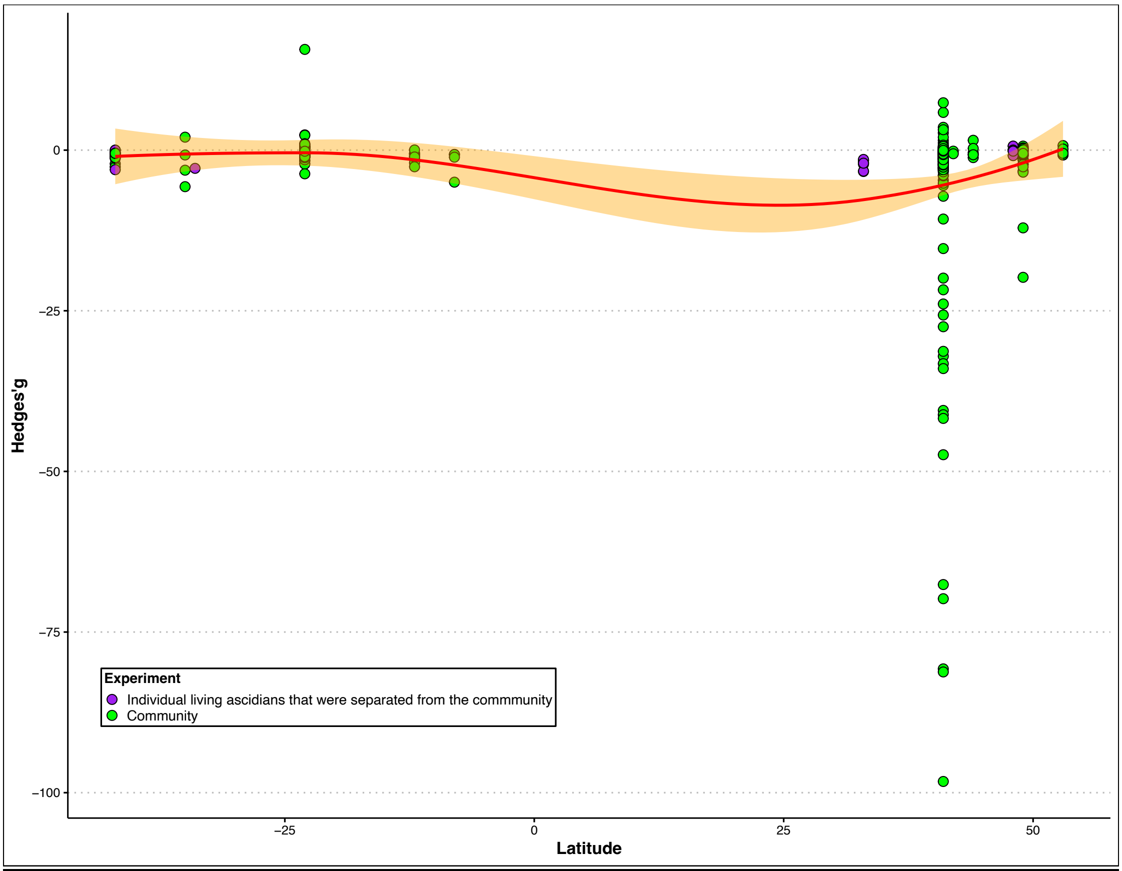

Figure S14: Latitude tests using the type of experiment in community studies.

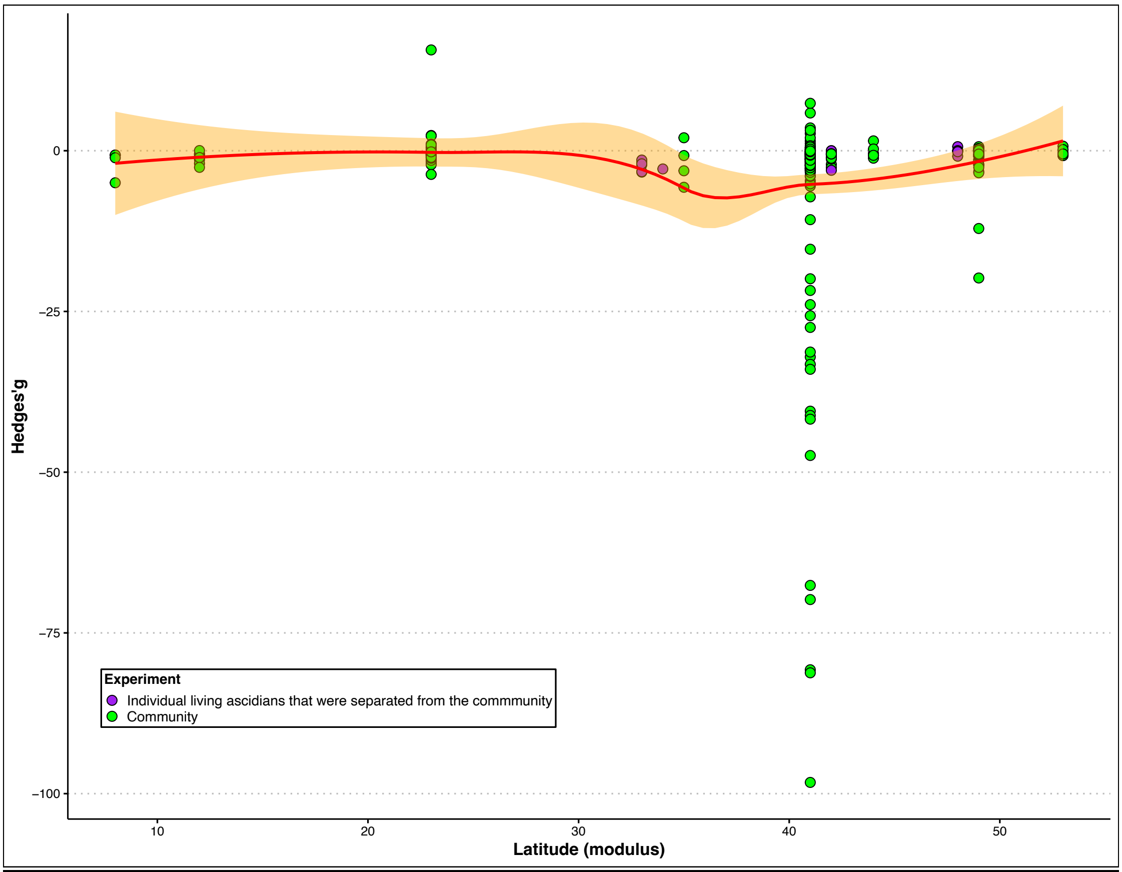

Figure S15: Latitude (modulus) tests using the type of experiment in community studies.

Equation S1:

$$Hedges'g = \frac{Y1 - Y2}{\sqrt{\frac{(n1-1)\cdot s1^2 + (n2-1)\cdot s2^2}{n1+n2-2}}} \cdot J \qquad where\ J = 1 - \frac{3}{4(n1+n2-2)-1}$$

Descriptive statistics used to calculate each Hedges' *g* value:

Y1 = Average of treatment
Y2 = Average of control
n1 = number of replicates of treatment
n2 = number of replicates of control
s1 = standard deviation of treatment
s2 = standard deviation of control

Equation S2:

$$\textit{Odds Ratio} = \frac{A \cdot D}{B \cdot C}$$

Where:

A = Number of eaten control pellets

B = Number of not-eaten control pellets

C = Number of eaten treatment pellets

D = Number of not-eaten treatment pellets