

Supplementary Materials

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Supplementary Table S1. Identification, habitat, and collection sites of the 120 algal, cultures in Kuwait

Culture code	Code K	Collection date	Locality	Habitat or Substratum	Type of sample	Region of Kuwait	Coordinates
K1	K19-4-9-2	5-Apr-19	Doha	Upper subtidal	GE	North	29°22'16.81" N, 47°48'12.019" E
K2	K19-4-28-1	5-Apr-19	Doha	Upper subtidal	GE	North	29°22'15.86" N, 47°48'16.877" E
K3	K19-4-64-1	5-Apr-19	Doha	Shallow tide pool on tidal flat	GE	North	29°22'38.5" N, 47°49'9.62" E
K4	K19-4-67-1	6-Apr-19	Al-Zour	Pebbles, shells among rocks in low intertidal, wave-swept	GE	South	28°41'53.4" N, 48°22'43.6" E
K5	K19-4-98-1	6-Apr-19	Al-Zour	Substratum near bridge foot in low intertidal	GE	South	28°41'33.1" N, 48°22'45.12" E
K6	K19-4-122-3	6-Apr-19	Al-Zour	Substratum among rocks in low intertidal, wave-swept	GE	South	28°41'28.5864" N, 48°22'48.63" E
K7	K19-4-139-1	9-Apr-19	Fintas	Pebbles and shells	GE	Middle	29°10'35.27" N, 48°7'23.56" E
K8	K(19-2)36-1	5-Feb-19	Khiran	Lowermost intertidal in black mussel bed	F	South	28°40'32.1" N, 48°21'19.1" E
K9	K(19-2)35-3	5-Feb-19	Khiran	Rope densely covered with different filamentous algae	F	South	28°40'32.1" N, 48°21'19.1" E
K10	K(19-2)69-3	7-Feb-19	Qaruh	Rope from buoy in upper subtidal	F	South	28°49' N, 48°46'30" E
K11	K(19-2)85-3	7-Feb-19	Umm al-Maradim	Dead coral fragment collected by diver	F	South	28°40'49.8" N, 48°39'00" E
K12	K19-4-61-2	5-Apr-19	Doha	Shallow tide pool on tidal flat	GE	North	29°22'38.5" N, 47°49'9.62" E
K13	K19-4-83-1	6-Apr-19	Al-Zour	Pebbles and shells among rocks, low intertidal, wave-swept	GE	South	28°41'52.7" N, 48°22'43.3" E
K14	K19-4-104-5	6-Apr-19	Al-Zour	Substratum among rocks in low intertidal, wave-swept	GE	South	28°41'28.5864" N, 48°22'48.63" E
K15	K19-4-121-6	6-Apr-19	Al-Zour	Substratum among rocks in low intertidal, wave-swept	F	South	28°41'28.5864" N, 48°22'48.63" E
K16	K19-4-139-5	9-Apr-19	Fintas	Pebbles and shells	GE	Middle	29°10'35.27" N, 48°7'23.56" E
K17	K(19-2-)33-1	5-Feb-19	Khiran	Rope densely covered with different filamentous algae	F	South	28°40'32.1" N, 48°21'19.1" E
K18	K19-4-67-2	6-Apr-19	Al-Zour	Pebbles, shells among rocks in low intertidal, wave-swept	GE	South	28°41'53.4" N, 48°22'43.6" E
K19	K19-4-72-2	6-Apr-19	Al-Zour	Pebbles, shells among rocks in low intertidal, wave-swept	GE	South	28°41'53.4" N, 48°22'43.6" E

Supplementary Table S1. Continued

Culture code	Code K	Collection date	Locality	Habitat or Substratum	Type of sample	Region of Kuwait	Coordinates
K20	K19-4-84-2	6-Apr-19	Al-Zour	Substratum among rocks in low intertidal, wave-swept	GE	South	28°41'52.7" N, 48°22'43.3" E
K21	K19-4-97-3	6-Apr-19	Al-Zour	Pebbles, shells near bridge foot in low intertidal, wave-swept	GE	South	28°41'33.1" N, 48°22'45.12" E
K22	K19-4-107	6-Apr-19	Al-Zour	Substratum among rocks in low intertidal, wave-swept	GE	South	28°41'28.5864" N, 48°22'48.63" E
K23	K19-4-130-1	8-Apr-19	Sabiya	Sheltered tide-pool	F	North	29°43'57.17" N, 48°6'20.96" E
K24	K19-4-159-1	9-Apr-19	Fintas	Exposed rocky platform in low intertidal	S	Middle	29°10'35.27" N, 48°7'23.56" E
K25	K19-4-93-1	6-Apr-19	Al-Zour	Pebbles, shells among rocks in low intertidal, wave-swept	GE	South	28°41'50.53" N, 48°22'43.23" E
K26	K(19-2-)28-2	5-Feb-19	Khiran	Blade of large knife thrown into water, sheltered but with current in lowermost intertidal	GE	South	28°40'32.1" N, 48°21'19.1" E
K27	K19-4-112-2	5-Apr-19	Al-Zour	Pebbles, shells among rocks in low intertidal, wave-swept	GE	South	28°41'50.53" N, 48°22'43.23" E
K28	K19-4-148-5	9-Apr-19	Fintas	<i>Cladophora</i> sp. on exposed rocky platform at upper subtidal	GE	Middle	29°10'35.2668" N, 48°7'23.5632" E
K29	K19-4-156-2	5-Apr-19	Fintas	Pebbles, shells in upper subtidal	GE	Middle	29°10'35.2668" N, 48°7'23.5632" E
K30	K19-4-110-1	6-Apr-19	Al-Zour	Substratum from upper subtidal	GE	South	28°41'25.872" N, 48°23'0.0744" E
K31	K19-4-138-1	9-Apr-19	Fintas	Stone exposed rocky platform in upper subtidal	GE	Middle	29°10'35.267" N, 48°7'23.56" E
K32	K19-4-161-5	9-Apr-19	Fintas	Drifting	GE	Middle	29°10'35.2668" N, 48°7'23.56" E
K33	K19-4-121-1	6-Apr-19	Al-Zour	Bolder in midintertidal, densely covered by <i>Enteromorpha</i> sp. and brown algae	GE	South	28°41'28.59" N, 48°22'48.63" E
K34	K19-4-112-5	6-Apr-19	Al-Zour	Substratum from upper subtidal	GE	South	28°41'25.87" N, 48°23'0.07" E
K35	K19-4-101-3	5-Feb-19	Al-Zour	Substratum near bridge foundation in low intertidal, wave-swept	GE	South	28°41'33.1" N, 48°22'45.13" E
K36	K19-4-143-4	9-Apr-19	Fintas	Pebbles, shells in upper subtidal	GE	Middle	29°10'35.27" N, 48°7'23.56" E
K37	K19-4-115-2	6-Apr-19	Al-Zour	Green algae scraped from concrete, also cyanobacteria in upper subtidal	F	South	28°41'33.1" N, 48°22'45.13" E
K38	K19-4-93-3	6-Apr-19	Al-Zour	Substratum among rocks in low intertidal, wave-swept	GE	South	28°41'50.53" N, 48°22'43.23" E
K39	K19-4-59-2	5-Apr-19	Doha	Shallow tide pool on tidal flat	GE	North	29°22'36.61" N, 47°49'3.7" E
K40	K19-4-45-2	5-Apr-19	Doha	Shallow tide pool on tidal flat	GE	North	29°22'28.21" N, 47°48'41.4" E
K41	K19-4-108-3	6-Apr-19	Al-Zour	Substratum among rocks in low intertidal, wave-swept	GE	South	28°41'28.5864" N, 48°22'48.63" E
K42	K19-4-103-4	6-Apr-19	Al-Zour	Substratum among rocks in low intertidal, wave-swept	GE	South	28°41'28.5864" N, 48°22'48.63" E
K43	K19-4-37-3	5-Apr-19	Doha	Upper subtidal	GE	North	29°22'27.56" N, 47°48'38.73" E

Supplementary Table S1. Continued

Culture code	Code K	Collection date	Locality	Habitat or Substratum	Type of sample	Region of Kuwait	Coordinates
K44	K19-4-1-3	5-Apr-19	Doha	Upper subtidal	GE	North	29°22'27.56" N, 47°48'38.73" E
K45	K19-4-66-2	5-Apr-19	Doha	Shallow tide pool on tidal flat	GE	North	29°22'38.5" N, 47°49'9.62" E
K46	K19-4-70-2	5-Apr-19	Doha	Shallow tide pool on tidal flat	GE	North	29°22'28.22" N, 47°48'41.44" E
K47	K19-4-121-2	6-Apr-19	Al-Zour	Bolder in mid intertidal, densely covered by <i>Enteromorpha</i> sp. and brown algae	GE	South	28°41'28.59" N, 48°22'48.63" E
K48	K19-4-144-1	9-Apr-19	Fintas	Pebbles and shells in upper subtidal	GE	Middle	29°10'35.27" N, 48°7'23.56" E
K49	K(19-2)18-1	5-Feb-19	Khiran	Shallow subtidal (collected by snorkeling), polychaete tube	F	South	28°39'48" N, 48°22'10" E
K50	K(19-2)23-1	5-Apr-19	Doha	Upper subtidal	GE	North	29°22'21.1" N, 47°48'21.9" E
K51	K(19-2)72-3	7-Feb-19	Qaruh	Subtidal from coral at 6 m depth	GE	South	28°49' N, 48°46'30" E
K52	K(19-2)66-1	7-Feb-19	Qaruh	Low intertidal, north-facing vertical surface, artificial hard substratum (old landing)	F	South	28°49'04.6" N, 48°46'32.3" E
K53	K(19-2)171-3	18-Feb-19	Failaka	Drifting from rocky, north-facing shore (black rocks)	F	North	29°28'03.8" N, 48°17'10.1" E
K54	K(19-2)187-3	18-Feb-19	Failaka	Drifting from rocky beach, sand-colored rocks	F	North	29°25'47.9" N, 48°18'01.7" E
K55	K(19-2)192-2	19-Feb-19	Doha	Drifting substratum from base of <i>Ulva</i> sp.	GE	North	29°22'41.4" N, 47°49'19.2" E
K56	K19-4-117-2	6-Apr-19	Al-Zour	Scraped from concrete, also cyanobacteria from upper subtidal	GE	South	28°41'33.1" N, 48°22'45.13" E
K57	K19-4-121-3	6-Apr-19	Al-Zour	Bolder in mid intertidal, densely covered by <i>Enteromorpha</i> sp. and browns	GE	South	28°41'28.59" N, 48°22'48.63" E
K58	K19-4-137-1	8-Apr-19	Doha	Sheltered, dead shells from small oysters from tide-pool	GE	North	29°22'15.89" N, 47°48'16.9" E
K59	K(19-2)29-1	5-Feb-19	Khiran	Blade of large knife thrown into water, sheltered but with current in lowermost intertidal	GE	South	28°40'32.1" N, 48°21'19.1" E
K60	K(19-2)35-1	5-Feb-19	Khiran	Rope densely covered with different filamentous algae in a sheltered site yet with current	GE	South	28°40'32.1" N, 48°21'19.1" E
K61	K(19-2)35-4	5-Feb-19	Khiran	Rope densely covered with different filamentous algae, subtidal	F	South	28°40'32.1" N, 48°21'19.1" E
K62	K(19-2)51-1	6-Feb-19	Al Nuwaiseeb	Beach drift, rocky shore	F	South	28°35'00" N, 48°23'56.8" E
K63	K(19-2)70-1	5-Apr-19	Qaruh	Low intertidal, north-facing vertical surface, artificial hard substratum (old landing)	GE	South	28°49'04.6" N, 48°46'32.3" E
K64	K(19-2)72-1	5-Apr-19	Qaruh	Rope from buoy in upper subtidal	GE	South	29°22'36.612" N, 47°49'3.67" E; 28°49'04.6" N, 48°46'32.3" E
K65	K(19-2)72-2	5-Apr-19	Qaruh	Rope from buoy in upper subtidal	GE	South	29°22'28.22" N, 47°48'41.44" E; 28°49'04.6" N, 48°46'32.3" E

Supplementary Table S1. Continued

Culture code	Code K	Collection date	Locality	Habitat or Substratum	Type of sample	Region of Kuwait	Coordinates
K66	K19-2-169-1	18-Feb-19	Failaka	Loose shell from rocky shore (black rocks)	F	North	29°28'03.8" N, 48°17'10.1" E
K67	K(19-2)176-2	6-Apr-19	Al-Zour	Substratum among rocks in low intertidal, wave-swept	GE	South	28°41'53.35" N, 48°22'43.57" E
K68	K19-4-109-2	6-Apr-19	Al-Zour	Substratum from upper subtidal	GE	South	28°41'25.87" N, 48°23'0.074" E
K69	K(19-2)16-2	6-Apr-19	Al-Zour	Substratum among rocks in low intertidal, wave-swept	GE	South	28°41'53.35" N, 48°22'43.57" E
K70	K(19-2)81-1	7-Feb-19	Umm al-Maradim	Rock from intertidal, small pool	F	South	28°40'49.8" N, 48°39'00" E
K71	K(19-2)176-1	18-Feb-19	Failaka	Rocky tidepool (black rocks)	F	North	29°28'03.8" N, 48°17'10.1" E
K72	K19-4-123-1	6-Apr-19	Al-Zour	Boulder in mid intertidal, densely covered by <i>Enteromorpha</i> sp. and brown algae	GE	South	28°41'28.59" N, 48°22'48.63" E
K73	K19-4-76-2	6-Apr-19	Al-Zour	Substratum among rocks in low intertidal, wave-swept	GE	South	28°41'53.7" N, 48°22'43.3" E
K74	K19-4-78-2	6-Apr-19	Al-Zour	Substratum among rocks in low intertidal, wave-swept	GE	South	28°41'53.7" N, 48°22'43.3" E
K75	K19-4-110-4	6-Apr-19	Al-Zour	Substratum from upper subtidal	GE	South	28°41'25.87" N, 48°23'0.07" E
K76	K19-4-9-1	5-Apr-19	Doha	Upper subtidal	GE	North	29°22'16.81" N, 47°48'12.1" E
K77	K19-4-76-1	6-Apr-19	Al-Zour	Substratum among rocks in low intertidal, wave-swept	GE	South	28°41'53.7" N, 48°22'43.3" E
K78	K(19-2)35-2	5-Feb-19	Khiran	Rope densely covered with different filamentous algae in subtidal	F	South	28°40'32.1" N, 48°21'19.1" E
K79	K(19-2)48-1	6-Feb-19	Al Nuwaiseeb	Beach drift, rocky shore	F	South	28°35'00" N, 48°23'56.8" E
K80	K19-4-141-2	9-Apr-19	Fintas	Pebbles and shells in upper subtidal	GE	Middle	29°10'35.27" N, 48°7'23.56" E
K81	K19-4-152-1	9-Apr-19	Fintas	Drift, rocky shore	F	Middle	29°10'35.27" N, 48°7'23.56" E
K82	K19-4-152-2	9-Apr-19	Fintas	Drift, rocky shore	F	Middle	29°10'35.27" N, 48°7'23.56" E
K83	K(19-2)69-1	7-Feb-19	Qaruh	Rope from buoy in upper subtidal	F	South	28°49' N, 48°46'30" E
K84	K(19-2)72-5	7-Feb-19	Qaruh	Subtidal from coral at 6 m depth	GE	South	28°49' N, 48°46'30" E
K85	K19-4-110-3	6-Apr-19	Al-Zour	Substratum from upper subtidal	GE	South	28°41'25.87" N, 48°23'0.074" E
K86	K(19-2)177-1+2	18-Feb-19	Failaka	Tidepool, rocky shore (black rock)	F	North	29°28'03.8" N, 48°17'10.1" E
K87	K(19-2)245-1	23-Feb-19	Bubiyah	Drifting dark material	F	North	29°36'09.1" N, 48°09'22.9" E
K88	K19-4-86-1	6-Apr-19	Al-Zour	Algae (microscope: cyanobacteria [<i>Lyngbya</i> sp.]) scraped from concrete	F	South	28°41'52.68" N, 48°22'43.23" E
K89	K19-4-115-1	6-Apr-19	Al-Zour	Algae (microscope: cyanobacteria [<i>Lyngbya</i> sp.]) scraped from concrete	F	South	28°41'52.68" N, 48°22'43.23" E
K90	K(19-2)166-3	6-Apr-19	Al-Zour	Algae (microscope: cyanobacteria [<i>Lyngbya</i> sp.]) scraped from concrete	F	South	28°41'52.68" N, 48°22'43.23" E
K91	K19-4-140-1	9-Apr-19	Fintas	Pebbles, shells in upper subtidal	GE	Middle	29°10'35.27" N, 48°7'23.56" E

Supplementary Table S1. Continued

Culture code	Code K	Collection date	Locality	Habitat or Substratum	Type of sample	Region of Kuwait	Coordinates
K92	K19-4-102-1	6-Apr-19	Al-Zour	Substratum among rocks in low intertidal, wave-swept	GE	South	28°41'50.53" N, 48°22'43.23" E
K93	K19-4-1-1	6-Apr-19	Al-Zour	Substratum among rocks in low intertidal, wave-swept	GE	South	28°41'50.53" N, 48°22'43.23" E
K94	K19-4-18-1	5-Apr-19	Doha	Pebbles, shells in upper subtidal	GE	North	28°41'53.6676" N, 48°22'43.3" E
K95	K(19-2)163-2	6-Apr-19	Al-Zour	Substratum among rocks in low intertidal, wave-swept	GE	South	28°41'50.53" N, 48°22'43.23" E
K96	K19-4-131-1	6-Apr-19	Al-Zour	Substratum among rocks in low intertidal, wave-swept	GE	South	28°41'50.53" N, 48°22'43.23" E
K97	K19-4-128-1	6-Apr-19	Al-Zour	Substratum among rocks in low intertidal, wave-swept	GE	South	28°41'33.1" N, 48°22'45.12" E
K98	K19-4-22-1	5-Apr-19	Doha	Pebbles, shells in upper subtidal	GE	North	28°41'53.0664" N, 48°22'43.5" E
K99	K19-4-44-1	6-Apr-19	Al-Zour	Substratum among rocks in low intertidal, wave-swept	GE	South	28°41'33.1" N, 48°22'45.12" E
K100	K19-4-4-1	6-Apr-19	Al-Zour	Substratum among rocks in low intertidal, wave-swept	GE	South	28°41'33.1" N, 48°22'45.12" E
K101	K19-4-106-3	6-Apr-19	Al-Zour	Substratum among rocks in low intertidal, wave-swept	GE	South	28°41'33.1" N, 48°22'45.12" E
K102	K19-4-118-2	6-Apr-19	Al-Zour	Green algae scraped on concrete, also cyanobacteria in upper subtidal	F	South	28°41'33.1" N, 48°22'45.13" E
K103	K19-4-148-2	6-Apr-19	Al-Zour	Substratum among rocks in low intertidal, wave-swept	GE	South	28°41'28.59" N, 48°22'48.63" E
K104	K(19-2)2-1	6-Apr-19	Al-Zour	Substratum among rocks in low intertidal, wave-swept	GE	South	28°41'28.59" N, 48°22'48.63" E
K105	K19-4-141-3	9-Apr-19	Fintas	Pebbles, shells in upper subtidal	GE	Middle	29°10'35.27" N, 48°7'23.56" E
K106	K19-4-122-2	6-Apr-19	Al-Zour	Bolder in mid intertidal, densely covered by <i>Enteromorpha</i> sp. and brown algae	F	South	28°41'28.59" N, 48°22'48.63" E
K107	K19-4-109-4	6-Apr-19	Al-Zour	Substratum from upper subtidal	GE	South	28°41'25.9" N, 48°23'0.1" E
K108	K19-4-105-6	6-Apr-19	Al-Zour	Substratum among rocks in low intertidal, wave-swept	GE	South	28°41'28.59" N, 48°22'48.63" E
K109	K19-4-111-4	6-Apr-19	Al-Zour	Substratum from upper subtidal	GE	South	28°41'25.9" N, 48°23'0.1" E
K110	K(19-2)3-1	6-Apr-19	Al-Zour	Substratum from upper subtidal	GE	South	28°41'25.9" N, 48°23'0.1" E
K111	K(19-2)4-2	3-Feb-19	Kuwait City Sharq	Old thick permanently submerged rope in fishery harbor	F	North	29°23'12.5" N, 47°58'44.6" E
K112	K19-4-84-1	6-Apr-19	Al-Zour	Substratum among rocks in low intertidal, wave-swept	GE	South	28°41'52.7" N, 48°22'43.3" E
K113	K(19-2)69-2	7-Feb-19	Qaruh	Rope from buoy in upper subtidal	F	South	28°49' N, 48°46'30" E
K114	K19-4-140-2	9-Apr-19	Fintas	Pebbles, shells in upper subtidal	GE	Middle	29°10'35.27" N, 48°7'23.56" E
K115	K19-4-139-4	9-Apr-19	Fintas	Pebbles, shells in upper subtidal	GE	Middle	29°10'35.27" N, 48°7'23.56" E

Supplementary Table S1. Continued

Culture code	Code K	Collection date	Locality	Habitat or Substratum	Type of sample	Region of Kuwait	Coordinates
K116	K(19-2)6-1	3-Feb-19	Kuwait City Sharq	Piece of fiber, permanently submerged rope in fishing harbor	GE	North	29°23'12.5" N, 47°58'44.6" E
K117	K19-4-112-1	6-Apr-19	Al-Zour	Substratum from upper subtidal	GE	South	28°41'25.9" N, 48°23'0.1" E
K118	K(19-2)30-1	5-Feb-19	Khiran	Rope densely besets with different fine algae, subtidal	F	South	28°40'32.1" N, 48°21'19.1" E
K198	K(19-2)198-1	21-Feb-19	Kubbar	Muddy sediment, deep subtidal at 35 m depth	GE	South	29°04'18" N, 48°29'30" E
K216	K(19-2)216-1	21-Feb-19	Kubbar	Collected by diving at 10 m depth	F	South	29°04'18" N, 48°29'30" E

GE, Germling Emergence; F, field-collected macroalgal thalli; S, settled zoids.