

**Table S1. List of specimen samples used in this study**

Sample ID	Family	Identification	Sample obtained	GenBank Accessions			Sampling information				
				rbcL	matK	ITS2	Province	Region	Latitude	Longitude	Elevation
MPAD18	Amaranthaceae	Achyranthes aspera	Present Study	OM039336	OM039370	OM039401	Abu Dhabi	Al Ain	24.198867	55.716355	251.445816
MPAD19	Amaranthaceae	Achyranthes aspera	Present Study	OM039337	OM039371	OM039402	Abu Dhabi	Al Ain	24.198867	55.716355	251.445816
MPRK55	Amaranthaceae	Achyranthes aspera	Present Study	OM039338	OM039372	NA	Ras Al-Khaimah	Jais mountain	307	0	0
	Amaranthaceae	Aerva javanica	GenBank	KU365413.1	NA	NA					
	Amaranthaceae	Aerva javanica	GenBank	KX957747.1	NA	NA					
	Amaranthaceae	Aerva javanica	GenBank	NA	KU204823.1	NA					
	Amaranthaceae	Aerva javanica	GenBank	NA	KY000487.1	NA					
MPSH8	Amaranthaceae	Aerva javanica	Present Study	OM039335	OM039369	OM039400	Sharjah	Al-Dhaid	25.2672	55.9137	132.588
MPSH96	Amaranthaceae	Aerva javanica	Present Study	OM039332	OM039366	OM039397	Sharjah	Malaiha mount	25.104472	55.828279	192
MPSH97	Amaranthaceae	Aerva javanica	Present Study	OM039334	OM039368	OM039399	Sharjah	Malaiha mount	25.104472	55.828279	192
MPSH98	Amaranthaceae	Aerva javanica	Present Study	OM039333	OM039367	OM039398	Sharjah	Malaiha mount	25.104472	55.828279	192
	Amaranthaceae	Amaranthus hybridus	GenBank	KX015735.1	NA	NA					
	Amaranthaceae	Amaranthus viridis	GenBank	KX015746.1	NA	NA					
	Amaranthaceae	Atriplex leucoclada	GenBank	KU757314.1	NA	NA					
	Amaranthaceae	Atriplex leucoclada	GenBank	NA	KU757313.1	NA					
	Amaranthaceae	Haloxylon persicum	GenBank	KX015755.1	NA	NA					
MPDB4	Amaranthaceae	Haloxylon salicornicum	Present Study	NA	NA	NA	Dubai	Nazwa	24.990055	55.663009	172
MPSH13	Amaranthaceae	Haloxylon salicornicum	Present Study	OM039322	OM039356	OM039390	Sharjah	Al-Dhaid	25.278	55.8277	115.214
MPSH5	Amaranthaceae	Haloxylon salicornicum	Present Study	OM039321	OM039355	OM039389	Sharjah	Al-Dhaid	25.2672	55.9137	132.588
MPRK1	Amaranthaceae	Salicornia persica	Present Study	OM039318	OM039353	OM039386	Ras Al-Khaimah	North Ras Al-Khaimah	25.884526	56.012964	0
MPUQ7	Amaranthaceae	Salicornia persica	Present Study	OM039317	OM039352	OM039385	Umm Al-Quwain	Al Salamah	25.535792	55.633383	4
	Amaranthaceae	Salsola imbricata	GenBank	KU984715.1	NA	NA					
MPAD8	Amaranthaceae	Salsola imbricata	Present Study	OM039314	OM039349	OM039382	Abu Dhabi	Nahel	24.546081	55.659862	256
MPAJ6	Amaranthaceae	Salsola imbricata	Present Study	OM039316	OM039351	OM039384	Ajman	Wadi Helio 2	25.379895	55.601075	29.555988
MPSH26	Amaranthaceae	Salsola imbricata	Present Study	OM039315	OM039350	OM039383	Sharjah	Al-Dhaid	25.2866	55.9143	131.064
MPSH69	Amaranthaceae	Salsola imbricata	Present Study	OM039313	OM039348	OM039381	Sharjah	Al-Dhaid	25.284444	55.913611	130
MPSH54	Amaranthaceae	Suaeda aegyptiaca	Present Study	OM039307	OM039342	OM039375	Sharjah	Kalba	25.00245	56.349646	2
MPUQ13	Amaranthaceae	Suaeda aegyptiaca	Present Study	OM039308	OM039343	OM039376	Umm Al-Quwain	Umm Al-Quwain	25.538064	55.63793	-14.005587
MPSH38	Amaranthaceae	Suaeda vermiculata	Present Study	OM039305	OM039340	OM039373	Sharjah	Al-Mirgab	25.384603	55.41867	5

MPSH55	Amaranthaceae	Suaeda vermiculata	Present Study	OM039306	OM039341	OM039374	Sharjah	Kalba	25.00245	56.349646	2
MPFJ17	Caryophyllaceae	Paronychia arabica	GenBank	MH185888.1	NA	NA	Fujairah	Maleha-Fujairah road	25.129551	55.96085	188
	Caryophyllaceae	Sclerocephalus arabicus	Present Study	OM039311	OM039346	OM039379					
MPRK78	Caryophyllaceae	Sclerocephalus arabicus	Present Study	OM039312	OM039347	OM039380	Ras Al-Khaimah	Khorfakkan Road	25.206925	55.986036	0
MPSH99	Caryophyllaceae	Sclerocephalus arabicus	Present Study	OM039310	OM039345	OM039378	Sharjah	Malaiha fili rd	25.0733167	55.8475722	163
MPRK60	Chenopodiaceae	Suaeda aegyptiaca	Present Study	OM039309	OM039344	OM039377	Ras Al-Khaimah	Khuzam Rd	25.766428	55.930024	-7.02495
MPAJ2	Gisekiaceae	Gisekia pharnacioides	Present Study	OM039326	OM039360	OM039393	Ajman	Al Amerah	25.379873	55.578797	26.351332
MPAJ3	Gisekiaceae	Gisekia pharnacioides	Present Study	OM039327	OM039361	OM039394	Ajman	Al Amerah	25.379873	55.578797	26.351332
MPAJ4	Gisekiaceae	Gisekia pharnacioides	Present Study	OM039328	OM039362	OM039395	Ajman	Al Amerah	25.379873	55.578797	26.351332
MPAJ5	Gisekiaceae	Gisekia pharnacioides	Present Study	OM039329	OM039363	OM039396	Ajman	Al Amerah	25.379873	55.578797	26.351332
MPSH68	Gisekiaceae	Gisekia pharnacioides	Present Study	OM039325	OM039359	OM039392	Sharjah	Al-Dhaid	25.284444	55.913611	130
MPRK19	Molluginaceae	Glinus lotoides	Present Study	OM039324	OM039358	NA	Ras Al-Khaimah	Wadi Al Qour	24.907628	56.150495	231.403839
MPRK2	Molluginaceae	Glinus lotoides	Present Study	OM039323	OM039357	OM039391	Ras Al-Khaimah	South Ras Al-Khaimah	25.139039	56.013942	222
MPSH16	Polygonaceae	Calligonum comosum	GenBank	KU984716.1	NA	NA	Sharjah	Al-Dhaid	25.278	55.8277	115.214
	Polygonaceae	Calligonum crinitum	GenBank	KX015751.1	NA	NA					
	Polygonaceae	Calligonum crinitum	Present Study	OM039330	OM039364	NA					
MPSH19	Polygonaceae	Calligonum crinitum	Present Study	OM039331	OM039365	NA	Sharjah	Al-Dhaid	25.278	55.8277	115.214
MPSH126	Portulacaceae	Portulaca oleracea	GenBank	KX015736.1	NA	NA	Sharjah	Al Dhaid	25.233875	55.917013	132.802765
	Portulacaceae	Portulaca oleracea	GenBank	KX015737.1	NA	NA					
	Portulacaceae	Portulaca oleracea	GenBank	KX015738.1	NA	NA					
	Portulacaceae	Portulaca oleracea	Present Study	OM039320	NA	OM039388					
MPSH24	Portulacaceae	Portulaca oleracea	Present Study	OM039319	OM039354	OM039387	Sharjah	Al-Dhaid	25.278	55.8277	115.214
MPUQ2	Tamaricaceae	Tamarix aucheriana	GenBank	KX957750.1	NA	NA	Umm Al-Quwain		25.5139	55.547588	0
	Tamaricaceae	Tamarix aucheriana	GenBank	NA	KY000489.1	NA					
MPUQ2	Tamaricaceae	Tamarix nilotica	Present Study	OM039304	OM039339	NA					
Total Accessions				49	38	30					

Abbreviations: NA = Not Available.

**Table S2.** Information on ecological characteristics and medicinal benefits of studied plant species. (References: Jongbloed et al. 2003; Musa et al. 2006; Soltan and Zaki, 2009; Jain et al. 2010; Abiodun, 2010; Wagate et al. 2010; Sakkir et al. 2012; Ghasemi et al. 2013; Zain et al. 2014; Teshome and Feyissa 2015; Abaza et al. 2016; Abdelgawad, 2017; AI Naqbi, 2017; Hanif et al. 2018; Janbaz et al. 2021; Abutbul et al., 2005).

<i>Species</i>	<b>Growth form</b>	<b>Occurrence</b>	<b>Habitat preference</b>	<b>Parts used</b>	<b>Medicinal uses/ activities</b>
<i>Amaranthaceae</i>					
<i>Achyranthes aspera</i>	Small shrub	Not common	Wadi bed, plantations, waste ground	Roots	Scorpion stings
<i>Aerva javanica</i>	Small shrub	Common	Alluvial and gravel plain, mountain, plantations, sand plain, Wadi bed, waste ground	Flowers, Leaves, roots, Whole plant	Anthelmintic, antibacterial, diuretic, and for eye antimony
<i>Amaranthus hybridus</i>	Herbaceous	Not common	Alluvial plain, mountain, plantations, sand plain, Wadi bed, waste ground	Leaves, whole plant	Intestinal bleeding, diarrhea, excessive menstruation, urinary tract infection, kidney and stomach ailments
<i>Amaranthus viridis</i>	Herbaceous	Not common	Plantations, mountain, sand plain, waste ground	Leaves	Scorpion stings, snake bites and itchy skin rash
<i>Atriplex leucoclada</i>	Small shrub	Locally common	Gravel plain, mountain, salt sheets, Wadi bed	Leaves	Emollient, cough and sore throat

<i>Haloxylon persicum</i>	Shrub	Locally common	Sand plain	Aerial parts	Antibacterial and antifungal
<i>Haloxylon salicornicum</i>	Small shrub	Common	Gravel plain, mountain, salt sheets, sand plain	Stems	Ringworm, intestinal problems and for hypoglycemia
<i>Salicornia persica</i>	Herbaceous	Rare	Salt sheets, tidal area	-	Salicornia oil is used in Traditional Medicine: bronchitis, liver swelling, diarrhea, hyperglycemia, anti- inflammation
<i>Salsola imbricata</i>	Small shrub	Common	Alluvial plain, gravel plain, sand plain, waste ground	Whole plant, aerial parts	Vascular hypertension, abdominal distension, constipation indigestion, diarrhea, dysentery, cold, asthma, migraine, headache and inflammations
<i>Suaeda aegyptiaca</i>	Herbaceous	Common	Gravel plain, plantations, sand plain, salt sheets, waste ground	Stem, leaves	Tooth and gum infections, snuff for dizziness, headaches, hysteria, nausea, calming the nervous system and improving poor vision.
<i>Suaeda vermiculata</i>	Small shrub	Common	Salt sheets near coastal regions and Sabkhahs	Stems	Breathing difficulty
<b><i>Caryophyllaceae</i></b>					
<i>Sclerocephalus arabicus</i>	Herbaceous	Common	Alluvial plain, gravel plain, mountain, sand plain, Wadi bed	-	Traditional and folk medicine

### *Gisekiaceae*

<i>Gisekia pharnacioides</i>	Herbaceous	Not common	Sand plain	Whole plant	Swellings, purgative, aperient, anthelmintic, killing roundworms, destroys fat and in malfunctioning of sex organs
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### ***Molluginaceae***

<i>Glinus lotoides</i>	Herbaceous	Rare	Alluvial plain	Aerial parts, Seeds	Anticancer, anti-helminthic, purgative, boils, bilious attack, wounds, pains, and urinary disorders.
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<i>Paronychia arabica</i>	Herbaceous	Locally common	Gravel plain, mountain, plantations, sand plain, Wadi bed	Whole plant	Aphrodisiac
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### ***Polygonaceae***

<i>Calligonum comosum</i>			Sand plain, roadsides	Leaves, stems	Toothache, tonic
<i>Calligonum crinitum</i>	Small shrub	Locally common	Sand plain	Aerial parts	Antioxidant

### ***Portulacaceae***

<i>Portulaca oleracea</i>	Herbaceous	Common	Alluvial plain, gravel plain, plantations, sand plain, waste ground	Leaves, whole plant	Laxative, diuretic, soothe skin, bacterial dysentery, diarrhea, and worm infection.
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### ***Tamaricaceae***

<i>Tamarix aucheriana</i>	Shrub	Locally common	Salt sheets	Aerial parts	Colorectal cancer
<i>Tamarix nilotica</i>	Shrub	Common	Salt sheets, roadsides	Aerial parts, leaves, young branches,	Spleen edema, eyes sore, fever, headaches, ulcer aperient, sudorific, expectorant, carminative, astringent, and diuretic

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**Table S3. List of Primers with their thermal profile used in this study.**

Locus	Primer Id	Sequence (5' to 3')	Thermal Profile		
			Denaturation	Annealing	Extension
rbcL	rbcLa-F	ATGTCACCACAAACAGAGACTAAAGC	94°C	94°C-52°C-72°C	72°C
	rbcLa-R	GTAAAATCAAGTCCACCRG	(1 min)	(60s-60s-90s) (30 cycles)	(7 min)
matK	MatK-1RKIM-f	ACCCAGTCCATCTGGAAATCTTGGTTC	94°C (5 min)	95°C-56°C-72°C (45s-45s-45s) (35 cycles)	72°C (7 min)
	P1		94°C	94°C-55°C-72°C	72°C
	MatK-3FKIM-r	CGTACAGTACTTTTGTGTTTACGAG	(1 min)	(30s-30s-60s) (10 cycles)	(30s-30s-60s) (25 cycles)
	P2		94°C	94°C-48°C-72°C	72°C
	MatK_1326r	TCTAGCACACGAAAGTCGAAGT	(5 min)	(60s-30s-60s) (35 cycles)	(7 min)
ITS2	ITS2-S2F	ATGCGATACTTGGTGTGAAT	94°C	94°C-53°C-72°C	72°C
	ITS4	TCCTCCGCTTATTGATATGC	(1 min)	(60s-60s-90s) (30 cycles)	(7 min)