

Additional file 4: supplementary Tables S3 and S4

Mitochondrial genomes of two parasitic *Cuscuta* species lack clear evidence of horizontal gene transfer and retain unusually fragmented *ccmF_C* genes

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Table S3. Reference plastomes used for annotation and BLASTN searches and their GenBank accession numbers.

Order	Family	Genus	Specific_ep	Accession number
Asterales	Asteraceae	Helianthus	annuus	NC_007977.1
Boraginales	Lennoaceae	Pholisma	arenarium	NC_039719.1
Cucurbitales	Cucurbitaceae	Cucurbita	pepo	NC_038229.1
Ericales	Theaceae	Camellia	petelotii	NC_024661.
Fabales	Fabaceae	Glycine	max	NC_007942.1
Lamiales	Lamiaceae	Ocimum	basilicum	NC_035143.1
Magnoliales	Magnoliaceae	Liriodendron	tulipifera	NC_008326.1
Malvales	Malvaceae	Gossypium	barbadense	NC_008641.1
Poales	Poaceae	Oryza	sativa	NC_008155.1
Proteales	Nelumbonaceae	Nelumbo	nucifera	NC_025339.1
Santalales	Schoepfiaceae	Schoepfia	jasminodora	NC_034228.1
Solanales	Convolvulaceae	Cuscuta	exaltata	NC_009963.1
Solanales	Convolvulaceae	Cuscuta	obtusiflora	NC_009949.1
Vitales	Vitaceae	Vitis	vinifera	NC_007957.1

Table S4. Reference mitogenomes used for annotation, BLASTN searches and phylogenetic analysis and their GenBank accession numbers.

Order	Family	Genus	Specific_ep	Accession number
Alismatales	Araceae	Spirodela	polyrhiza	NC_017840.1
Alismatales	Butomaceae	Butomus	umbellatus	NC_021399.1
Alismatales	Hydrocharitaceae	Stratiotes	aloides	NC_035317.1
Alismatales	Zosteraceae	Zostera	marina	NC_035345.1
Amborellales	Amborellaceae	Amborella	trichopoda	KF754799.1–803.1
Apiales	Apiaceae	Bupleurum	falcatum	NC_035962.1
Apiales	Apiaceae	Daucus	carota	NC_017855.1
Aquifoliales	Aquifoliaceae	Ilex	pubescens	NC_045078.1
Arecales	Arecaceae	Cocos	nucifera	NC_031696.1
Arecales	Arecaceae	Phoenix	dactylifera	NC_016740.1
Asparagales	Amaryllidaceae	Allium	cepa	NC_030100.1
Asparagales	Orchidaceae	Gastrodia	elata	MF070084.1–102.1
Asterales	Asteraceae	Chrysanthemum	boreale	NC_039757.1
Asterales	Asteraceae	Diplostephium	hartwegii	NC_034354.1
Asterales	Asteraceae	Helianthus	annuus	NC_023337.1
Asterales	Asteraceae	Lactuca	saligna	NC_042406.1
Asterales	Asteraceae	Lactuca	sativa	NC_042756.1
Asterales	Asteraceae	Lactuca	serriola	NC_042378.1
Asterales	Asteraceae	Paraprenanthes	diversifolia	MN661146.1
Asterales	Campanulaceae	Codonopsis	lanceolata	NC_037949.1
Asterales	Campanulaceae	Platycodon	grandiflorus	NC_035958.1
Austrobaileyales	Schisandraceae	Schisandra	sphenanthera	NC_042758.1
Brassicales	Bataceae	Batis	maritima	NC_024429.1
Brassicales	Brassicaceae	Arabidopsis	thaliana	NC_037304.1
Brassicales	Brassicaceae	Arabis	alpina	NC_037070.1
Brassicales	Brassicaceae	Boechera	stricta	NC_042143.1
Brassicales	Brassicaceae	Brassica	carinata	NC_016120.1
Brassicales	Brassicaceae	Brassica	juncea	NC_016123.1
Brassicales	Brassicaceae	Brassica	napus	NC_008285.1
Brassicales	Brassicaceae	Brassica	nigra	NC_029182.1
Brassicales	Brassicaceae	Brassica	oleracea	NC_016118.1
Brassicales	Brassicaceae	Brassica	oxyrrhina	AP018041.1
Brassicales	Brassicaceae	Brassica	rapa	NC_016125.1
Brassicales	Brassicaceae	Capsella	rubella	NC_042883.1
Brassicales	Brassicaceae	Eruca	vesicaria	KF442616.1
Brassicales	Brassicaceae	Raphanus	sativus	NC_018551.1

Table S4 continued.

Order	Family	Genus	Specific_ep	Accession number
Brassicales	Brassicaceae	Schrenkiella	parvula	KT988071.2
Brassicales	Brassicaceae	Sinapis	arvensis	NC_031896.1
Brassicales	Brassicaceae	Turritis	glabra	LC325489.1
Brassicales	Caricaceae	Carica	papaya	NC_012116.1
Caryophyllales	Aizoaceae	Sesuvium	portulacastrum	MN683736.1
Caryophyllales	Caryophyllaceae	Silene	conica	JF750490.1–629.1
Caryophyllales	Caryophyllaceae	Silene	latifolia	NC_014487.1
Caryophyllales	Caryophyllaceae	Silene	noctiflora	JF750431.1–489.1
Caryophyllales	Caryophyllaceae	Silene	vulgaris	JF750427.1–30.1
Caryophyllales	Chenopodiaceae	Beta	macrocarpa	NC_015994.1
Caryophyllales	Chenopodiaceae	Beta	vulgaris	NC_002511.2
Caryophyllales	Chenopodiaceae	Chenopodium	quinoa	NC_041093.1
Caryophyllales	Chenopodiaceae	Spinacia	oleracea	NC_035618.1
Caryophyllales	Nepenthaceae	Nepenthes	ventricosa	NC_039531.1
Caryophyllales	Polygonaceae	Fallopia	multiflora	MF611850.1–1.1
Cucurbitales	Cucurbitaceae	Citrullus	lanatus	NC_014043.1
Cucurbitales	Cucurbitaceae	Cucumis	melo	MG947207.1–9.1
Cucurbitales	Cucurbitaceae	Cucumis	sativus	NC_016004.1–6.1
Cucurbitales	Cucurbitaceae	Cucurbita	pepo	NC_014050.1
Cycadales	Cycadaceae	Cycas	taitungensis	NC_010303.1
Ericales	Ericaceae	Monotropa	hypopitys	MK990822.1–3.1
Ericales	Ericaceae	Vaccinium	macrocarpon	NC_023338.1
Ericales	Theaceae	Camellia	sinensis	NC_043914.1
Fabales	Fabaceae	Acacia	ligulata	NC_040998.1
Fabales	Fabaceae	Ammopiptanthus	mongolicus	NC_039660.1
Fabales	Fabaceae	Ammopiptanthus	nanus	MH127920.1
Fabales	Fabaceae	Castanospermum	australe	MK426679.1
Fabales	Fabaceae	Cercis	canadensis	MN017226.1
Fabales	Fabaceae	Glycine	max	NC_020455.1
Fabales	Fabaceae	Glycine	soja	NC_039768.1
Fabales	Fabaceae	Haematoxylum	brasiletto	NC_045040.1
Fabales	Fabaceae	Leucaena	trichandra	NC_039738.1
Fabales	Fabaceae	Libidibia	coriaria	NC_045039.1
Fabales	Fabaceae	Lotus	japonicus	NC_016743.2
Fabales	Fabaceae	Medicago	truncatula	NC_029641.1
Fabales	Fabaceae	Milletia	pinnata	NC_016742.1
Fabales	Fabaceae	Phaseolus	vulgaris	NC_045135.1
Fabales	Fabaceae	Senna	occidentalis	NC_038221.1

Table S4 continued.

Order	Family	Genus	Specific_ep	Accession number
Fabales	Fabaceae	Senna	tora	NC_038053.1
Fabales	Fabaceae	Sophora	flavescens	NC_043897.1
Fabales	Fabaceae	Styphnolobium	japonicum	NC_039596.1
Fabales	Fabaceae	Tamarindus	indica	NC_045038.1
Fabales	Fabaceae	Vicia	faba	KC189947.1
Fabales	Fabaceae	Vigna	angularis	NC_021092.1
Fabales	Fabaceae	Vigna	radiata	NC_015121.1
Fabales	Polygalaceae	Epirixanthes	elongata	MG783394.1
Gentianales	Apocynaceae	Asclepias	syriaca	NC_022796.1
Gentianales	Apocynaceae	Cynanchum	wilfordii	MF611847.1–9.1
Gentianales	Apocynaceae	Rhazya	stricta	NC_024293.1
Geraniales	Geraniaceae	Geranium	maderense	NC_027000.1
Ginkgoales	Ginkgoaceae	Ginkgo	biloba	NC_027976.1
Lamiales	Gesneriaceae	Boea	hygrometrica	NC_016741.1
Lamiales	Gesneriaceae	Haberlea	rhodopensis	MH757117.1
Lamiales	Lamiaceae	Ajuga	reptans	NC_023103.1
Lamiales	Lamiaceae	Salvia	miltiorrhiza	NC_023209.1
Lamiales	Lentibulariaceae	Utricularia	reniformis	NC_034982.1
Lamiales	Oleaceae	Chionanthus	rupicola	MG372115.1
Lamiales	Oleaceae	Hesperelaea	palmeri	NC_031323.1
Lamiales	Oleaceae	Ligustrum	quihoui	MN723864.1
Lamiales	Oleaceae	Olea	europaea	MG372117.1
Lamiales	Orobanchaceae	Castilleja	paramensis	NC_031806.1
Lamiales	Phrymaceae	Mimulus	guttatus	NC_018041.1
Magnoliales	Magnoliaceae	Liriodendron	tulipifera	NC_021152.1
Malpighiales	Euphorbiaceae	Hevea	brasiliensis	AP014526.1
Malpighiales	Euphorbiaceae	Manihot	esculenta	NC_045136.1
Malpighiales	Euphorbiaceae	Ricinus	communis	NC_015141.1
Malpighiales	Salicaceae	Populus	alba	NC_041085.1
Malpighiales	Salicaceae	Populus	davidiana	NC_035157.1
Malpighiales	Salicaceae	Populus	tremula	NC_028096.1
Malpighiales	Salicaceae	Salix	purpurea	NC_029693.1
Malpighiales	Salicaceae	Salix	suchowensis	NC_029317.1
Malvales	Malvaceae	Bombax	ceiba	NC_038052.1
Malvales	Malvaceae	Corchorus	capsularis	NC_031359.1
Malvales	Malvaceae	Corchorus	olitorius	NC_031360.1
Malvales	Malvaceae	Gossypium	arboreum	NC_035073.1

Table S4 continued.

Order	Family	Genus	Specific_ep	Accession number
Malvales	Malvaceae	Gossypium	barbadense	NC_028254.1
Malvales	Malvaceae	Gossypium	davidsonii	NC_035075.1
Malvales	Malvaceae	Gossypium	harknessii	NC_027407.1
Malvales	Malvaceae	Gossypium	hirsutum	NC_027406.1
Malvales	Malvaceae	Gossypium	raimondii	NC_029998.1
Malvales	Malvaceae	Gossypium	thurberi	NC_035074.1
Malvales	Malvaceae	Gossypium	trilobum	NC_035076.1
Malvales	Malvaceae	Hibiscus	cannabinus	NC_035549.1
Myrtales	Lythraceae	Lagerstroemia	indica	NC_035616.1
Myrtales	Myrtaceae	Eucalyptus	grandis	NC_040010.1
Nymphaeales	Nymphaeaceae	Nymphaea	colorata	NC_037468.1
Pinales	Pinaceae	Pinus	Taeda	NC_039746.1
Poales	Poaceae	Aegilops	speltoides	NC_022666.1
Poales	Poaceae	Bambusa	oldhamii	EU365401.1
Poales	Poaceae	Cynodon	dactylon	MK175054.1
Poales	Poaceae	Eleusine	indica	NC_040989.1
Poales	Poaceae	Hordeum	vulgare	MN127975.1
Poales	Poaceae	Lolium	perenne	JX999996.1
Poales	Poaceae	Oryza	coarctata	MG429050.1
Poales	Poaceae	Oryza	minuta	NC_029816.1
Poales	Poaceae	Oryza	rufipogon	NC_013816.1
Poales	Poaceae	Oryza	sativa	NC_007886.1
Poales	Poaceae	Saccharum	officinatum	LC107874.1-5.1
Poales	Poaceae	Sorghum	bicolor	NC_008360.1
Poales	Poaceae	Tripsacum	dactyloides	NC_008362.1
Poales	Poaceae	Triticum	aestivum	NC_036024.1
Poales	Poaceae	Triticum	timopheevii	NC_022714.1
Poales	Poaceae	Zea	luxurians	NC_008333.1
Poales	Poaceae	Zea	mays	NC_007982.1
Poales	Poaceae	Zea	perennis	NC_008331.1
Proteales	Nelumbonaceae	Nelumbo	nucifera	NC_030753.1
Rosales	Cannabaceae	Cannabis	sativa	NC_029855.1
Rosales	Moraceae	Morus	notabilis	NC_041177.1
Rosales	Rhamnaceae	Ziziphus	jujuba	NC_029809.1
Rosales	Rosaceae	Eriobotrya	japonica	NC_045228.1
Rosales	Rosaceae	Malus	hupehensis	KR534606.1
Rosales	Rosaceae	Malus	x-domestica	NC_018554.1

Table S4 continued.

Order	Family	Genus	Specific_ep	Accession number
Rosales	Rosaceae	Prunus	avium	NC_044768.1
Rosales	Ulmaceae	Hemiptelea	dauidii	MN061667.1
Santalales	Balanophoraceae	Lophophytum	mirabile	KU992322.1–80.1; KX792461.1
Santalales	Viscaceae	Viscum	album	NC_029039.1
Santalales	Viscaceae	Viscum	scurruloideum	KT022222.1–3.1
Sapindales	Anacardiaceae	Spondias	mombin	NC_045035.1
Sapindales	Anacardiaceae	Spondias	tuberosa	NC_045036.1
Sapindales	Nitrariaceae	Peganum	harmala	MK431826.1
Sapindales	Rutaceae	Citrus	sinensis	NC_037463.1
Sapindales	Sapindaceae	Xanthoceras	sorbifolium	MK333231.1
Saxifragales	Cynomoriaceae	Cynomorium	coccineum	KX270753.1–801.1
Solanales	Convolvulaceae	Ipomoea	nil	NC_031158.1
Solanales	Solanaceae	Capsicum	annuum	NC_024624.1
Solanales	Solanaceae	Hyoscyamus	niger	NC_026515.1
Solanales	Solanaceae	Nicotiana	attenuata	NC_036467.1
Solanales	Solanaceae	Nicotiana	sylvestris	NC_029805.1
Solanales	Solanaceae	Nicotiana	tabacum	NC_006581.1
Solanales	Solanaceae	Physochlaina	orientalis	NC_044153.1
Solanales	Solanaceae	Solanum	commersonii	MF989960.1–1.1
Solanales	Solanaceae	Solanum	lycopersicum	NC_035963.1
Solanales	Solanaceae	Solanum	pennellii	NC_035964.1
Solanales	Solanaceae	Solanum	tuberosum	MN104801.1–3.1
Vitales	Vitaceae	Vitis	vinifera	NC_012119.1
Welwitschiales	Welwitschiaceae	Welwitschia	mirabilis	NC_029130.1