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Supplementary Table S1. Data from samples and sequencing of RNA extraction from tissues of *Carpotroche brasiliensis*.

SAMPLE	TISSUE	SEX	X	Y
1	flower bud	♀	474516	8442692
6	flower bud	♀	474488	8442827
10	flower bud	♀	474485	8442837
25	flower bud	♀	474516	8442692
26	flower bud	♀	474503	8442674
67	flower bud	♀	474480	8442830
2	flower bud	♂	474488	8442641
5	flower bud	♂	474494	8442646
14	flower bud	♂	474497	8442662
17	flower bud	♂	474481	8442821
28	flower bud	♂	474480	8442825
35	flower bud	♂	474484	8442842
7	flower	♀	474485	8442837
29	flower	♂	474488	8442641
39	big fruit	---	474480	8442830
46	small fruit	---	474484	8442845
30	small fruit	---	474493	8442731
50	medium fruit	---	474503	8442674
65	leaf	♀	474489	8442663
72	leaf	♂	474482	8442880
74	root	seedling	474497	8442727
21	root	seedling	474482	8442863
78	small seed	---	474484	8442845
81	big seed	---	474498	8442677

Supplementary Table S2. Assembly statistics of *C. brasiliensis* transcriptome by RNA-Seq and TransDecoder

Assembly statistics	RNA-Seq	TransDecoder
Number of unigenes	263,562	12,908
Total transcripts	312,768	38,841
Total size (bp)	1,733,379,762	34,444,803
Medium contig length (bp)	340	708
Average length (bp)	554,34	886,82
N50 length (bp)	637	1122
GC contents (%)	42.68	46.46

Supplementary Table S3. Assessment of transcriptome quality by BUSCO.

	<i>Arabidopsis</i> Embryophyta	<i>Solanum lycopersicum</i> ; Solanaceae
Complete BUSCOs	1059 (73,5%)	1516 (49,6%)
Complete and single-copy BUSCOs	572	721
Complete and duplicated BUSCOs	487	795
Fragmented BUSCOs	161	273
Missing BUSCOs	220	1263

Supplementary Table S4. Enzymes involved in fatty acid biosynthesis and catabolism identified by the annotation of *Carpotroche brasiliensis* transcriptome.

Enzyme	Symbol	Interprot	EC number	# Of protein
Fatty acid biosynthesis				
Biotin carboxylase	BC	IPR005482	6.3.4.14	8
Acetyl-coenzyme A carboxylase carboxyl transferase subunit	CT	IPR001095	6.4.1.2	24
Malonyl-CoA:ACP transacylase	MAT	IPR016036	2.3.1.39	5
3-Oxoacyl-[acyl-carrier-protein] synthase I	KASI		2.3.1.41	5
3-Oxoacyl-[acyl-carrier-protein] synthase II	KASII	IPR017568	2.3.1.179	2
3-Oxoacyl-[acyl-carrier-protein] synthase III	KASIII	IPR013747	2.3.1.180	3
3-Oxoacyl-[acyl-carrier-protein] reductase	KAR	IPR011284	1.1.1.100	39
3- Hydroxyacyl-ACP dehydratase	HAD	IPR010084	4.2.1.59	10
Enoyl-(Acyl carrier protein) reductase	EAR	IPR014358	1.3.1.9	17
Acyl-ACP thioesterase	FAT	IPR002864	3.1.2.14	7
Very-long-chain fatty acid elongation				
Long chain acyl-CoA synthetase	LACS		6.2.1.3	80
3-Hydroxyacyl-CoA dehydrogenase	HCD	IPR006108	4.2.1.134	20
Fatty acid desaturation				
Stearoyl-ACP desaturase	SAD, D ⁹ D		1.14.19.2	4
Δ ⁹ - desaturase	FAD5, D ⁹ D		1.14.19.1	2
TAG biosynthesis				
1-Acyl-sn-glycerol-3-phosphate acyltransferase	LPAAT		2.3.1.51	11
Phosphatidate phosphatase	PAP		3.1.3.4	19
Diacylglycerol O-acyltransferase	DGAT	IPR027251	2.3.1.20	8
Phospholipid:diacylglycerol acyltransferase	PDAT	IPR003386	2.3.1.158	2
Phosphatidylcholine:diacylglycerol cholinephosphotransferase	PDCT		2.7.8.2	3
Lysophospholipid acyltransferase	LPCAT		2.3.1.23	2
Phospholipase A	PLA	IPR033113	3.1.1.4	39
Lipid storage				
Oleosin	Oleosin	—	—	4
Caleosin	Caleosin	—	—	3