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*Supplement of*

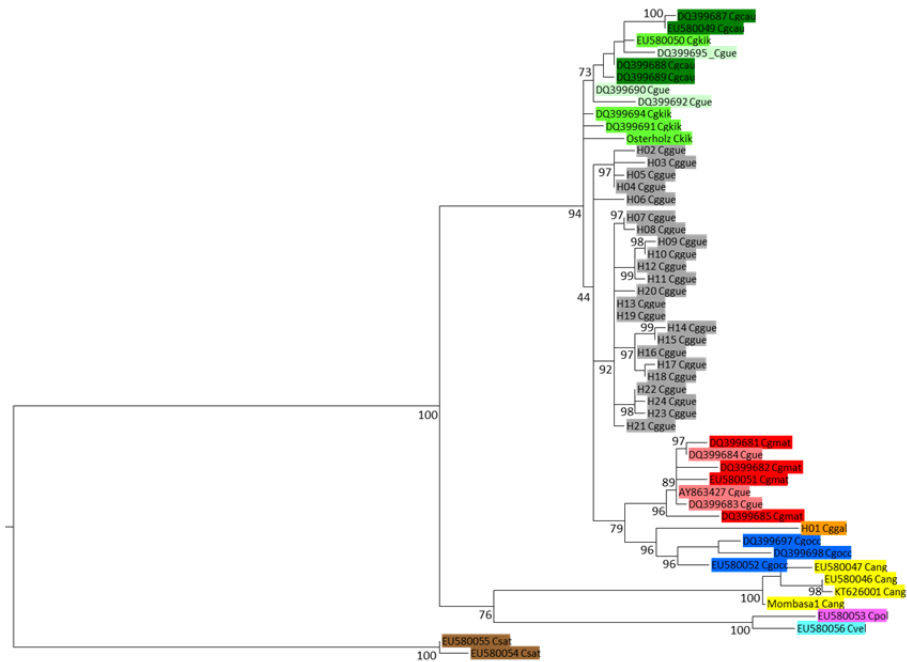
## **Is *Colobus guereza gallarum* a valid endemic Ethiopian taxon?**

**Dietmar Zinner et al.**

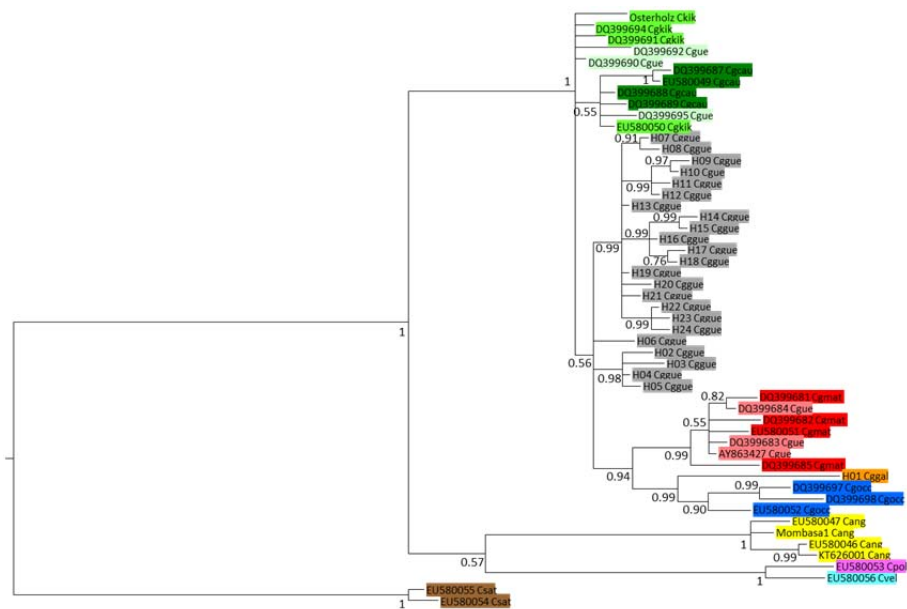
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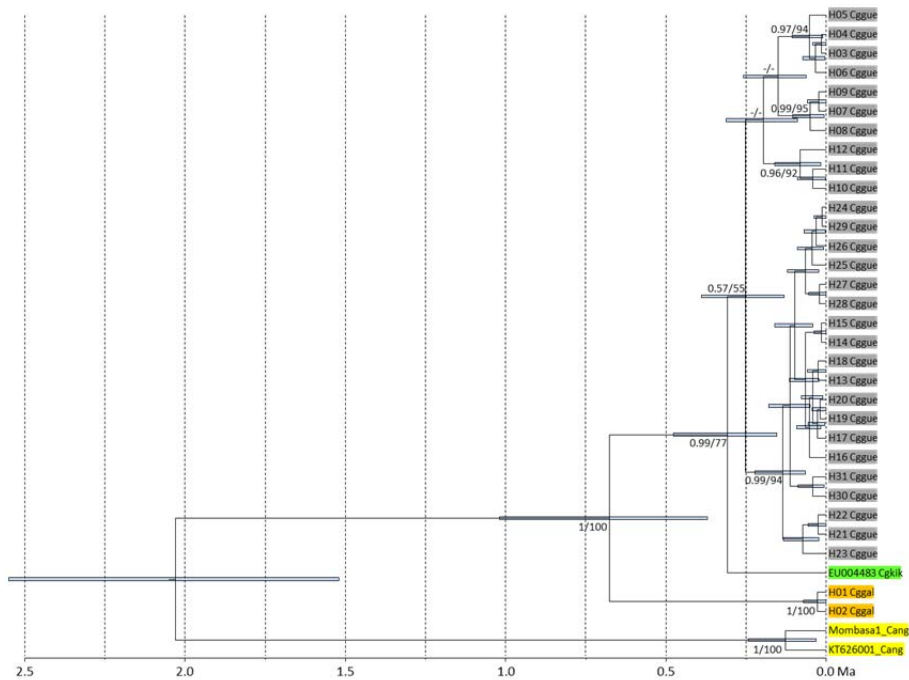
Supplement Material



**Figure S1a.** ML tree (NADH). Csat = *Colobus satanas*, Cvel = *C. vellerosus*, Cpol = *C. polykomos*, Cang = *C. angolensis*, Cgocc = *C. guereza occidentalis*, Cggal = *C. g. gallarum*, Cgmat = *C. g. matschiei*, Cggue = *C. g. guereza*, Cgkik = *C. g. kikuyuensis*, Cgcau = *C. g. caudatus*, Cgue = *C. guereza* ssp.. Node labels refer to ML BS values.



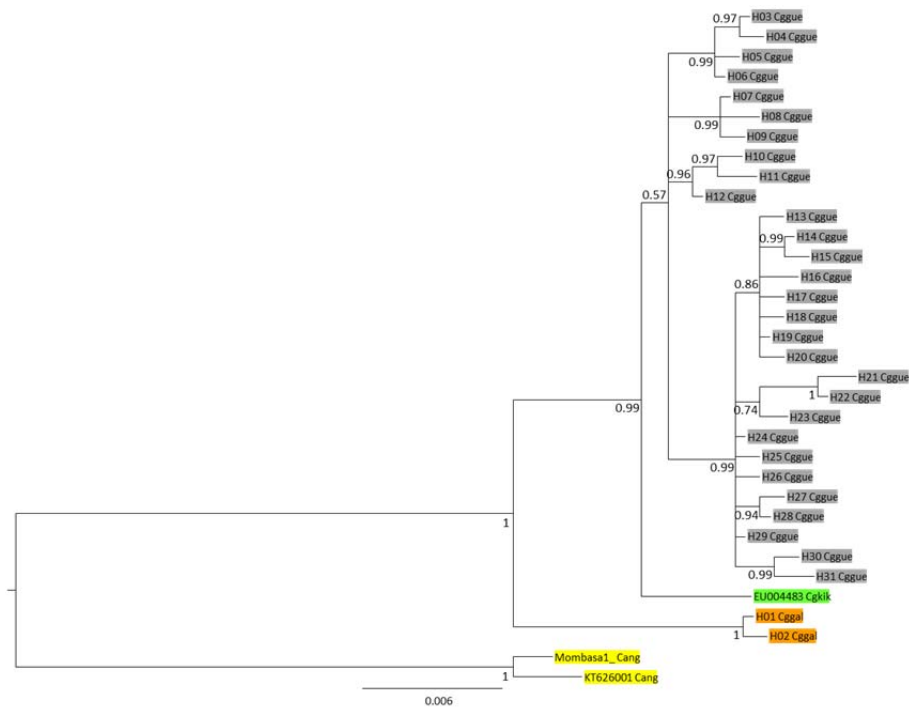
**Figure S1b.** Bayesian tree (NADH). Csat = *Colobus satanas*, Cvel = *C. vellerosus*, Cpol = *C. polykomos*, Cang = *C. angolensis*, Cgocc = *C. guereza occidentalis*, Cggal = *C. g. gallarum*, Cgmat = *C. g. matschiei*, Cggue = *C. g. guereza*, Cgkik = *C. g. kikuyuensis*, Cgcau = *C. g. caudatus*, Cgue = *C. guereza* ssp.. Node labels refer to Bayesian PPs.



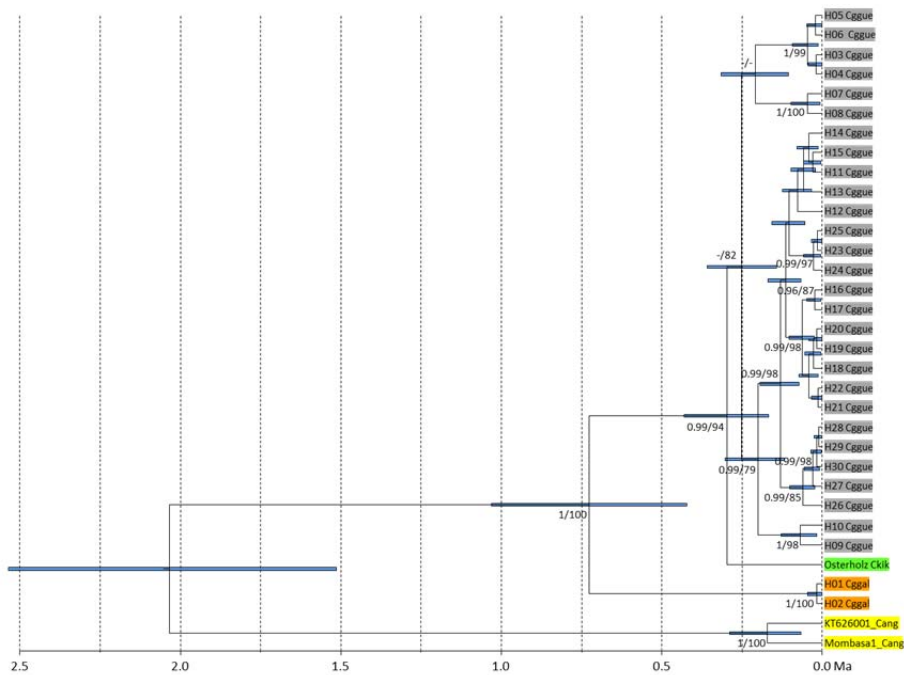
**Figure S2a.** Ultrametric tree showing phylogenetic relationships and divergence times of *Colobus* mtDNA lineages (based on 1140 bp of *cytb*). Tip labels refer to *Colobus* haplotypes (see Table S1). Cang = *C. angolensis*, Cggal = *C. g. gallarum*, Cggue = *C. g. guereza*, Cgkik = *C. g. kikuyuensis*. Node labels refer to ML BS and Bayesian PP values. The time scale below the tree indicates million years ago.



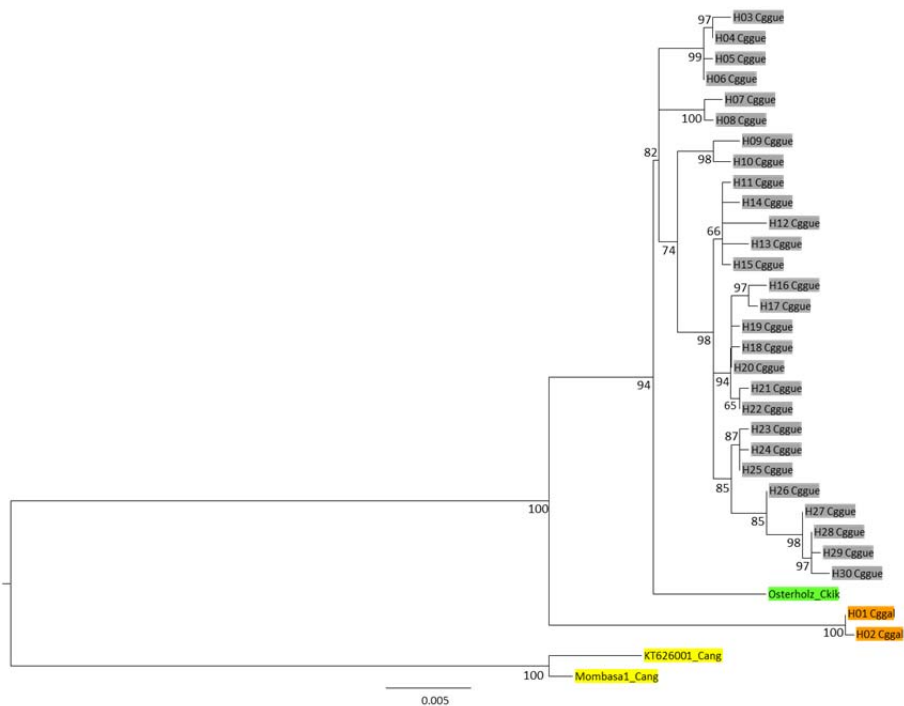
**Figure S2b.** ML tree (*cytb*). Csat = *Colobus satanas*, Cvel = *C. vellerosus*, Cpol = *C. polykomos*, Cang = *C. angolensis*, Cgocc = *C. guereza occidentalis*, Cggal = *C. g. gallarum*, Cgmat = *C. g. matschiei*, Cggue = *C. g. guereza*, Cgkik = *C. g. kikuyuensis*, Cgcau = *C. g. caudatus*, Cgue = *C. guereza* ssp.. Node labels refer to ML BS values.



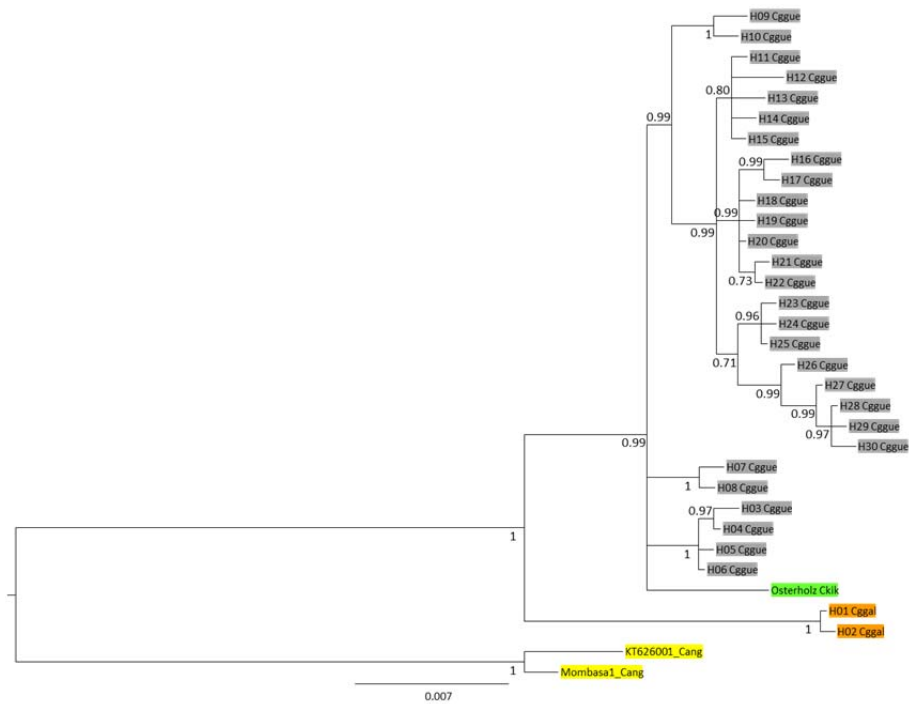
**Figure S2c.** Bayesian tree (cytb). Csat = *Colobus satanas*, Cvel = *C. vellerosus*, Cpol = *C. polykomos*, Cang = *C. angolensis*, Cgocc = *C. guereza occidentalis*, Cggal = *C. g. gallarum*, Cgmat = *C. g. matschiei*, Cggue = *C. g. guereza*, Cgkik = *C. g. kikuyuensis*, Cgcau = *C. g. caudatus*, Cgue = *C. guereza* ssp.. Node labels refer to Bayesian PPs.



**Figure S3a.** Ultrametric tree showing phylogenetic relationships and divergence times of *Colobus* mtDNA lineages (based on concatenated 1930 bp of NADH and cytb). Tip labels refer to *Colobus* haplotypes (see Table S1). Cang = *C. angolensis*, Cggal = *C. g. gallarum*, Cggue = *C. g. guereza*, Cgkik = *C. g. kikuyuensis*. Node labels refer to ML BS and Bayesian PP values. The time scale below the tree indicates million years ago.



**Figure S3b.** ML tree (concatenated). Csat = *Colobus satanas*, Cvel = *C. vellerosus*, Cpol = *C. polykomos*, Cang = *C. angolensis*, Cgocc = *C. guereza occidentalis*, Cggal = *C. g. gallarum*, Cgmat = *C. g. matschiei*, Cggue = *C. g. guereza*, Cgkik = *C. g. kikuyuensis*, Cgcga = *C. g. caudatus*, Cgue = *C. guereza* ssp.. Node labels refer to ML BS values.



**Figure S3c.** Bayesian tree (concatenated). Csat = *Colobus satanas*, Cvel = *C. vellerosus*, Cpol = *C. polykomos*, Cang = *C. angolensis*, Cgocc = *C. guereza occidentalis*, Cggal = *C. g. gallarum*, Cgmat = *C. g. matschiei*, Cggue = *C. g. guereza*, Cgkik = *C. g. kikuyuensis*, Cgcau = *C. g. caudatus*, Cgue = *C. guereza* ssp.. Node labels refer to Bayesian PPs.

**Table S1.** Taxonomy, geographical origin (coordinates in decimal degrees) and haplotype assignments of *Colobus* samples and respective NCBI Accession numbers per haplotype.

taxon	ID	Country	Site	Lat	Long	NADH hap	Acc Num	cytb hap	Acc Num	comb hap
<i>C. satanas</i>		GNQ	Bioko Island			og	EU580054			
<i>C. satanas</i>		GNQ	Bioko Island			og	EU580055			
<i>C. vellerosus</i>		GHA	Boabeng-Fiema			og	EU580056			
<i>C. polykomos</i>		CIV	Tai National Park			og	EU580053			
<i>C. angolensis</i>	Mombasa1	KEN	s of Mombasa	-4.3353	39.5689	og	MK415322	og1	MK415348	og1
<i>C. angolensis</i>		KEN						og1	HQ859372	
<i>C. angolensis</i>			zoo, <i>palliatus</i> ?			og	EU580047			
<i>C. angolensis</i>			unknown, zoo			og	EU580046			
<i>C. angolensis</i>			<i>palliatus</i> ?			og	KT626001	og2	KT626001	og2
<i>C. angolensis</i>		KEN						og2	HQ859342	
<i>C. g. matschiei</i> ?							AY863427			
<i>C. g. matschiei</i>		KEN	Kakamega Forest				EU580051			
<i>C. g. matschiei</i>			zoo?				DQ399681			
<i>C. g. matschiei</i>			zoo?				DQ399682			
<i>C. g. matschiei</i>			zoo?				DQ399685			
<i>C. g. matschiei</i> ?			zoo?				DQ399683			
<i>C. g. matschiei</i> ?			zoo?				DQ399684			
<i>C. g. occidentalis</i>			zoo?				DQ399697			
<i>C. g. occidentalis</i>			zoo?				DQ399698			
<i>C. g. occidentalis</i>		CMR	unknown locality				EU580052			
<i>C. g. caudatus</i> ?			zoo, <i>caudatus</i> ?				EU580049			
<i>C. g. caudatus</i> ?			zoo?				DQ399690			
<i>C. g. caudatus</i> ?			zoo?				DQ399692			
<i>C. g. caudatus</i> ?			zoo?				DQ399695			
<i>C. g. caudatus</i>			zoo?				DQ399687			
<i>C. g. caudatus</i>			zoo?				DQ399688			
<i>C. g. caudatus</i>			zoo?				DQ399689			
<i>C. g. kikuyuensis</i> ?			zoo, <i>kikuyuensis</i> ?				EU580050			
<i>C. g. kikuyuensis</i>			zoo?				DQ399691			
<i>C. g. kikuyuensis</i>			zoo?				DQ399694			
<i>C. g. kikuyuensis</i>	Osterholz		zoo, <i>kikuyuensis</i> ?				MK415323		EU004483	og
<i>C. g. gallarum</i>	ID1	ETH	Adas Mts Forest	9.3087	41.2449	h01	MK415324	h01	MK415349	h01
<i>C. g. gallarum</i>	ID2	ETH	Adas Mts Forest	9.3098	41.2453	h01		h01		h01

<i>C. g. gallarum</i>	ID3	ETH	Adas Mts Forest	9.3106	41.2453	h01		h02	MK415350	h02
<i>C. g. gallarum</i>	ID4	ETH	Adas Mts Forest	9.3106	41.2453	h01		h01		h01
<i>C. g. gallarum</i>	C1	ETH	Kuni-Muktart	9.0208	40.8402	h01		h01		h01
<i>C. g. gallarum</i>	C2	ETH	Kuni-Muktart	9.0258	40.8567	h01		h01		h01
<i>C. g. gallarum</i>	C3	ETH	Kuni-Muktart	9.0291	40.8424	h01				
<i>C. g. gallarum</i>	C4	ETH	Kuni-Muktart	9.0292	40.8550	h01		h01		h01
<i>C. g. gallarum</i>	C5	ETH	Kuni-Muktart	9.0106	40.8476	h01		h01		h01
<i>C. g. gallarum</i>	C6	ETH	Kuni-Muktart	9.0172	40.8303	h01		h01		h01
<i>C. g. guereza</i>	Ars07	ETH	Arussi	7.9853	39.6784	h02	MK415325	h03	MK415351	h03
<i>C. g. guereza</i>	Ars12	ETH	Arussi	7.9853	39.6784	h02		h03		h03
<i>C. g. guereza</i>	SH17	ETH	Kama1	7.3172	36.0702	h03	MK415326			
<i>C. g. guereza</i>	Ars04	ETH	Arussi	7.9853	39.6784	h04	MK415327	h05	MK415353	h05
<i>C. g. guereza</i>	Bns01	ETH	Benessa	6.3121	38.5000	h04		h03		h04
<i>C. g. guereza</i>	Bns08	ETH	Benessa	6.3121	38.5000	h04				
<i>C. g. guereza</i>	SH27	ETH	Boginda1	7.5256	36.1180	h04				
<i>C. g. guereza</i>	SH24	ETH	Kama1	7.3171	36.0704	h04				
<i>C. g. guereza</i>	Wondo26	ETH	Wondo Genet	7.0209	38.6362	h04		h06	MK415354	h06
<i>C. g. guereza</i>	Wondo31	ETH	Wondo Genet	7.0209	38.6362	h04		h06		h06
<i>C. g. guereza</i>	SH31	ETH	Yayoo	8.2895	35.6091	h04				
<i>C. g. guereza</i>	SH02	ETH	Boginda2	7.5094	36.1302	h05	MK415328			
<i>C. g. guereza</i>	SH13	ETH	Boginda2	7.5114	36.1217	h05				
<i>C. g. guereza</i>	SH07	ETH	Kayakela1	7.3202	36.2224	h06	MK415329	h11	MK415359	h07
<i>C. g. guereza</i>	Sha94	ETH	Shako, Bemch Maji	6.5000	35.0000	h06		h10	MK415358	h08
<i>C. g. guereza</i>	SH_ManII	ETH	Managesha II	8.9668	38.5455	h07	MK415330			
<i>C. g. guereza</i>	SH_ManIII	ETH	Managesha III	8.9668	38.5455	h07				
<i>C. g. guereza</i>	Bure25	ETH	Bure/Agew Mider	11.0180	36.7628	h08	MK415331	h18	MK415366	h13
<i>C. g. guereza</i>	Har06	ETH	Harena	6.6827	39.8366	h09	MK415332	h22	MK415370	h29
<i>C. g. guereza</i>	Har07	ETH	Harena	6.6827	39.8366	h09		h22		h29
<i>C. g. guereza</i>	Yir09	ETH	Yirgalem	9.7213	37.5724	h10	MK415333	h21	MK415369	h30
<i>C. g. guereza</i>	Bns02	ETH	Benessa	6.3121	38.5000	h10		h22		h28
<i>C. g. guereza</i>	Dale02	ETH	Dale Woreda, Kaffa	6.4499	38.2220	h10		h22		h28
<i>C. g. guereza</i>	SH36	ETH	Harena 1	6.7476	39.7139	h10				
<i>C. g. guereza</i>	Yir12	ETH	Yirgalem	9.7213	37.5724	h10		h21		h30
<i>C. g. guereza</i>	Jma06	ETH	Jimma	7.6679	36.8861	h11	MK415334	h07	MK415355	h09
<i>C. g. guereza</i>	Jma67	ETH	Jimma	7.6679	36.8861	h11		h07		h09
<i>C. g. guereza</i>	Jma91	ETH	Jimma	7.6679	36.8861	h11		h07		h09
<i>C. g. guereza</i>	SH11	ETH	Boginda2	7.5117	36.1211	h12	MK415335	h22		h27



<i>C. g. guereza</i>	SH12	ETH	Boginda2	7.5112	36.1213	h12		h22		h27
<i>C. g. guereza</i>	SH18	ETH	Kama2	7.3193	36.0870	h13	MK415336			
<i>C. g. guereza</i>	SH21	ETH	Kama1	7.3110	36.0752	h14	MK415337			
<i>C. g. guereza</i>	SH08	ETH	Kayakela2	7.3233	36.2153	h15	MK415338			
<i>C. g. guereza</i>	SH03	ETH	Boginda2	7.5128	36.1206	h16	MK415339	h26	MK415374	h18
<i>C. g. guereza</i>	Bure28	ETH	Bure/Agew Mider	11.0180	36.7628	h16		h31	MK415379	h16
<i>C. g. guereza</i>	Bure32	ETH	Bure/Agew Mider	11.0180	36.7628	h16		h31		h16
<i>C. g. guereza</i>	Bure35	ETH	Bure/Agew Mider	11.0180	36.7628	h16		h31		h16
<i>C. g. guereza</i>	Bure37	ETH	Bure/Agew Mider	11.0180	36.7628	h16		h31		h16
<i>C. g. guereza</i>	Din1a	ETH	Dinibira, Kaffa	6.1500	37.3400	h16		h24	MK415372	h20
<i>C. g. guereza</i>	Din1b	ETH	Dinibira, Kaffa	6.1500	37.3400	h16		h30	MK415378	h17
<i>C. g. guereza</i>	SH22	ETH	Kama1	7.3145	36.0727	h16		h25	MK415373	h19
<i>C. g. guereza</i>	SH25	ETH	Kayakela2	7.3217	36.2138	h16		h26		h18
<i>C. g. guereza</i>	SH32	ETH	Yayoo	8.2895	35.6091	h17	MK415340	h29	MK415377	h21
<i>C. g. guereza</i>	Bale01	ETH	Bale Mts	7.2200	39.7175	h18	MK415341	h24		h22
<i>C. g. guereza</i>	Bale02	ETH	Bale Mts	7.2200	39.7175	h18		h24		h22
<i>C. g. guereza</i>	SH04	ETH	Boginda1	7.5170	36.1196	h18		h24		h22
<i>C. g. guereza</i>	WG06	ETH	West Gojam	11.3716	37.2656	h19	MK415342	h13	MK415361	h15
<i>C. g. guereza</i>	Woch02	ETH	Wochalle, Wollo	11.0251	39.6839	h19		h17	MK415365	h11
<i>C. g. guereza</i>	Woch33	ETH	Wochalle, Wollo	11.0251	39.6839	h19		h17		h11
<i>C. g. guereza</i>	Woch50	ETH	Wochalle, Wollo	11.0251	39.6839	h19		h17		h11
<i>C. g. guereza</i>	SH_WolIIIA	ETH	Woliso	8.5348	37.9810	h19				
<i>C. g. guereza</i>	SH_WolIIIB	ETH	Woliso	8.5348	37.9810	h19				
<i>C. g. guereza</i>	SH33	ETH	Bale Mts	7.0443	39.5463	h20	MK415343	h16	MK415364	h12
<i>C. g. guereza</i>	SH34	ETH	Bale Mts	7.0443	39.5463	h20		h16		h12
<i>C. g. guereza</i>	Bed35	ETH	Bedelle	8.4592	36.3618	h21	MK415344	h14	MK415362	h14
<i>C. g. guereza</i>	Bed48	ETH	Bedelle	8.4592	36.3618	h21		h14		h14
<i>C. g. guereza</i>	Bure48	ETH	Bure/Agew Mider	11.0180	36.7628	h21				
<i>C. g. guereza</i>	Jma01	ETH	Jimma	7.6679	36.8861	h21		h09	MK415357	h10
<i>C. g. guereza</i>	SH05	ETH	Kama1	7.3178	36.0695	h22	MK415345	h28	MK415376	h25
<i>C. g. guereza</i>	SH10	ETH	Boginda1	7.5331	36.1210	h22		h27	MK415375	h23
<i>C. g. guereza</i>	SH15	ETH	Boginda1	7.5301	36.1208	h22		h27		h23
<i>C. g. guereza</i>	Illi01	ETH	Illibabour	8.4879	35.6992	h22		h27		h26
<i>C. g. guereza</i>	Bed40	ETH	Bedelle	8.4592	36.3618	h23	MK415346			
<i>C. g. guereza</i>	SHBab	ETH	Boginda1	7.5331	36.1210	h24	MK415347	h28		h24
<i>C. g. guereza</i>	Ars11	ETH	Arussi	7.9853	39.6784			h04	MK415352	
<i>C. g. guereza</i>	Ars09	ETH	Arussi	7.9853	39.6784			h06		

<i>C. g. guereza</i>	Wondo32	ETH	Wondo Genet	7.0209	38.6362			h06		
<i>C. g. guereza</i>	SH06	ETH	Kama2	7.3231	36.0891			h07		
<i>C. g. guereza</i>	Jma02	ETH	Jimma	7.6679	36.8861			h08	MK415356	
<i>C. g. guereza</i>	Gesh02	ETH	Gesh	6.3689	35.1245			h12	MK415360	
<i>C. g. guereza</i>	Bed01	ETH	Bedelle	8.4592	36.3618			h15	MK415363	
<i>C. g. guereza</i>	Woch92	ETH	Wochalle, Wollo	11.0251	39.6839			h17		
<i>C. g. guereza</i>	Har15	ETH	Harenna	6.6827	39.8366			h19	MK415367	
<i>C. g. guereza</i>	Bure47	ETH	Bure/Agew Mider	11.0180	36.7628			h20	MK415368	
<i>C. g. guereza</i>	Dale01	ETH	Dale Woreda, Kaffa	6.4499	38.2220			h22		
<i>C. g. guereza</i>	Har03	ETH	Harenna	6.6827	39.8366			h22		
<i>C. g. guereza</i>	Har04	ETH	Harenna	6.6827	39.8366			h22		
<i>C. g. guereza</i>	Har08	ETH	Harenna	6.6827	39.8366			h22		
<i>C. g. guereza</i>	Har13	ETH	Harenna	6.6827	39.8366			h22		
<i>C. g. guereza</i>	Har22	ETH	Harenna	6.6827	39.8366			h22		
<i>C. g. guereza</i>	Illio2	ETH	Illibabour	8.4879	35.6992			h27		
<i>C. g. guereza</i>	Jma03	ETH	Jimma	7.6679	36.8861			h22		
<i>C. g. guereza</i>	Sha92	ETH	Shako, Bemch Maji	6.5000	35.0000			h22		
<i>C. g. guereza</i>	Sha93	ETH	Shako, Bemch Maji	6.5000	35.0000			h23	MK415371	

CIV = Ivory Coast, CMR = Cameroon, ETH = Ethiopia, GHA = Ghana, GNQ = Equatorial Guinea, KEN = Kenya; h = haplotype, og = outgroup haplotype

**Table S2.** Primers used in this study

<b>Primer ID</b>	<b>Sequence 5'-3'</b>
Cytb1-F	ACC AAT GAT ATG AAA AAY CAT
Cytb1-R	TGG TTG TAT AGT AGG GGT
Cytb2-F	ACA CCT ACT CTT TCT ACA
Cytb2-R	GTT TTG GGT ATT GGY GGT
NADH-F	CTA ACC CCT ACG AAT GCG G
NADH-R	CGT GAG GGA CTT TCA TTG TG