iScience, Volume *26*

Supplemental information

Digging into the admixture strata of current-day Canary Islanders based on mitogenomes

Víctor García-Olivares, Luis A. Rubio-Rodríguez, Adrián Muñoz-Barrera, Ana Díaz-de Usera, David Jáspez, Antonio Iñigo-Campos, María Del Cristo Rodríguez Pérez, Antonio Cabrera de León, José M. Lorenzo-Salazar, Rafaela González-Montelongo, Vicente M. Cabrera, and Carlos Flores

Table S1. Within-island matches between aboriginal and current-day Canary mtDNA lineages, including number of samples and frequencies (%). Lineages detected exclusively in aboriginal samples were marked with an asterisk. Related to the main text and methods.

[1]Islands	El Hierro		La Palma		La Gomera		Tenerife		Gran Canaria		Fuerteventura		Lanzarote		HVR Diagnostic positions (-16000)	Regions	References
Haplogroup	Aboriginal	Present-Day	Aboriginal	Present-Day	Aboriginal	Present-Day	Aboriginal	Present-Day	Aboriginal	Present-Day	Aboriginal	Present-Day	Aboriginal	Present-Day			
H+16086									1(.011)						86	Tunisia	1
H+16172		1(.006)			1(.016)			1(.002)		3(.009)					172	Morocco, West Sahara, Mauritania	1–3
H1+16189						2(.010)	1(.021)	5(.010)		1(.003)		3(.025)			189	Algeria, Tunisia, Tuareg	4–6
H1+16239									1(.011)						239	Morocco,France, Italy	7–9
H+16290			1(.04)	2(.010)											290	West Sahara, Morocco	10,11
H+16291						1(.005)		1(.021)				1(.008)			291	Mauritania	2
H+16311				1(.005)		1(.005)	2(.043)	2(.004)						1(.005)	311	Morocco, Algeria, Tunisia	3,5,6
H+16362		1(.006)		1(.005)				2(.004)	3(.034)	4(.011)		1(.008)					
H1e1a		1(.006)		1(.005)		3(.014)		4(.006)	1(.011)	9(.026)	2(.32)	5(.041)		6(.030)		Basque Country, Portugal, Italy	12–15
H1a0		4(.023)				1(.005)	1(.021)	2(.004)	3(.034)		1(.17)				278	Portugal	Greenspan, GQ334714
H1bw			1(.04)			1(.005)	1(.021)	2(.004)	1(.011)						316	Andalusia	16
H1cf	61(.97)	7(.041)	6(.26)	5(.026)	2(.033)	3(.014)	5(.107)	17(.035)	2(.023)	6(.017)		9(.074)		8(.041)	260	Morocco, Tunisia, Algeria	1,17,18
H1cf+16278			1(.04)												278		
H2a									1(.011)	1(.002)						Hungary	LS997685
H3									2(.023)	4(.011)		1(.008)		1(.005)		Basque Country	19
H3r+16126						3(.014)	1(.021)	5(.010)					1.(.17)		126	Morocco, Finland	[6], FTDNA JN112339
H3r+16260							1(.021)	1(.002)							260		
H4a1		1(.006)		1(.005)				1(.002)	3(.034)	6(.017)		1(.008)	1(.17)	1(.005)	362	Morocco, Sahara, Algeria, Italy, Egypt	3,5,10,20
HV							*								189 316	Iraq, Lebanon	21,22
HV1					1(.016)										67	Morocco, Tunisia, Algeria	3,22
I					1(.016)	2(.010)	1(.021)	1(.002)							092 278		
I1					1(.016)	1(.005)						3(.025)			311	Tunisia	23
J1c3							1(.021)									Sardinia, Umbria	9,24
J1c2e2							1(.021)	5(.010)							069 126 278 366	Basque Country, Sardinia	24,25
J2a2d1a		25(.146)	3(.13)	3(.016)	5(.082)	8(.039)	3(.065)	4(.008)	2(.023)	17(.048)		1(.008)		6(.030)	145 207 243 311 318C	Tunisia	26
K1a		2(.012)	1(.04)				1(.021)	7(.014)	1(.011)	7(.014)				1(.005)	093 189 224 311	Morocco, Iraq, Switzerland	27–29
K2a5a1									1(.011)						235	Morocco, Portugal	3,13
L1b1a			1(.04)	1(.005)	1(.016)				2(.023)	5(.014)		1(.008)			126 145 187 189 223 264 270 278 293 311	Morocco	30
L2										1(.011)					145 213 223	Chad	31
L2c			1(.04)			1(.005)		1(.002)							223 278 390	Mauritania	32
L2d2							1(.021)								114A 145 184 223 239 278 292 311	Cabo Verde	33

L2e2									2(.043)				1(.003)						111A 145 184 223 239 278 292 311 355 390 399 400	Tunisia, Cabo Verde, Sao Tome Principe	23,33,34
L3b1a				2(.010)		1(.005)				5(.010)	5(.056)	3(.009)							124! 223 278 362	Morocco, Algeria	11,35
L3d					1(.016)				1(.021)			1(.003)			1(.008)				124 223 257	Morocco, West Sahara, Sierra Leone	11,16,17
L3d1b3a					4(.066)	4(.019)													256	Morocco	11
L3e1											1(.011)								187 223 327	Chad	31
L3e2											1(.011)								126 223 262 320	Algeria	5
L3e2/L2c									*										081 093 175 223 278 320	Sao Tome Principe	34
M1b1										1(.002)	1(.011)	2(.006)			1(.008)			4(.020)	129 185 189 223 249 311	Morocco, Sahara, Algeria	5,10,11
N1b1a7					1(.016)														145 176G 223 297 311 (390)	Armenia	Greenspan, JF265069
R0a									1(.021)	1(.002)									126 362	Morocco, Algeria	3,5
T1a		5(.029)		1(.04)	6(.031)			15(.072)		10(.021)	1(.011)	3(.009)			7(.057)			5(.025)	126 163 186 189 294	Morocco, Algeria, Tunisia	1,5,10
T2b					7(.037)			2(.010)		5(.010)	4(.045)	2(.005)						3(.015)	304 241	Morocco, Algeria, Tunisia	1,5,7
T2c									1(.021)										126 224 292 294	France, Romania	36,37
T2c1d				3(.13)				3(.015)	10(.215)	6(.012)	15(.169)	13(.037)	1(.17)	4(.033)				15(.077)	399	Tunisia	26
T2c1d+16255													1(.17)						255		
U1a2a									1(.021)												
U5											1(.011)							1(.005)	270	Algeria, Mauritania	2,5
U5a1b4	1(.015)	16(.094)																	093 192 256 270 362 399	Denmark	38
U5a2a					1(.005)					2(.004)	1(.011)								294	Morocco	10
U5b1					1(.005)			1(.005)		2(.004)		2(.006)			2(.017)	1(.17)		1(.005)	189 192!	Morocco, Tunisia, Mauritania	1,2,39
U5b1+16192					1(.005)			5(.024)		9(.019)	1(.011)	5(.014)			2(.017)				189 192	Morocco, West Sahara, Mauritania	2,10,39
U6a		1(.006)								2(.004)	3(.034)	1(.003)						1(.005)	172 219 278	Morocco, West Sahara, Mauritania, Tunisia, Algeria	1,5,10
U6a1											1(.011)								172 219 221 224 278	Andalusia	40
U6a1a		1(.006)							1(.021)	1(.002)	1(.011)	1(.003)			1(.008)				172 189 219 278	Morocco, West Sahara, Mauritania, Tunisia, Algeria	2,5,10,41
U6a1a1									1(.021)	2(.004)	2(.023)					3(.49)			239	Morocco,Tunisia, Algeria	3,5,41
U6a3		1(.006)						2(.010)		5(.010)	1(.011)	1(.003)			1(.008)			1(.005)		Morocco, Tunisia	10,41
U6a7a1					4(.021)					1(.002)	1(.011)								15530 15632		
U6b									1(.021)											Morocco, Tunisia, Sudan	3,41,42
U6b1a		29(.170)		2(.08)	25(.131)	34(.559)	75(.361)		5(.107)	28(.058)	5(.056)	29(.083)			11(.090)			32(.163)	163	Lebanon	43
U6b1a+16092		11(.064)			1(.005)	3(.050)	13(.063)			7(.014)	7(.079)				2(.017)			10(.051)	92		
U6b1a1		3(.018)			2(.010)	1(.016)	1(.005)			2(.004)	4(.045)							1(.005)	48		
U6c1		2(.012)			4(.021)		2(.010)			7(.014)	5(.056)	6(.017)	1(.17)	8(.066)				6(.031)	129 169	Tunisia, Italy	9,44
U6c1+16213											1(.011)	1(.003)							213		
U7	1(.015)																		309 318T	Egypt	45
V		2(.012)				1(.016)			1(.021)	6(.012)		2(.006)			1(.008)				298	Morocco, Mauritania, Tunisia, Algeria	1,2,5,10
W1e1/L3f1b1				1(.04)	3(.016)														295	Morocco	11
X3a				2(.08)	5(.026)	4(.066)	1(.005)		1(.021)	3(.006)	2(.023)	4(.011)							15672 189 223 278 (390)	Morocco, Tunisia, Algeria	5,10,41
Aboriginal (N)	63			24		61			47		89		6			6								
Current-day (N)*	106 + 65 = 171			104 + 87 = 191		137 + 71 = 208			188 + 295 = 483		216 + 134 = 350		55 + 67 = 122			112 + 84 = 196								

* (Complete + partial sequences)

References

1. Ennafaa, H., Fregel, R., Khodjet-El-Khil, H., González, A.M., Mahmoudi, H.A.E., Cabrera, V.M., Larruga, J.M., and Benammar-Elgaaïed, A. (2011). Mitochondrial DNA and Y-chromosome microstructure in Tunisia. J. Hum. Genet. *56*, 734–741. 10.1038/jhg.2011.92.

2. González, A.M., Cabrera, V.M., Larruga, J.M., Tounkara, A., Noumsi, G., Thomas, B.N., and Moulds, J.M. (2006). Mitochondrial DNA variation in Mauritania and Mali and their genetic relationship to other Western Africa populations. Ann. Hum. Genet. *70*, 631–657. 10.1111/j.1469-1809.2006.00259.x.

3. Rhouda, T., Martínez-Redondo, D., Gómez-Durán, A., Elmtili, N., Idaomar, M., Díez-Sánchez, C., Montoya, J., López-Pérez, M.J., and Ruiz-Pesini, E. (2009). Moroccan mitochondrial genetic background suggests prehistoric human migrations across the Gibraltar Strait. Mitochondrion *9*, 402–407. 10.1016/j.mito.2009.07.003.

4. Pereira, L., Černý, V., Cerezo, M., Silva, N.M., Hájek, M., Vašíková, A., Kujanová, M., Brdička, R., and Salas, A. (2010). Linking the sub-Saharan and West Eurasian gene pools: maternal and paternal heritage of the Tuareg nomads from the African Sahel. European Journal of Human Genetics *18*, 915–923. 10.1038/ejhg.2010.21.

5. Bekada, A., Fregel, R., Cabrera, V.M., Larruga, J.M., Pestano, J., Benhamamouch, S., and González, A.M. (2013). Introducing the Algerian mitochondrial DNA and Y-chromosome profiles into the North African landscape. PLoS One *8*, e56775. 10.1371/journal.pone.0056775.

6. Kefi, R., Hsouna, S., Ben Halim, N., Lasram, K., Romdhane, L., Messai, H., and Abdelhak, S. (2015). Phylogeny and genetic structure of Tunisians and their position within Mediterranean populations. Mitochondrial DNA *26*, 593–604. 10.3109/19401736.2013.879649.

7. Kefi, R., Hechmi, M., Naouali, C., Jmel, H., Hsouna, S., Bouzaid, E., Abdelhak, S., Beraud-Colomb, E., and Stevanovitch, A. (2018). On the origin of Iberomaurusians: new data based on ancient mitochondrial DNA and phylogenetic analysis of Afalou and Taforalt populations. Mitochondrial DNA A DNA Mapp Seq Anal *29*, 147–157. 10.1080/24701394.2016.1258406.

8. Dubut, V., Chollet, L., Murail, P., Cartault, F., Béraud-Colomb, E., Serre, M., and Mogentale-Profizi, N. (2004). mtDNA polymorphisms in five French groups: importance of regional sampling. Eur. J. Hum. Genet. *12*, 293–300. 10.1038/sj.ejhg.5201145.

9. Modi, A., Lancioni, H., Cardinali, I., Capodiferro, M.R., Migliore, N.R., Hussein, A., Strobl, C., Bodner, M., Schnaller, L., Xavier, C., et al. (2020). The mitogenome portrait of Umbria in Central Italy as depicted by contemporary inhabitants and pre-Roman remains. Scientific Reports *10*. 10.1038/s41598-020-67445-0.

10. Rando, J.C., Pinto, F., González, A.M., Hernández, M., Larruga, J.M., Cabrera, V.M., and Bandelt, H.J. (1998). Mitochondrial DNA analysis of northwest African populations reveals genetic exchanges with European, near-eastern, and sub-Saharan populations. Ann. Hum. Genet. *62*, 531–550. 10.1046/j.1469-1809.1998.6260531.x.

11. Aboukhalid, R., Sturk-Andreaggi, K., Bouabdellah, M., Squalli, D., Irwin, J.A., and Amzazi, S. (2013). Mitochondrial DNA control region variation from samples of the Moroccan population. Int. J. Legal Med. *127*, 757–759. 10.1007/s00414-012-0813-4.

12. Pereira, L., Gonçalves, J., Franco-Duarte, R., Silva, J., Rocha, T., Arnold, C., Richards, M., and Macaulay, V. (2007). No Evidence for an mtDNA Role in Sperm Motility: Data from Complete Sequencing of Asthenozoospermic Males. Molecular Biology and Evolution *24*, 868–874. 10.1093/molbev/msm004.

13. Behar, D.M., Harmant, C., Manry, J., van Oven, M., Haak, W., Martinez-Cruz, B., Salaberria, J., Oyharçabal, B., Bauduer, F., Comas, D., et al. (2012). The Basque paradigm: genetic evidence of a maternal continuity in the Franco-Cantabrian region since pre-Neolithic times. Am. J. Hum. Genet. *90*, 486–493. 10.1016/j.ajhg.2012.01.002.

14. Bodner, M., Iuvaro, A., Strobl, C., Nagl, S., Huber, G., Pelotti, S., Pettener, D., Luiselli, D., and Parson, W. (2015). Helena, the hidden beauty: Resolving the most common West Eurasian mtDNA control region haplotype by massively parallel sequencing an Italian population sample. Forensic Sci. Int. Genet. *15*, 21–26. 10.1016/j.fsigen.2014.09.012.

15. Diroma, M.A., Modi, A., Lari, M., Sineo, L., Caramelli, D., and Vai, S. (2021). New Insights Into Mitochondrial DNA Reconstruction and Variant Detection in Ancient Samples. Front. Genet. *12*, 619950. 10.3389/fgene.2021.619950.

16. Hernández, C.L., Soares, P., Dugoujon, J.M., Novelletto, A., Rodríguez, J.N., Rito, T., Oliveira, M., Melhaoui, M., Baali, A., Pereira, L., et al. (2015). Early Holocenic and Historic mtDNA African Signatures in the Iberian Peninsula: The Andalusian Region as a Paradigm. PLoS One *10*, e0139784. 10.1371/journal.pone.0139784.

17. Brakez, Z., Bosch, E., Izaabel, H., Akhayat, O., Comas, D., Bertranpetit, J., and Calafell, F. (2001). Human mitochondrial DNA sequence variation in the Moroccan population of the Souss area. Annals of Human Biology *28*, 295–307. 10.1080/03014601300119106.

18. Fregel, R., Pestano, J., Arnay, M., Cabrera, V.M., Larruga, J.M., and González, A.M. (2009). The maternal aborigine colonization of La Palma (Canary Islands). Eur. J. Hum. Genet. *17*, 1314–1324. 10.1038/ejhg.2009.46.

19. García, Ó., Alonso, S., Huber, N., Bodner, M., and Parson, W. (2020). Forensically relevant phylogeographic evaluation of mitogenome variation in the Basque Country. Forensic Sci. Int. Genet. *46*, 102260. 10.1016/j.fsigen.2020.102260.

20. Drosou, K., Collin, T.C., Freeman, P.J., Loynes, R., and Freemont, T. (2020). The first reported case of the rare mitochondrial haplotype H4a1 in ancient Egypt. Sci. Rep. *10*, 17037. 10.1038/s41598-020-74114-9.

21. Al-Zahery, N., Semino, O., Benuzzi, G., Magri, C., Passarino, G., Torroni, A., and Santachiara-Benerecetti, A.S. (2003). Y-chromosome and mtDNA polymorphisms in Iraq, a crossroad of the early human dispersal and of post-Neolithic migrations. Mol. Phylogenet. Evol. *28*, 458–472. 10.1016/s1055-7903(03)00039-3.

22. Badro, D.A., Douaihy, B., Haber, M., Youhanna, S.C., Salloum, A., Ghassibe-Sabbagh, M., Johnsrud, B., Khazen, G., Matisoo-Smith, E., Soria-Hernanz, D.F., et al. (2013). Y-chromosome and mtDNA genetics reveal significant contrasts in affinities of modern Middle Eastern populations with European and African populations. PLoS One *8*, e54616. 10.1371/journal.pone.0054616.

23. Costa, M.D., Cherni, L., Fernandes, V., Freitas, F., Ammar el Gaaied, A.B., and Pereira, L. (2009). Data from complete mtDNA sequencing of Tunisian centenarians: Testing haplogroup association and the “golden mean” to longevity. Mech. Ageing Dev. *130*, 222–226. 10.1016/j.mad.2008.12.001.

24. Olivieri, A., Sidore, C., Achilli, A., Angius, A., Posth, C., Furtwängler, A., Brandini, S., Capodiferro, M.R., Gandini, F., Zoledziewska, M., et al. (2017). Mitogenome Diversity in Sardinians: A Genetic Window onto an Island’s Past. Molecular Biology and Evolution *34*, 1230–1239. 10.1093/molbev/msx082.

25. Cardoso, S., Valverde, L., Alfonso-Sánchez, M.A., Palencia-Madrid, L., Elcoroaristizabal, X., Algorta, J., Catarino, S., Arteta, D., Herrera, R.J., Zarrabeitia, M.T., et al. (2013). The Expanded mtDNA Phylogeny of the Franco-Cantabrian Region Upholds the Pre-Neolithic Genetic Substrate of Basques. PLoS ONE *8*, e67835. 10.1371/journal.pone.0067835.

26. Pereira, J.B., Costa, M.D., Vieira, D., Pala, M., Bamford, L., Harich, N., Cherni, L., Alshamali, F., Hatina, J., Rychkov, S., et al. (2017). Reconciling evidence from ancient and contemporary genomes: a major source for the European Neolithic within Mediterranean Europe. Proceedings of the Royal Society B: Biological Sciences *284*, 20161976. 10.1098/rspb.2016.1976.

27. Plaza, S., Calafell, F., Helal, A., Bouzerna, N., Lefranc, G., Bertranpetit, J., and Comas, D. (2003). Joining the pillars of Hercules: mtDNA sequences show multidirectional gene flow in the western Mediterranean. Ann. Hum. Genet. *67*, 312–328. 10.1046/j.1469-1809.2003.00039.x.

28. Shamoon-Pour, M., Li, M., and Andrew Merriwether, D. (2019). Rare human mitochondrial HV lineages spread from the Near East and Caucasus during post-LGM and Neolithic expansions. Scientific Reports *9*. 10.1038/s41598-019-48596-1.

29. Furtwängler, A., Rohrlach, A.B., Lamnidis, T.C., Papac, L., Neumann, G.U., Siebke, I., Reiter, E., Steuri, N., Hald, J., Denaire, A., et al. (2020). Ancient genomes reveal social and genetic structure of Late Neolithic Switzerland. Nat. Commun. *11*, 1915. 10.1038/s41467-020-15560-x.

30. Cerezo, M., Achilli, A., Olivieri, A., Perego, U.A., Gómez-Carballa, A., Brisighelli, F., Lancioni, H., Woodward, S.R., López-Soto, M., Carracedo, A., et al. (2012). Reconstructing ancient mitochondrial DNA links between Africa and Europe. Genome Res. *22*, 821–826. 10.1101/gr.134452.111.

31. Cerný, V., Salas, A., Hájek, M., Zaloudková, M., and Brdicka, R. (2007). A bidirectional corridor in the Sahel-Sudan belt and the distinctive features of the Chad Basin populations: a history revealed by the mitochondrial DNA genome. Ann. Hum. Genet. *71*, 433–452. 10.1111/j.1469-1809.2006.00339.x.

32. Maca-Meyer, N., González, A.M., Larruga, J.M., Flores, C., and Cabrera, V.M. (2001). Major genomic mitochondrial lineages delineate early human expansions. BMC Genet. *2*, 13. 10.1186/1471-2156-2-13.

33. Brehm, A., Pereira, L., Bandelt, H.-J., Prata, M.J., and Amorim, A. (2002). Mitochondrial portrait of the Cabo Verde archipelago: the Senegambian outpost of Atlantic slave trade. Ann. Hum. Genet. *66*, 49–60. 10.1017/S0003480001001002.

34. Trovoada, M.J., Pereira, L., Gusmão, L., Abade, A., Amorim, A., and Prata, M.J. (2004). Pattern of mtDNA variation in three populations from São Tomé e Príncipe. Ann. Hum. Genet. *68*, 40–54. 10.1046/j.1529-8817.2003.00070.x.

35. Côrte-Real, H.B.S.M., Macaulay, V.A., Richards, M.B., Hariti, G., Issad, M.S., Cambon-Thomsen, A., Papiha, S., Bertranpetit, J., and Sykes, B.C. (1996). Genetic diversity in the Iberian Peninsula determined from mitochondrial sequence analysis. Ann. Hum. Genet. *60*, 331–350. 10.1111/j.1469-1809.1996.tb01196.x.

36. Richard, C., Richard, C., Pennarun, E., Kivisild, T., Tambets, K., Tolk, H.-V., Metspalu, E., Reidla, M., Chevalier, S., Giraudet, S., et al. (2007). An mtDNA perspective of French genetic variation. Annals of Human Biology *34*, 68–79. 10.1080/03014460601076098.

37. Cocoş, R., Schipor, S., Hervella, M., Cianga, P., Popescu, R., Bănescu, C., Constantinescu, M., Martinescu, A., and Raicu, F. (2017). Genetic affinities among the historical provinces of Romania and Central Europe as revealed by an mtDNA analysis. BMC Genet. *18*, 20. 10.1186/s12863-017-0487-5.

38. Li, S., Besenbacher, S., Li, Y., Kristiansen, K., Grarup, N., Albrechtsen, A., Sparsø, T., Korneliussen, T., Hansen, T., Wang, J., et al. (2014). Variation and association to diabetes in 2000 full mtDNA sequences mined from an exome study in a Danish population. Eur. J. Hum. Genet. *22*, 1040–1045. 10.1038/ejhg.2013.282.

39. Harich, N., Costa, M.D., Fernandes, V., Kandil, M., Pereira, J.B., Silva, N.M., and Pereira, L. (2010). The trans-Saharan slave trade - clues from interpolation analyses and high-resolution characterization of mitochondrial DNA lineages. BMC Evol. Biol. *10*, 138. 10.1186/1471-2148-10-138.

40. Álvarez-Cubero, M.J., Saiz Guinaldo, M., Martínez-González, L.J., Álvarez Merino, J.C., Cózar Olmo, J.M., and Acosta, J.A.L. (2012). Mitochondrial haplogroups and polymorphisms reveal no association with sporadic prostate cancer in a southern European population. PLoS One *7*, e41201. 10.1371/journal.pone.0041201.

41. Cherni, L., Loueslati, B.Y., Pereira, L., Ennafaâ, H., Amorim, A., and El Gaaied, A.B.A. (2005). Female gene pools of Berber and Arab neighboring communities in central Tunisia: microstructure of mtDNA variation in North Africa. Hum. Biol. *77*, 61–70. 10.1353/hub.2005.0028.

42. Secher, B., Fregel, R., Larruga, J.M., Cabrera, V.M., Endicott, P., Pestano, J.J., and González, A.M. (2014). The history of the North African mitochondrial DNA haplogroup U6 gene flow into the African, Eurasian and American continents. BMC Evol. Biol. *14*, 109. 10.1186/1471-2148-14-109.

43. Haber, M., Youhanna, S.C., Balanovsky, O., Saade, S., Martínez-Cruz, B., Ghassibe-Sabbagh, M., Shasha, N., Osman, R., el Bayeh, H., Koshel, S., et al. (2012). mtDNA lineages reveal coronary artery disease-associated structures in the Lebanese population. Ann. Hum. Genet. *76*, 1–8. 10.1111/j.1469-1809.2011.00682.x.

44. Fadhlaoui-Zid, K., Plaza, S., Calafell, F., Ben Amor, M., Comas, D., and Bennamar El gaaied, A. (2004). Mitochondrial DNA heterogeneity in Tunisian Berbers. Ann. Hum. Genet. *68*, 222–233. 10.1046/j.1529-8817.2004.00096.x.

45. Krings, M., Salem, A.-E.H., Bauer, K., Geisert, H., Malek, A.K., Chaix, L., Simon, C., Welsby, D., Di Rienzo, A., Utermann, G., et al. (1999). mtDNA Analysis of Nile River Valley Populations: A Genetic Corridor or a Barrier to Migration? The American Journal of Human Genetics *64*, 1166–1176. 10.1086/302314.

Published partial sequences have been obtained from the following studies:

- Fregel, R., Pestano, J., Arnay, M., Cabrera, V.M., Larruga, J.M., and González, A.M. (2009). The maternal aborigine colonization of La Palma (Canary Islands). Eur. J. Hum. Genet. *17*, 1314–1324. 10.1038/ejhg.2009.46.
- Fregel, R., Cabrera, V.M., Larruga, J.M., Hernández, J.C., Gámez, A., Pestano, J.J., Arnay, M., and González, A.M. (2015). Isolation and prominent aboriginal maternal legacy in the present-day population of La Gomera (Canary Islands). Eur. J. Hum. Genet. *23*, 1236–1243. 10.1038/ejhg.2014.251.
- Fregel, R., Ordóñez, A.C., Santana-Cabrera, J., Cabrera, V.M., Velasco-Vazquez, J., Alberto, V., Moreno-Benítez, M.A., Delgado-Darias, T., Rodríguez-Rodríguez, A., Hernández, J.C., et al. (2019). Mitogenomes illuminate the origin and migration patterns of the indigenous people of the Canary Islands. PLoS One *14*, e0209125. 10.1371/journal.pone.0209125.
- González, A.M., Maceira, B.M., Pérez, E., Cabrera, V.M., López, A.J., and Larruga, J.M. (2012). Genetics, environment, and diabetes-related end-stage renal disease in the Canary Islands. Genet. Test. Mol. Biomarkers 16, 859–864.
- Maca-Meyer, N. (2002). Composición genética de poblaciones históricas y prehistóricas humanas de las Islas Canarias.
- Maca-Meyer, N., González, A.M., Pestano, J., Flores, C., Larruga, J.M., and Cabrera, V.M. (2003). Mitochondrial DNA transit between West Asia and North Africa inferred from U6 phylogeography. BMC Genet. *4*, 15.
- Maca-Meyer, N., Arnay, M., Rando, J.C., Flores, C., González, A.M., Cabrera, V.M., and Larruga, J.M. (2004). Ancient mtDNA analysis and the origin of the Guanches. Eur. J. Hum. Genet. 12, 155–162. 10.1038/sj.ejhg.5201075.
- Maca-Meyer, N., Cabrera, V.M., Arnay, M., Flores, C., Fregel, R., González, A.M., and Larruga, J.M. (2005). Mitochondrial DNA diversity in 17th-18th century remains from Tenerife (Canary Islands). Am. J. Phys. Anthropol. *127*, 418–426. 10.1002/ajpa.20148.
- Pinto, F.M., González, A.M., Hernández, M., Larruga, J.M., and Cabrera, V.M. (1996). Genetic relationship between the Canary Islanders and their African and Spanish ancestors inferred from mitochondrial DNA sequences. Ann. Hum. Genet. *60*, 321–330. 10.1111/j.1469-1809.1996.tb01195.x.
- Rando, J.C., Cabrera, V.M., Larruga, J.M., Hernandez, M., and Gonzalez, A.M. (1999). Phylogeographic patterns of mtDNA reflecting the colonization of the Canary Islands. Ann. Hum. Genet. *63*, 413–428. 10.1046/j.1469-1809.1999.6350413.x.Rodríguez-Varela, R. et al. Genomic Analyses of Pre-European Conquest Human Remains from the Canary Islands Reveal Close Affinity to Modern North Africans. Curr. Biol. 27, 3396-3402.e5 (2017).
- Santana-Cabrera, J., Fregel, R., Lightfoot, E., Morales, J., Alamón, M., Guillén, J., Moreno, M., and Rodríguez, A. (2016). The early colonial atlantic world: New insights on the African Diaspora from isotopic and ancient DNA analyses of a multiethnic 15th-17th century burial population from the Canary Islands, Spain. Am. J. Phys. Anthropol. *159*, 300–312. 10.1002/ajpa.22879.
- Santos, C., Fregel, R., Cabrera, V.M., González, A.M., Larruga, J.M., and Lima, M. (2010). Mitochondrial DNA patterns in the Macaronesia islands: Variation within and among archipelagos. Am. J. Phys. Anthropol. *141*, 610–619. 10.1002/ajpa.21180.
- Secher, B., Fregel, R., Larruga, J.M., Cabrera, V.M., Endicott, P., Pestano, J.J., and González, A.M. (2014). The history of the North African mitochondrial DNA haplogroup U6 gene flow into the African, Eurasian and American continents. BMC Evol. Biol. *14*, 109. 10.1186/1471-2148-14-109.

Table S2. List of complete mtDNA sequences used to analyse the genetic affinities between the Canary Islands and other regions. Related to the main text and methods.

Accesion number	Geographic region	Haplogroup	References
MH981872	Paraguay	A2ar1	1
MH981899	Paraguay	A2ar1	1
MG571124	Peru	A2ar2	2
MG571132	Peru	A2ar2	2
KM656458	Venezuela	A2ar3	3
KM656457	Venezuela	A2ar3	3
KM102051	Hispanic	A2as1	4
KM102106	Hispanic	A2as1	4
MK139633	Canary Islands	A2as1	5
KY992164	Granada	H	6
JQ324671	Basque Country	H	7
KU867613	Galicia	H	8
KF162582	Denmark	H	9
MK059723	England	H	10
MG182024	Morocco	H1	11
JX082003	Zaragoza	H1	12
KY409866	Italy	H1	13
LS997822	Hungary	H1	14
JQ702226	Spain	H1a	7
JQ704106	Europe	H1a3	7
MN046452	Basque Country	H1b	15
JN581639	Italy	H1b	16
EF177411	Portugal	H1c3	17
MH120838	Poland	H1c4	18
KY410223	Italy	H1e1	13
EF177428	Portugal	H1e1a	17
KM252751	Italy	H1e1a	19
HG00110	England	H1e1a	1000 Genome Project
MZ920506	Andalusia	H1e1a	20
JQ324885	Basque Country	H1e1a	7
MT179360	France	H1h1	FTDNA
KF161662	Denmark	H1j	9
MN687180	Italy	H1n6	21
HQ662225	England	H1q	FTDNA
KM252741	Italy	H1q2	19
JX154028	Denmark	H1t	22
KY656560	Portugal	H1u	FTDNA
FJ460532	Tunisia	H1v	23
MW700271	Spain	H1ao1	FTDNA
GQ334714	Portugal	H1ao1	FTDNA
MN540514	Finland	H1ap1	24
KF161097	Denmark	H1ap1	9
JX082003	Zaragoza	H1au	12
HQ841014	England	H1bb	FTDNA
JQ704606	Germany	H1br	7
HQ384179	Galicia	H1bv1	8
KC257391	Europe	H1cf	25
FJ719303	Algeria	H1cf	26
LS997685	Hungary	H2a1	14
KY670885	Russia	H2a1	27
JQ324555	Basque Country	H2a5a	7
JQ703382	England	H3b1b1	7
KF162077	Denmark	H3c	9
MF085405	Sweden	H3c	FTDNA
JX153807	Denmark	H3c	22
KY992146	Andalusia	H3c2	6
KY992145	Andalusia	H3c2	6
JQ705425	Europe	H3c2	7
KU867596	Galicia	H3g	8
MF177164	Poland	H3k	28
JN112339	Finland	H3r	FTDNA
MG201867	Wales	H3v	FTDNA
FJ460550	Tunisia	H3w	23
MK114114	England	H3an	FTDNA
KM102136	Hispanic	H3ap	4
MW389259	Italy	H4a1	29
MZ920434	Galicia	H4a1	20
EF556191	Tunisia	H4a1a3a	30
KF305642	Bulgaria	H4a1c2	FTDNA
MZ920465	Andalusia	H4a1	20
GQ983091	Italy	H5	31
KT897693	Portugal	H5a2	FTDNA
HQ384190	Galicia	H5a1j	8
JQ324706	Basque Country	H5a3a1	7
MN046514	Basque Country	H5a3a1	15
MN046555	Basque Country	H5a3a1	15
KY408148	Italy	H5b	13
MG773619	Italy	H6a1a	32
JQ324728	Basque Country	H61a7	7
KF161744	Denmark	H6a1b2	9
JQ703732	Ireland	H6a1b2	7
AY495120	France	H7	33
Berber360	Morocco	H7	34
MH043574	Ibiza	H7	35
KP900762	Portugal	H7	36
JQ704185	France	H11a	7
HM103355	Zaragoza	H13a1b	37
JQ704795	Basque Country	H14b2a	7
KJ169903	Granada	H20a1a	6
MN046542	Basque Country	H24	15
JQ324625	Basque Country	H27	7
JX152998	Italy	H30a	22
AY495114	Europe	H43	33
KU683584	Uyghur	H53	38
KY409190	ITaly	H71	13
KY409743	Italy	HV0	13
JF749647	Morocco	HV0	39

JX153420	Denmark	HV0g	22
HQ384193	Galicia	HV16311	8
MH981877	Paraguay	HV16311	1
KP340129	Italy	HV16311	40
MK040560	Finland	HV9	FTDNA
KF162880	Denmark	I	9
KX273860	Germany	I	FTDNA
FJ460562	Tunisia	I1a1	23
EF177414	Portugal	I1a1	17
KJ882427	France	I2c	FTDNA
KY369150	Italy	I3a	FTDNA
KU867600	Galicia	J1b1a1f	8
MF362837	Armenia	J1b1b1d	41
JQ797765	Kuwait	J1b1b1d	42
MH298071	Romania	J1c15	43
MT079096	Switzerland	J1c1b	44
KX440218	Italy	J1c2	17
MG646278	Poland	J1c2	18
KY930954	Netherlands	J1c2a3	FTDNA
MF114222	Poland	J1c2a1	45
EF177422	Portugal	J1c2c1	17
KJ486154	England	J12c3	FTDNA
MZ920408	Castilla	J1c2e2	20
MZ920344	Castilla	J1c2h	20
JQ705996	Europe	J1c2h	7
KY399151	Italy	J1c3	13
JX153698	Denmark	J1c3	22
JN635300	Galicia	J1c5a	37
HQ876599	Galicia	J1c7	FTDNA
KX440242	Portugal	J1c7	17
MK321344	Galicia	J2a1a1	46
HG01052	Puerto Rico	J2a1a1	1000 Genome Project
JX297144	Basque Country	J2a1a1e	47
FJ460543	Tunisia	J2a2b1	23
JQ797925	Morocco	J2a2b1	42
JQ797926	Morocco	J2a2b1a	42
KX440260	Tunisia	J2a2b1a	17
JQ797935	Algeria	J2a2d	42
KX440266	Portugal	J2a2d	17
FJ460559	Tunisia	J2a2d1	23
KX440262	Tunisia	J2a2d1	17
KX440263	Tunisia	J2a2d1	17
KX440264	Algeria	J2a2d1	17
KT700200	Portugal	J2a2d1a	FTDNA
JF938916	Portugal	J2b1a2a	FTDNA
MT588261	Poland	K1a	48
MZ920324	Castilla	K1a	20
KF162721	Denmark	K1a	9
KF162750	Denmark	K1a	9
MF991436	Morocco	K1a1b1	34
GU471243	Portugal	K1a14	FTDNA
MK059746	England	K1a1b1c	10
KT749779	Italy	K1a4a1	49
JQ705785	Tunisia	K1a4a1	7
KJ187873	Tunisia	K1a4a1	50
MT079061	Switzerland	K1a4a1	44
MZ920320	Castilla	K1a4a2a	20
EF177416	Portugal	K1a4f1	51
KF161232	Denmark	K1b1a1c	9
EF177415	Portugal	K1b1a2	51
KU867603	Galicia	K2b1a1a	8
JN107640	England	K2b1a1a	FTDNA
JQ044893	Mali	L0a1a1	52
JQ044943	Burkina Faso	L0a1a3	52
DQ112692	Dominican Republic	L1b1a	53
HG02589	Gambia	L1b1a	1000 Genome Project
JQ044889	Mali	L1b1a	52
JN214474	Spain	L1b1a2a	54
JN214445	Galicia	L1b1a2a	54
KT819246	Morocco	L1b1a6	6
JQ705832	West Africa	L1b1a10	7
EF657334	West Africa	L1b1a10	55
EU935458	Egypt	L1c3a1a	56
JF509360	West Sahara	L1c3b1	FTDNA
KT819238	Morocco	L2a1	57
KT886411	Sweden	L2a1	FTDNA
KT819207	Andalusia	L2a1	57
DQ304961	African American	L2a1f1	4
KJ446763	Nigeria	L2a1a2b	38
DQ304961	African American	L2a1a3b	4
DQ112723	Burkina Faso	L2a1c	53
JN214440	Galicia	L2a1c3a	54
JN214432	Andalusia	L2a1c4	54
DQ112709	Dominican Republic	L2e	53
MH980013	Dominican Republic	L3b1a	FTDNA
KT819259	Morocco	L3b1a5	57
DQ112710	Dominican Republic	L3b2a	53
KJ185799	Angola	L3f1b1a	58
KJ959230	Galicia	L3f1b6	59
KM101717	African American	L3d1'2'3'4'5'6	4
HG02768	Gambia	L3d1b1	1000 Genome Project
KT819225	Andalusia	L3d1b1	57
JX303821	Zambia	L3d1b3a	60
EU092827	West Africa	L3e1	61
KF055308	African American	L3e1e	62
KJ185846	Angola	L3e3a	58
HG02464	Gambia	L3e4a	1000 Genome Project
HG03081	Sierra Leona	L3e4a	1000 Genome Project
DQ112722	Dominican Republic	L3e4a	53
HQ675033	Galicia	L3x2b	63
KC152546	Tunisia	M1b1a	64
EF177409	Portugal	T1a	17
KX440297	Tunisia	T1a	17
AF382006	Galicia	T1a1	65
MN046585	Basque Country	T1a1	15
MN977125	France	T1a1	YSEQ
EF177441	Portugal	T1a2a	51
KX440305	Morocco	T1a6	17
KX440306	Tunisia	T1a6	17
KX440321	Portugal	T2a1b1a2	17

EU747356	Germany	T2b	FTDNA
MK059730	England	T2b	[10]
JX153739	Denmark	T2b	[22]
MF991443	Andalusia	T2b3	[34]
MF991444	Andalusia	T2b3	[34]
MF991439	Morocco	T2b3	[34]
KX440330	Tunisia	T2b3	[17]
KX440333	Portugal	T2b3	[17]
JQ798070	West Europe	T2b4	[42]
JF968593	Belarus	T2b11	FTDNA
KF161296	Denmark	T2c1	[9]
MH918096	Sweden	T2c1	FTDNA
MH687980	Portugal	T2c1a2	FTDNA
KX440361	Tunisia	T2c1d2	[17]
MF991441	Andalusia	T2c1d	[34]
KF162009	Denmark	T2c1d	[9]
MZ920493	Galicia	T2c1d	[20]
JQ798093	Kuwait	T2c1d1c	[42]
KX440359	Morocco	T2c1d1c	[17]
MK139648	Morocco	T2c1d1c	[5]
MN046533	Basque Country	T2e1	[15]
HQ286590	Armenia	T2f2	FTDNA
EF177434	Portugal	U2e1a1	[17]
KF162886	Denmark	U2e1b1	[9]
huDOCFDA	Italy	U2e2a1a	23andMe
MK321335	Portugal	U3a1	[46]
MZ920578	Galicia	U4a1a	[20]
KY411447	Italy	U4a2a	[66]
JQ705130	Portugal	U4b3	[7]
JX153455	Italy	U4c1	[22]
MG766943	Scotland	U4c1	FTDNA
MK059489	Denmark	U4c1	[10]
JQ704661	Scotland	U4c1	[7]
DerekMck	Scotland	U4c1	23andMe
JQ701869	England	U5a1a1m	[7]
KF163031	Denmark	U5a1b4	[9]
HM173090	Ireland	U5a1d2a	FTDNA
EF177408	Portugal	U5a2a1	[46]
KM047194	Italy	U5a2b	[28]
JN897374	Algeria	U5b1b1	FTDNA
JQ701803	Scandinavia	U5b1b1	[7]
KT372902	England	U5b1e	FTDNA
HQ675036	Galicia	U5b1f1	[63]
HQ384207	Galicia	U5b1g	[8]
KC763416	Finland	U5b2a	[67]
DQ156210	Zaragoza	U5b2a1a	[68]
MF498659	West Europe	U5b2b3a	[69]
JX120710	Galicia	U6a1a1	[70]s
KT819213	Andalusia	U6a1a1	[57]
MZ920339	Andalusia	U6a1a1	[20]
MZ920421	Andalusia	U6a1a1	[20]
KF451721	Algeria	U6a1a1	[71]
JX120772	Finland	U6a3a1	[70]
KT819216	Andalusia	U6a3b	[57]
KT799679	Andalusia	U6a5	FTDNA
KC152550	Tunisia	U6a6b1	[64]
JX120724	Morocco	U6a6b1	[70]
KT819265	Morocco	U6a7a1	[57]
AY275531	Mauritania	U6a7a1	[72]
JX120731	Algeria	U6a7b1	[70]
EF064339	France	U6a7b1	[73]
MZ920499	Andalusia	U6b1a	[20]
KT779184	Lebanon	U6b1a	[35]
AY882417	Spain	U6b1a	[74]
JX120733	Basque Country	U6b1a1	[70]
EF064340	Spain	U6b1a1	[73]
JX120735	Morocco	U6b3a	[70]
FJ460538	Tunisia	U6b3a	[23]
KC152543	Morocco	U6b3a	[64]
KC152561	Morocco	U6c1	[64]
JX120744	Andalusia	U6c1	[70]
EF064344	Italy	U6c1	[73]
JX120770	Italy	U6c1	[70]
AY495327	Europe	V	[33]
HQ675042	Galicia	V	[63]
Nedzad2342	Bosnia	V2	23andMe
JQ702667	Ireland	V3a1	[7]
EF177445	Portugal	V9	[17]
KF161476	Denmark	V17	[9]
JQ705168	Europe	V20	[7]
KC286612	Austria	W1e1	[75]
GU646872	Ireland	W5a1a	FTDNA
MN699891	Poland	W6a	[76]
JX021501	Britain	X2b	FTDNA
JQ704969	Britain	X2b	[7]
MZ920343	Andalusia	X2d2	[20]
HQ384215	Galicia	X2c1j	[8]
MN046532	Basque Country	X2c1j	[15]
JQ245804	Tunisia	X3a	[77]

References

1. Simão, F., Strobl, C., Vullo, C., Catelli, L., Machado, P., Huber, N., Schnaller, L., Huber, G., Xavier, C., Carvalho, E.F., et al. (2019). The maternal inheritance of Alto Paraná revealed by full mitogenome sequences. Forensic Sci. Int. Genet. *39*, 66–72. 10.1016/j.fsigen.2018.12.007.

2. Barbieri, C., Sandoval, J.R., Valqui, J., Shimelman, A., Ziemendorff, S., Schröder, R., Geppert, M., Roewer, L., Gray, R., Stoneking, M., et al. (2017). Enclaves of genetic diversity resisted Inca impacts on population history. Sci. Rep. *7*, 17411. 10.1038/s41598-017-17728-w.

3. Lee, E.J., and Merriwether, D.A. (2015). Identification of Whole Mitochondrial Genomes from Venezuela and Implications on Regional Phylogenies in South America. Hum. Biol. *87*, 29–38. 10.13110/humanbiology.87.1.0029.

4. Just, R.S., Scheible, M.K., Fast, S.A., Sturk-Andreaggi, K., Röck, A.W., Bush, J.M., Higginbotham, J.L., Peck, M.A., Ring, J.D., Huber, G.E., et al. (2015). Full mtGenome reference data: development and characterization of 588 forensic-quality haplotypes representing three U.S. populations. Forensic Sci. Int. Genet. *14*, 141–155. 10.1016/j.fsigen.2014.09.021.

5. Fregel, R., Ordóñez, A.C., Santana-Cabrera, J., Cabrera, V.M., Velasco-Vazquez, J., Alberto, V., Moreno-Benítez, M.A., Delgado-Darias, T., Rodríguez-Rodríguez, A., Hernández, J.C., et al. (2019). Mitogenomes illuminate the origin and migration patterns of the indigenous people of the Canary Islands. PLoS One *14*, e0209125. 10.1371/journal.pone.0209125.

6. Hernández, C.L., Dugoujon, J.M., Novelletto, A., Rodríguez, J.N., Cuesta, P., and Calderón, R. (2017). The distribution of mitochondrial DNA haplogroup H in southern Iberia indicates ancient human genetic exchanges along the western edge of the Mediterranean. BMC Genet. *18*, 46. 10.1186/s12863-017-0514-6.

7. Behar, D.M., van Oven, M., Rosset, S., Metspalu, M., Loogväli, E.-L., Silva, N.M., Kivisild, T., Torroni, A., and Villems, R. (2012). A “Copernican” reassessment of the human mitochondrial DNA tree from its root. Am. J. Hum. Genet. *90*, 675–684. 10.1016/j.ajhg.2012.03.002.

8. Gómez-Carballa, A., Cerezo, M., Balboa, E., Heredia, C., Castro-Feijóo, L., Rica, I., Barreiro, J., Eirís, J., Cabanas, P., Martínez-Soto, I., et al. (2011). Evolutionary analyses of entire genomes do not support the association of mtDNA mutations with Ras/MAPK pathway syndromes. PLoS One *6*, e18348. 10.1371/journal.pone.0018348.

9. Li, S., Besenbacher, S., Li, Y., Kristiansen, K., Grarup, N., Albrechtsen, A., Sparsø, T., Korneliussen, T., Hansen, T., Wang, J., et al. (2014). Variation and association to diabetes in 2000 full mtDNA sequences mined from an exome study in a Danish population. Eur. J. Hum. Genet. *22*, 1040–1045. 10.1038/ejhg.2013.282.

10. Klunk, J., Duggan, A.T., Redfern, R., Gamble, J., Boldsen, J.L., Golding, G.B., Walter, B.S., Eaton, K., Stangroom, J., Rouillard, J.-M., et al. (2019). Genetic resiliency and the Black Death: No apparent loss of mitogenomic diversity due to the Black Death in medieval London and Denmark. Am. J. Phys. Anthropol. *169*, 240–252. 10.1002/ajpa.23820.

11. Font-Porterias, N., Solé-Morata, N., Serra-Vidal, G., Bekada, A., Fadhlaoui-Zid, K., Zalloua, P., Calafell, F., and Comas, D. (2018). The genetic landscape of Mediterranean North African populations through complete mtDNA sequences. Ann. Hum. Biol. *45*, 98–104. 10.1080/03014460.2017.1413133.

12. Pacheu-Grau, D., Gómez-Durán, A., Iglesias, E., López-Gallardo, E., Montoya, J., and Ruiz-Pesini, E. (2013). Mitochondrial antibiograms in personalized medicine. Hum. Mol. Genet. *22*, 1132–1139. 10.1093/hmg/dds517.

13. Olivieri, A., Sidore, C., Achilli, A., Angius, A., Posth, C., Furtwängler, A., Brandini, S., Capodiferro, M.R., Gandini, F., Zoledziewska, M., et al. (2017). Mitogenome Diversity in Sardinians: A Genetic Window onto an Island’s Past. Molecular Biology and Evolution *34*, 1230–1239. 10.1093/molbev/msx082.

14. Maróti, Z., Török, T., Neparáczki, E., Raskó, I., Nagy, I., Maróti, M., Varga, T., Bihari, P., Boldogkői, Z., Tombácz, D., et al. (2018). MITOMIX, an Algorithm to Reconstruct Population Admixture Histories Indicates Ancient European Ancestry of Modern Hungarians. bioRxiv, 247395. 10.1101/247395.

15. García, Ó., Alonso, S., Huber, N., Bodner, M., and Parson, W. (2020). Forensically relevant phylogeographic evaluation of mitogenome variation in the Basque Country. Forensic Sci. Int. Genet. *46*, 102260. 10.1016/j.fsigen.2020.102260.

16. Bertolin, C., Magri, C., Barlati, S., Vettori, A., Perini, G.I., Peruzzi, P., Mostacciuolo, M.L., and Vazza, G. (2011). Analysis of complete mitochondrial genomes of patients with schizophrenia and bipolar disorder. J. Hum. Genet. *56*, 869–872. 10.1038/jhg.2011.111.

17. Pereira, L., Gonçalves, J., Franco-Duarte, R., Silva, J., Rocha, T., Arnold, C., Richards, M., and Macaulay, V. (2007). No Evidence for an mtDNA Role in Sperm Motility: Data from Complete Sequencing of Asthenozoospermic Males. Molecular Biology and Evolution *24*, 868–874. 10.1093/molbev/msm004.

18. Piotrowska-Nowak, A., Elson, J.L., Sobczyk-Kopciol, A., Piwonska, A., Puch-Walczak, A., Drygas, W., Ploski, R., Bartnik, E., and Tonska, K. (2018). New mtDNA Association Model, MutPred Variant Load, Suggests Individuals With Multiple Mildly Deleterious mtDNA Variants Are More Likely to Suffer From Atherosclerosis. Front. Genet. *9*, 702. 10.3389/fgene.2018.00702.

19. Bodner, M., Iuvaro, A., Strobl, C., Nagl, S., Huber, G., Pelotti, S., Pettener, D., Luiselli, D., and Parson, W. (2015). Helena, the hidden beauty: Resolving the most common West Eurasian mtDNA control region haplotype by massively parallel sequencing an Italian population sample. Forensic Sci. Int. Genet. *15*, 21–26. 10.1016/j.fsigen.2014.09.012.

20. Silva, M., Oteo-García, G., Martiniano, R., Guimarães, J., von Tersch, M., Madour, A., Shoeib, T., Fichera, A., Justeau, P., Foody, M.G.B., et al. (2021). Biomolecular insights into North African-related ancestry, mobility and diet in eleventh-century Al-Andalus. Sci. Rep. *11*, 1–13. 10.1038/s41598-021-95996-3.

21. Modi, A., Lancioni, H., Cardinali, I., Capodiferro, M.R., Migliore, N.R., Hussein, A., Strobl, C., Bodner, M., Schnaller, L., Xavier, C., et al. (2020). The mitogenome portrait of Umbria in Central Italy as depicted by contemporary inhabitants and pre-Roman remains. Scientific Reports *10*. 10.1038/s41598-020-67445-0.

22. Raule, N., Sevini, F., Li, S., Barbieri, A., Tallaro, F., Lomartire, L., Vianello, D., Montesanto, A., Moilanen, J.S., Bezrukov, V., et al. (2014). The co-occurrence of mtDNA mutations on different oxidative phosphorylation subunits, not detected by haplogroup analysis, affects human longevity and is population specific. Aging Cell *13*, 401–407. 10.1111/acel.12186.

23. Costa, M.D., Cherni, L., Fernandes, V., Freitas, F., Ammar el Gaaied, A.B., and Pereira, L. (2009). Data from complete mtDNA sequencing of Tunisian centenarians: Testing haplogroup association and the “golden mean” to longevity. Mech. Ageing Dev. *130*, 222–226. 10.1016/j.mad.2008.12.001.

24. Översti, S., Majander, K., Salmela, E., Salo, K., Arppe, L., Belskiy, S., Etu-Sihvola, H., Laakso, V., Mikkola, E., Pfrengle, S., et al. (2019). Human mitochondrial DNA lineages in Iron-Age Fennoscandia suggest incipient admixture and eastern introduction of farming-related maternal ancestry. Sci. Rep. *9*, 1–14. 10.1038/s41598-019-51045-8.

25. Sequeira, A., Rollins, B., Magnan, C., van Oven, M., Baldi, P., Myers, R.M., Barchas, J.D., Schatzberg, A.F., Watson, S.J., Akil, H., et al. (2015). Mitochondrial mutations in subjects with psychiatric disorders. PLoS One *10*, e0127280. 10.1371/journal.pone.0127280.

26. Fregel, R., Pestano, J., Arnay, M., Cabrera, V.M., Larruga, J.M., and González, A.M. (2009). The maternal aborigine colonization of La Palma (Canary Islands). Eur. J. Hum. Genet. *17*, 1314–1324. 10.1038/ejhg.2009.46.

27. Malyarchuk, B., Litvinov, A., Derenko, M., Skonieczna, K., Grzybowski, T., Grosheva, A., Shneider, Y., Rychkov, S., and Zhukova, O. (2017). Mitogenomic diversity in Russians and Poles. Forensic Sci. Int. Genet. *30*, 51–56. 10.1016/j.fsigen.2017.06.003.

28. Skonieczna, K., Malyarchuk, B., Jawień, A., Marszałek, A., Banaszkiewicz, Z., Jarmocik, P., and Grzybowski, T. (2018). Mitogenomic differences between the normal and tumor cells of colorectal cancer patients. Hum. Mutat. *39*, 691–701. 10.1002/humu.23402.

29. Diroma, M.A., Modi, A., Lari, M., Sineo, L., Caramelli, D., and Vai, S. (2021). New Insights Into Mitochondrial DNA Reconstruction and Variant Detection in Ancient Samples. Front. Genet. *12*, 619950. 10.3389/fgene.2021.619950.

30. Behar, D.M., Metspalu, E., Kivisild, T., Rosset, S., Tzur, S., Hadid, Y., Yudkovsky, G., Rosengarten, D., Pereira, L., Amorim, A., et al. (2008). Counting the founders: the matrilineal genetic ancestry of the Jewish Diaspora. PLoS One *3*, e2062. 10.1371/journal.pone.0002062.

31. Santoro, A., Balbi, V., Balducci, E., Pirazzini, C., Rosini, F., Tavano, F., Achilli, A., Siviero, P., Minicuci, N., Bellavista, E., et al. (2010). Evidence for sub-haplogroup h5 of mitochondrial DNA as a risk factor for late onset Alzheimer's disease. PLoS One *5*, e12037. 10.1371/journal.pone.0012037.

32. Emery, M.V., Duggan, A.T., Murchie, T.J., Stark, R.J., Klunk, J., Hider, J., Eaton, K., Karpinski, E., Schwarcz, H.P., Poinar, H.N., et al. (2018). Ancient Roman mitochondrial genomes and isotopes reveal relationships and geographic origins at the local and pan-Mediterranean scales. Journal of Archaeological Science: Reports *20*, 200–209. 10.1016/j.jasrep.2018.04.036.

33. Coble, M.D., Just, R.S., O'Callaghan, J.E., Letmanyi, I.H., Peterson, C.T., Irwin, J.A., and Parsons, T.J. (2004). Single nucleotide polymorphisms over the entire mtDNA genome that increase the power of forensic testing in Caucasians. Int. J. Legal Med. *118*, 137–146. 10.1007/s00414-004-0427-6.

34. Fregel, R., Méndez, F.L., Bokbot, Y., Martín-Socas, D., Camalich-Massieu, M.D., Santana, J., Morales, J., Ávila-Arcos, M.C., Underhill, P.A., Shapiro, B., et al. (2018). Ancient genomes from North Africa evidence prehistoric migrations to the Maghreb from both the Levant and Europe. Proc. Natl. Acad. Sci. U. S. A. *115*, 6774–6779. 10.1073/pnas.1800851115.

35. Zalloua, P., Collins, C.J., Gosling, A., Biagini, S.A., Costa, B., Kardailsky, O., Nigro, L., Khalil, W., Calafell, F., and Matisoo-Smith, E. (2018). Ancient DNA of Phoenician remains indicates discontinuity in the settlement history of Ibiza. Sci. Rep. *8*, 1–15. 10.1038/s41598-018-35667-y.

36. de Araujo, L.F., Fonseca, A.S., Muys, B.R., Plaça, J.R., Bueno, R.B.L., Lorenzi, J.C.C., Santos, A.R.D., Molfetta, G.A., Zanette, D.L., Souza, J.E.S., et al. (2015). Mitochondrial genome instability in colorectal adenoma and adenocarcinoma. Tumour Biol. *36*, 8869–8879. 10.1007/s13277-015-3640-7.

37. Gómez-Durán, A., Pacheu-Grau, D., López-Gallardo, E., Díez-Sánchez, C., Montoya, J., López-Pérez, M.J., and Ruiz-Pesini, E. (2010). Unmasking the causes of multifactorial disorders: OXPHOS differences between mitochondrial haplogroups. Hum. Mol. Genet. *19*, 3343–3353. 10.1093/hmg/ddq246.

38. Zheng, H.-X., Li, L., Jiang, X.-Y., Yan, S., Qin, Z., Wang, X., and Jin, L. (2017). MtDNA genomes reveal a relaxation of selective constraints in low-BMI individuals in a Uyghur population. Hum. Genet. *136*, 1353–1362. 10.1007/s00439-017-1829-0.

39. Aboukhalid, R., Sturk-Andreaggi, K., Bouabdellah, M., Squalli, D., Irwin, J.A., and Amzazi, S. (2013). Mitochondrial DNA control region variation from samples of the Moroccan population. Int. J. Legal Med. *127*, 757–759. 10.1007/s00414-012-0813-4.

40. De Fanti, S., Barbieri, C., Sarno, S., Sevini, F., Vianello, D., Tamm, E., Metspalu, E., van Oven, M., Hübner, A., Sazzini, M., et al. (2015). Fine Dissection of Human Mitochondrial DNA Haplogroup HV Lineages Reveals Paleolithic Signatures from European Glacial Refugia. PLoS One *10*, e0144391. 10.1371/journal.pone.0144391.

41. Margaryan, A., Derenko, M., Hovhannisyan, H., Malyarchuk, B., Heller, R., Khachatryan, Z., Avetisyan, P., Badalyan, R., Bobokhyan, A., Melikyan, V., et al. (2017). Eight Millennia of Matrilineal Genetic Continuity in the South Caucasus. Curr. Biol. *27*, 2023-2028.e7. 10.1016/j.cub.2017.05.087.

42. Pala, M., Olivieri, A., Achilli, A., Accetturo, M., Metspalu, E., Reidla, M., Tamm, E., Karmin, M., Reisberg, T., Hooshiar Kashani, B., et al. (2012). Mitochondrial DNA signals of late glacial recolonization of Europe from near eastern refugia. Am. J. Hum. Genet. *90*, 915–924. 10.1016/j.ajhg.2012.04.003.

43. Rusu, I., Modi, A., Radu, C., Mircea, C., Vulpoi, A., Dobrinescu, C., Bodolică, V., Potârniche, T., Popescu, O., Caramelli, D., et al. (2019). Mitochondrial ancestry of medieval individuals carelessly interred in a multiple burial from southeastern Romania. Sci. Rep. *9*, 1–12. 10.1038/s41598-018-37760-8.

44. Furtwängler, A., Rohrlach, A.B., Lamnidis, T.C., Papac, L., Neumann, G.U., Siebke, I., Reiter, E., Steuri, N., Hald, J., Denaire, A., et al. (2020). Ancient genomes reveal social and genetic structure of Late Neolithic Switzerland. Nat. Commun. *11*, 1915. 10.1038/s41467-020-15560-x.

45. Tassi, F., Vai, S., Ghirotto, S., Lari, M., Modi, A., Pilli, E., Brunelli, A., Susca, R.R., Budnik, A., Labuda, D., et al. (2017). Genome diversity in the Neolithic Globular Amphorae culture and the spread of Indo-European languages. Proceedings of the Royal Society B: Biological Sciences *284*, 20171540. 10.1098/rspb.2017.1540.

46. González-Fortes, G., Tassi, F., Trucchi, E., Henneberger, K., Paijmans, J.L.A., Díez-Del-Molino, D., Schroeder, H., Susca, R.R., Barroso-Ruíz, C., Bermudez, F.J., et al. (2019). A western route of prehistoric human migration from Africa into the Iberian Peninsula. Proc. Biol. Sci. *286*, 20182288. 10.1098/rspb.2018.2288.

47. Cardoso, S., Valverde, L., Alfonso-Sánchez, M.A., Palencia-Madrid, L., Elcoroaristizabal, X., Algorta, J., Catarino, S., Arteta, D., Herrera, R.J., Zarrabeitia, M.T., et al. (2013). The Expanded mtDNA Phylogeny of the Franco-Cantabrian Region Upholds the Pre-Neolithic Genetic Substrate of Basques. PLoS ONE *8*, e67835. 10.1371/journal.pone.0067835.

48. Juras, A., Ehler, E., Chyleński, M., Pospieszny, Ł., Spinek, A.E., Malmström, H., Krzewińska, M., Szostek, K., Pasterkiewicz, W., Florek, M., et al. (2021). Maternal genetic origin of the late and final Neolithic human populations from present-day Poland. Am. J. Phys. Anthropol. *176*, 223–236. 10.1002/ajpa.24372.

49. Coia, V., Cipollini, G., Anagnostou, P., Maixner, F., Battaggia, C., Brisighelli, F., Gómez-Carballa, A., Destro Bisol, G., Salas, A., and Zink, A. (2016). Whole mitochondrial DNA sequencing in Alpine populations and the genetic history of the Neolithic Tyrolean Iceman. Sci. Rep. *6*, 18932. 10.1038/srep18932.

50. Hsouna, S., Ben Halim, N., Lasram, K., Meiloud, G., Arfa, I., Kerkeni, E., Romdhane, L., Jamoussi, H., Bahri, S., Ben Ammar, S., et al. (2016). Study of the T16189C variant and mitochondrial lineages in Tunisian and overall Mediterranean region. Mitochondrial DNA A DNA Mapp Seq Anal *27*, 1558–1563. 10.3109/19401736.2014.953136.

51. Pereira, J.B., Costa, M.D., Vieira, D., Pala, M., Bamford, L., Harich, N., Cherni, L., Alshamali, F., Hatina, J., Rychkov, S., et al. (2017). Reconciling evidence from ancient and contemporary genomes: a major source for the European Neolithic within Mediterranean Europe. Proceedings of the Royal Society B: Biological Sciences *284*, 20161976. 10.1098/rspb.2016.1976.

52. Barbieri, C., Whitten, M., Beyer, K., Schreiber, H., Li, M., and Pakendorf, B. (2012). Contrasting maternal and paternal histories in the linguistic context of Burkina Faso. Mol. Biol. Evol. *29*, 1213–1223. 10.1093/molbev/msr291.

53. Kivisild, T., Shen, P., Wall, D.P., Do, B., Sung, R., Davis, K., Passarino, G., Underhill, P.A., Scharfe, C., Torroni, A., et al. (2006). The role of selection in the evolution of human mitochondrial genomes. Genetics *172*, 373–387. 10.1534/genetics.105.043901.

54. Cerezo, M., Achilli, A., Olivieri, A., Perego, U.A., Gómez-Carballa, A., Brisighelli, F., Lancioni, H., Woodward, S.R., López-Soto, M., Carracedo, A., et al. (2012). Reconstructing ancient mitochondrial DNA links between Africa and Europe. Genome Res. *22*, 821–826. 10.1101/gr.134452.111.

55. Herrnstadt, C., Elson, J.L., Fahy, E., Preston, G., Turnbull, D.M., Anderson, C., Ghosh, S.S., Olefsky, J.M., Beal, M.F., Davis, R.E., et al. (2002). Reduced-median-network analysis of complete mitochondrial DNA coding-region sequences for the major African, Asian, and European haplogroups. Am. J. Hum. Genet. *70*, 1152–1171. 10.1086/339933.

56. Kujanová, M., Pereira, L., Fernandes, V., Pereira, J.B., and Cerný, V. (2009). Near eastern neolithic genetic input in a small oasis of the Egyptian Western Desert. Am. J. Phys. Anthropol. *140*, 336–346. 10.1002/ajpa.21078.

57. Hernández, C.L., Soares, P., Dugoujon, J.M., Novelletto, A., Rodríguez, J.N., Rito, T., Oliveira, M., Melhaoui, M., Baali, A., Pereira, L., et al. (2015). Early Holocenic and Historic mtDNA African Signatures in the Iberian Peninsula: The Andalusian Region as a Paradigm. PLoS One *10*, e0139784. 10.1371/journal.pone.0139784.

58. Barbieri, C., Vicente, M., Oliveira, S., Bostoen, K., Rocha, J., Stoneking, M., and Pakendorf, B. (2014). Migration and interaction in a contact zone: mtDNA variation among Bantu-speakers in Southern Africa. PLoS One *9*, e99117. 10.1371/journal.pone.0099117.

59. Pardiñas, A.F., Martínez, J.L., Roca, A., García-Vazquez, E., and López, B. (2014). Over the sands and far away: interpreting an Iberian mitochondrial lineage with ancient Western African origins. Am. J. Hum. Biol. *26*, 777–783. 10.1002/ajhb.22601.

60. Barbieri, C., Butthof, A., Bostoen, K., and Pakendorf, B. (2013). Genetic perspectives on the origin of clicks in Bantu languages from southwestern Zambia. Eur. J. Hum. Genet. *21*, 430–436. 10.1038/ejhg.2012.192.

61. Behar, D.M., Villems, R., Soodyall, H., Blue-Smith, J., Pereira, L., Metspalu, E., Scozzari, R., Makkan, H., Tzur, S., Comas, D., et al. (2008). The dawn of human matrilineal diversity. Am. J. Hum. Genet. *82*, 1130–1140. 10.1016/j.ajhg.2008.04.002.

62. Collins, D.W., Gudiseva, H.V., Trachtman, B.T., Jerrehian, M., Gorry, T., Merritt, W.T., 3rd, Rhodes, A.L., Sankar, P.S., Regina, M., Miller-Ellis, E., et al. (2013). Mitochondrial sequence variation in African-American primary open-angle glaucoma patients. PLoS One *8*, e76627. 10.1371/journal.pone.0076627.

63. Seoane, M., Mosquera-Miguel, A., Gonzalez, T., Fraga, M., Salas, A., and Costoya, J.A. (2011). The mitochondrial genome is a “genetic sanctuary” during the oncogenic process. PLoS One *6*, e23327. 10.1371/journal.pone.0023327.

64. Pennarun, E., Kivisild, T., Metspalu, E., Metspalu, M., Reisberg, T., Moisan, J.-P., Behar, D.M., Jones, S.C., and Villems, R. (2012). Divorcing the Late Upper Palaeolithic demographic histories of mtDNA haplogroups M1 and U6 in Africa. BMC Evol. Biol. *12*, 234. 10.1186/1471-2148-12-234.

65. Maca-Meyer, N., González, A.M., Larruga, J.M., Flores, C., and Cabrera, V.M. (2001). Major genomic mitochondrial lineages delineate early human expansions. BMC Genet. *2*, 13. 10.1186/1471-2156-2-13.

66. Larruga, J.M., Marrero, P., Abu-Amero, K.K., Golubenko, M.V., and Cabrera, V.M. (2017). Carriers of mitochondrial DNA macrohaplogroup R colonized Eurasia and Australasia from a southeast Asia core area. BMC Evol. Biol. *17*, 115. 10.1186/s12862-017-0964-5.

67. Soini, H.K., Moilanen, J.S., Vilmi-Kerälä, T., Finnilä, S., and Majamaa, K. (2013). Mitochondrial DNA variant m.15218A > G in Finnish epilepsy patients who have maternal relatives with epilepsy, sensorineural hearing impairment or diabetes mellitus. BMC Med. Genet. *14*, 73. 10.1186/1471-2350-14-73.

68. Montiel-Sosa, F., Ruiz-Pesini, E., Enríquez, J.A., Marcuello, A., Díez-Sánchez, C., Montoya, J., Wallace, D.C., and López-Pérez, M.J. (2006). Differences of sperm motility in mitochondrial DNA haplogroup U sublineages. Gene *368*, 21–27. 10.1016/j.gene.2005.09.015.

69. Knipper, C., Mittnik, A., Massy, K., Kociumaka, C., Kucukkalipci, I., Maus, M., Wittenborn, F., Metz, S.E., Staskiewicz, A., Krause, J., et al. (2017). Female exogamy and gene pool diversification at the transition from the Final Neolithic to the Early Bronze Age in central Europe. Proc. Natl. Acad. Sci. U. S. A. *114*, 10083–10088. 10.1073/pnas.1706355114.

70. Secher, B., Fregel, R., Larruga, J.M., Cabrera, V.M., Endicott, P., Pestano, J.J., and González, A.M. (2014). The history of the North African mitochondrial DNA haplogroup U6 gene flow into the African, Eurasian and American continents. BMC Evol. Biol. *14*, 109. 10.1186/1471-2148-14-109.

71. Lippold, S., Xu, H., Ko, A., Li, M., Renaud, G., Butthof, A., Schröder, R., and Stoneking, M. (2014). Human paternal and maternal demographic histories: insights from high-resolution Y chromosome and mtDNA sequences. Investig. Genet. *5*, 13. 10.1186/2041-2223-5-13.

72. Maca-Meyer, N., González, A.M., Pestano, J., Flores, C., Larruga, J.M., and Cabrera, V.M. (2003). Mitochondrial DNA transit between West Asia and North Africa inferred from U6 phylogeography. BMC Genet. *4*, 15. 10.1186/1471-2156-4-15.

73. Olivieri, A., Achilli, A., Pala, M., Battaglia, V., Fornarino, S., Al-Zahery, N., Scozzari, R., Cruciani, F., Behar, D.M., Dugoujon, J.-M., et al. (2006). The mtDNA legacy of the Levantine early Upper Palaeolithic in Africa. Science *314*, 1767–1770. 10.1126/science.1135566.

74. Achilli, A., Rengo, C., Battaglia, V., Pala, M., Olivieri, A., Fornarino, S., Magri, C., Scozzari, R., Babudri, N., Santachiara-Benerecetti, A.S., et al. (2005). Saami and Berbers--an unexpected mitochondrial DNA link. Am. J. Hum. Genet. *76*, 883–886. 10.1086/430073.

75. Kloss-Brandstätter, A., Weissensteiner, H., Erhart, G., Schäfer, G., Forer, L., Schönherr, S., Pacher, D., Seifarth, C., Stöckl, A., Fendt, L., et al. (2015). Validation of Next-Generation Sequencing of Entire Mitochondrial Genomes and the Diversity of Mitochondrial DNA Mutations in Oral Squamous Cell Carcinoma. PLoS One *10*, e0135643. 10.1371/journal.pone.0135643.

76. Chyleński, M., Ehler, E., Somel, M., Yaka, R., Krzewińska, M., Dabert, M., Juras, A., and Marciniak, A. (2019). Ancient Mitochondrial Genomes Reveal the Absence of Maternal Kinship in the Burials of Çatalhöyük People and Their Genetic Affinities. Genes *10*. 10.3390/genes10030207.

77. Fernandes, V., Alshamali, F., Alves, M., Costa, M.D., Pereira, J.B., Silva, N.M., Cherni, L., Harich, N., Cerny, V., Soares, P., et al. (2012). The Arabian cradle: mitochondrial relicts of the first steps along the southern route out of Africa. Am. J. Hum. Genet. *90*, 347–355. 10.1016/j.ajhg.2011.12.010.

Table S3. mtDNA haplogroups counts for current-day insular populations of Canary Islands. Related to the main text.

Haplogroup	El Hierro	La Palma	La Gomera	Tenerife	Gran Canaria	Fuerteventura	Lanzarote	Total
A2ar1	0	0	0	0	1	0	0	1
A2as1	0	0	0	0	0	1	0	1
H	3	1	0	3	18	0	0	25
H+152	0	0	0	0	6	0	0	6
H1	0	0	0	1	7	0	1	9
H1+152	0	0	1	0	2	0	0	3
H1+16189	0	0	2	0	0	1	0	3
H11a	0	0	0	1	0	0	0	1
H13a1b	0	0	0	0	0	1	0	1
H14b2a	0	0	0	1	0	0	0	1
H1a1	0	1	0	0	0	0	0	1
H1a3	0	0	0	1	0	0	0	1
H1ao1	3	0	0	0	0	0	0	3
H1ap1	0	0	1	1	0	0	1	3
H1au	0	0	0	0	0	0	1	1
H1b	0	4	0	1	0	0	0	5
H1bb	0	0	0	0	0	1	0	1
H1br	0	0	0	2	3	0	0	5
H1bs	0	0	1	1	0	0	0	2
H1bv1	0	0	0	0	1	0	0	1
H1bw	0	0	1	2	0	0	0	3
H1c3	0	0	0	0	1	0	0	1
H1c3a	0	0	0	1	0	0	0	1
H1c4	0	1	0	0	0	0	0	1
H1cf	0	1	2	7	3	5	6	24
H1e	0	1	0	0	0	0	0	1
H1e1	0	0	0	2	0	0	0	2
H1e1a	1	0	3	2	8	4	5	23
H1h1	0	1	0	0	0	0	0	1
H1j	0	0	0	1	0	0	0	1
H1n6	0	0	0	1	0	0	0	1
H1q	0	0	0	2	0	0	0	2
H1q2	0	0	0	0	1	0	0	1
H1t	2	0	0	0	1	0	0	3
H1u	0	0	0	4	0	0	0	4
H1v	0	0	0	1	0	0	1	2
H20a1a	0	0	0	0	2	0	0	2
H24	0	0	0	0	0	2	0	2
H27	0	0	0	0	1	0	0	1
H2a1+146	0	0	0	0	4	0	0	4
H2a5a	0	2	0	0	0	0	0	2
H3	0	0	0	0	1	1	0	2
H3+152	0	0	0	0	1	0	1	2
H30a	0	0	0	2	0	0	0	2
H3an	0	0	0	0	0	0	1	1
H3ap	0	0	0	3	0	0	0	3
H3b1b1	0	0	0	0	1	0	0	1
H3c	1	0	1	1	0	0	0	3
H3c2	0	0	0	0	4	0	0	4
H3g	0	1	0	0	0	0	0	1
H3k	0	0	0	1	0	0	0	1
H3r	0	0	3	2	3	0	0	8
H3w	0	0	0	3	0	0	0	3
H41	0	0	0	2	0	0	0	2
H43	0	0	0	2	0	0	0	2
H4a1a3a	0	0	0	0	2	0	0	2
H4a1c2	0	0	0	0	1	0	0	1
H5	0	0	0	0	1	0	0	1
H5a1j	0	0	0	0	1	0	0	1
H5a2	0	0	0	1	0	0	0	1
H5a3a1	0	0	0	0	1	0	0	1
H5b	0	0	0	0	2	0	0	2
H6a1a	0	4	0	2	0	0	2	8
H6a1a7	0	0	0	0	2	0	0	2
H6a1b2	1	0	1	2	1	0	0	5
H7	2	0	0	7	2	1	0	12
H71	1	0	0	0	0	0	0	1
HV+16311	1	0	0	0	0	0	3	4
HV0+195	0	1	0	0	2	0	0	3
HV0g	0	0	1	1	0	0	0	2
HV9	0	1	0	0	0	0	0	1
I	0	0	2	0	0	0	0	2
I1a1	0	0	1	0	0	3	0	4
I2c	0	0	0	1	0	0	0	1
I3a	0	0	0	0	6	0	0	6
J1b1a1f	0	0	0	0	0	1	0	1
J1b1b1d	0	0	0	1	0	0	0	1
J1c15	0	0	0	1	0	0	0	1
J1c1b	0	4	0	0	1	0	0	5
J1c2	0	0	0	0	1	0	3	4
J1c2a1	0	2	0	0	0	0	0	2
J1c2a3	0	1	0	0	0	0	0	1
J1c2c1	0	0	0	1	0	0	0	1
J1c2c3	0	0	0	0	0	1	2	3
J1c2e2	0	0	0	2	0	0	0	2
J1c2h	0	0	0	1	0	0	0	1
J1c5a	0	0	0	0	1	0	0	1
J1c7	0	0	0	3	0	0	0	3
J2a1a1	0	3	0	1	0	0	0	4
J2a1a1e	0	0	0	0	1	0	0	1
J2a2d1a	26	3	8	3	17	1	6	64
J2b1a2	0	0	0	1	0	0	0	1
J2b1a2a	0	0	1	0	0	0	0	1
K1a	5	0	0	2	0	0	3	10
K1a14	0	0	0	0	1	0	0	1
K1a1b1	0	0	0	0	5	0	0	5
K1a1b1c	0	0	0	4	0	0	0	4

K1a4a1	0	1	3	6	0	0	6	16
K1a4a2a	0	0	1	0	3	0	0	4
K1a4f1	0	0	0	0	1	0	0	1
K1b1a1c	0	0	0	1	1	0	0	2
K1b1a2	2	0	0	0	0	0	1	3
K2b1a1a	0	0	0	0	4	0	0	4
L0a1a1	0	0	0	0	1	0	0	1
L0a1a3	0	0	1	0	0	0	0	1
L1b1a	0	0	0	0	2	0	0	2
L1b1a10	0	0	0	0	2	1	0	3
L1b1a2a	0	0	0	0	1	0	0	1
L1b1a6	0	1	0	0	0	0	0	1
L1c3a1a	0	0	0	1	0	0	1	2
L1c3b1	0	0	0	0	3	0	0	3
L2a1+143+16189	0	0	0	0	0	1	0	1
L2a1a2b	0	0	2	0	0	0	0	2
L2a1a3b	0	0	0	0	1	0	0	1
L2a1c	0	0	1	1	2	1	3	8
L2a1c3a	0	0	0	1	0	0	0	1
L2a1c4	1	3	4	2	0	0	3	13
L2a1f1	0	0	0	0	0	0	2	2
L2e	0	0	0	0	1	0	0	1
L3b1a+@16124	0	2	0	2	1	0	0	5
L3b1a5	0	0	0	0	1	0	0	1
L3b1a9	0	0	0	2	0	0	0	2
L3b2a	0	0	0	1	0	0	0	1
L3d1'2'3'4'5'6	0	0	0	0	1	0	0	1
L3d1b1	0	0	0	0	1	1	0	2
L3d1b3a	0	0	2	0	0	0	0	2
L3e1	0	0	0	3	0	0	0	3
L3e1e	0	1	1	1	0	1	0	4
L3e3a	0	0	1	0	0	0	0	1
L3e4a	0	0	0	0	2	0	0	2
L3f1b1a	0	0	0	2	0	0	0	2
L3f1b6	0	1	0	0	0	0	0	1
L3x2b	0	1	0	1	0	0	0	2
M1b1a	0	0	0	0	2	0	4	6
T1a	1	0	11	0	2	2	5	21
T1a1	0	0	1	3	0	0	0	4
T1a2a	0	5	0	0	0	0	0	5
T1a6	0	0	0	3	0	0	0	3
T2a1b1a2	0	0	0	1	0	0	0	1
T2b	0	0	0	0	1	0	0	1
T2b+152	0	3	0	0	1	0	1	5
T2b11	0	0	0	1	0	0	0	1
T2b3+151	0	1	1	3	0	0	2	7
T2b4+152	0	3	0	1	0	0	0	4
T2c1+146	0	0	1	0	9	1	0	11
T2c1a	1	0	0	0	0	0	0	1
T2c1a2	1	1	0	2	0	0	0	4
T2c1d1c	2	1	2	0	1	2	14	22
T2c1d2	6	0	1	6	10	0	1	24
T2e1	0	0	0	1	0	0	0	1
T2f2	0	0	0	1	0	0	0	1
U2e1a1	0	0	0	2	0	0	0	2
U2e1b1	0	0	0	0	5	0	0	5
U2e2a1a	0	3	0	0	0	0	0	3
U3a1	1	0	1	0	0	0	0	2
U4a1a	0	0	0	0	2	0	0	2
U4a2a	0	0	0	0	3	0	0	3
U4b3	0	0	0	0	1	0	0	1
U4c1	3	2	1	1	0	1	0	8
U5a1a1m	0	0	0	1	0	0	0	1
U5a1a2a	0	2	0	0	0	0	0	2
U5a1b4	11	0	0	0	0	0	0	11
U5a1d2a	0	0	0	0	1	0	0	1
U5a2a1	0	1	0	3	0	0	0	4
U5a2b	0	0	0	1	0	0	0	1
U5b1b1	0	0	0	0	1	0	0	1
U5b1b1+@16192	0	1	0	1	0	0	0	2
U5b1e	0	0	4	0	1	2	0	7
U5b1f1	0	0	0	2	1	1	0	4
U5b1g	0	0	1	0	0	0	0	1
U5b2a+@16192	0	0	1	1	0	0	0	2
U5b2a1a	0	0	0	0	3	0	0	3
U5b2b3a	0	4	0	1	0	0	0	5
U6a1a1	0	0	0	1	0	0	0	1
U6a3a1	0	0	1	4	0	0	1	6
U6a3b	0	0	1	0	0	0	0	1
U6a5	0	0	0	0	1	0	0	1
U6a6b1	0	0	0	0	0	0	1	1
U6a7a1	0	4	0	1	0	0	0	5
U6a7b1	0	2	0	0	0	0	0	2
U6b1a	19	7	50	7	15	7	21	126
U6b1a1	5	7	11	4	4	1	4	36
U6b3a	0	0	1	0	0	0	0	1
U6c1	0	1	1	4	2	3	1	12
V	5	0	0	0	0	0	0	5
V+@16298	0	2	0	0	1	0	0	3
V+@72	0	0	0	1	0	0	0	1
V17	0	1	0	0	0	1	0	2
V2	0	0	0	4	0	0	0	4
V20	0	0	1	0	0	0	3	4
V3a1	0	0	0	1	0	0	0	1
V9	0	0	0	0	1	0	1	2
W1e1	0	3	0	0	0	0	0	3
W5a1a	0	1	0	1	0	0	0	2
W6a	0	0	0	1	0	3	0	4
X2b+226	1	0	0	2	0	0	0	3
X2c1j	1	2	0	0	0	0	0	3
X2d2	0	0	0	0	1	0	0	1
X3a	0	2	0	0	1	0	0	3

Table S4. mtDNA-based pairwise matches between current-day insular populations and their putative continental colonizers (%). Related to the main text.

Islands	Galicia	Portugal	Andalusia	Basque Country	Other	Iberia	Italy	North Africa	Atlantic	sub-Saharan Africa
El Hierro	2(17)	5(41)	3(25)	2(17)	0	12(50)	2(8)	2(8)	7(29)	1(4)
La Palma	6(33)	2(11)	3(17)	4(22)	3(17)	18(43)	4(10)	6(14)	10(24)	4(9)
La Gomera	3(21)	4(29)	2(15)	3(21)	2(14)	14(35)	3(7)	9(23)	8(20)	6(15)
Tenerife	6(18)	11(33)	6(18)	4(12)	6(18)	33(41)	6(7)	19(23)	15(19)	8(10)
Gran Canaria	9(28)	7(22)	5(16)	6(19)	5(15)	32(35)	9(10)	18(20)	14(15)	18(20)
Fuerteventura	3(23)	3(23)	3(23)	3(23)	1(8)	13(45)	1(3)	6(21)	4(14)	5(17)
Lanzarote	1(10)	4(40)	2(20)	1(10)	2(20)	9(25)	3(8)	15(42)	5(14)	4(11)
Average	21.43	28.43	19.14	17.71	13.14	39.14	7.57	21.57	19.29	12.29
SD	7.55	10.71	3.72	5.02	6.94	8.21	2.37	10.53	5.65	5.41

Table S5. Coalescence ages for the putative autochthonous Canarian mtDNA lineages calculated using two approaches, the rho statistic and Bayesian inference (Beast). For the rho statistic, two alternative mtDNA substitution rates were applied, 1) Soares et al. (2009) and 2) Cabrera et al. (2021). For Beast, only the latter mtDNA substitution rate was used. Related to the main text.

Rho 1)			Rho 2)			Beast 2)		
Lineages	Age (years)	95% CI	Lineages	Age (years)	95% CI	Lineages	Age (years)	95% CI
H1e1a	5869	5785-5953	H1e1a	2268	2235-2300	J2a2d1a	1628	841-2556
J2a2d1a	5047	4970-5125	J2a2d1a	1949	1919-1979	H1e1a	1511	605-2654
H1cf	4416	4353-4479	H1cf	1707	1683-1732	H1cf	1365	507-2311
U6c1	4266	4196-4337	U6c1	1649	1622-1677	U6c1	1291	392-2477
U6b1a	4152	4092-4212	U6b1a	1602	1579-1625	X3a	1238	216-2589
X3a	2245	2212-2277	X3a	867	854-879	T2c1d2	1105	437-1890
T2c1d2	1481	1464-1498	T2c1d2	572	551-588	U6b1a	827	407-1306
H4a1+16362	1474	1426-1522	H4a1+16362	569	566-579	H4a1+16362	405	0-1236
L3b1a-16124	982	958-1006	L3b1a-16124	380	370-389	L3b1a-16124	297	0-906