**Supplementary material**

**Deciphering the West Eurasian Genetic Footprints in Ancient South India**

Bhavna Ahlawat 1§· Lomous Kumar2§ · P J Cherian3, 4 · J S Sehrawat1 · Niraj Rai5\* · Kumarasamy Thangaraj 2, 6\*

1 Department of Anthropology, Panjab University, Chandigarh, 160014, India

2 CSIR-Centre for Cellular and Molecular Biology, Uppal Road, Hyderabad 500007, India

3 PAMA Institute for the Advancement of Transdisciplinary Archaeological Sciences, Pattanam Archaeological Site, 683522, India.

4 Kerala Council for Historical Research & Director Pattanam Excavations

5 Birbal Sahni Institute of Palaeosciences, Lucknow, 226007, India

6 Centre for DNA Fingerprinting and Diagnostics, Uppal, Hyderabad 500007, India

**Table S1 : Genotype data from 95 ancestry mtDNA markers:**

|  |  |  |
| --- | --- | --- |
| **mtDNA mutation sites** |  | **Haplogroups** |
|  | **HV** | **T1a9** | **JT** | **HV4b** | **M2a1a3** | **M6** | **R1** | **M3a1** | **R1** | **U1** | **UC** | **H3Z1** |
|  | Sample codes |
| **CRS** | **PT1** | **PT2** | **PT3** | **PT4** | **PT5** | **PT6** | **PT7** | **PT8** | **PT9** | **PT10** | **PT11** | **PT13** |
| 2706 | G | - | - | - | - | - | - | - | - | - | - | - | - |
| 13167 | A | A | A | A |  | A | A | A | A | - | - | A | A |
| 9540 | C | CT | T | CT | C | C | C | CT | C | C | C | - | C |
| 3543 | C | C | C | C | C | C | C | C | C | - | C | C | C |
| 3010 | G | G | G | G | A | G | G | G | G | - | - | - | G |
| 1524 | A | A | A | A | A | A | A | A | A | A | A | A | A |
| 14800 | C | C | C | - | - | - | - | - | - | - | - | - | - |
| 7094 | T | T | T | T | T | T | T | T | - | - | - | T | - |
| 13710 | A | - | A | A | - | A | - | - | - | - | - | - | - |
| 12133 | C | C | C | C | - | C | C | C | - | C | - | C | - |
| 2045 | A | A | A | A | A | A | A | A | - | A | - | A | A |
| 3384 | A | A | A | A | - | A | - | - | A | - | - | A | - |
| 15607 | A | A | A | A |  | A | - | A | A | GA | A | A | - |
| 7859 | G | G | G | G | G | G | G | G | G | - | G | G | - |
| 12879 | T | T | C | C | T | T | T | T | - | - | C | T | T |
| 16344 | C | C | C | C |  | C |  |  | C | - | - | C | - |
| 482 | T | T | T | T | T | C | C | T | - | - | - | T | - |
| 16274 | G | G | G | G | G | G | G | G | - | - | - | - | - |
| 16111 | C | C | T | T | - | C | - | - | - | - | C | C | - |
| 12612 | A | A | A | A |  | A | A | A | A | - | - | A | A |
| 15754 | C | C | C | C | C | C | C | C | - | - | - | C | C |
| 8697 | G | G | G | G | - | G | G | G | G | - | - | G | G |
| 5783 | G | G | G | G | - | G | G | G | - | - | G | G | - |
| 10727 | C | C | C | C | C | C | C | C | C | - | - | C | - |
| 11215 | C | C | C | C | - | C | - | - | - | - | - | C | - |
| 1453 | A | A | A | A | - | A | - |  | - | - | - | A | - |
| 4065 | A | - | - | - | - | - | - | - | - | - | - | - | - |
| 207 | G | G | G | G | G | A | - | - | - | - | G | G | - |
| 13263 | A | A | A | A | - | A | A | A | A | - | - | A | A |
| 12705 | T | C | C | C | - | T | - | - | - | - | - | - | C |
| 13359 | G | G | G | G | - | G | G | G | G | - | - | G | - |
| 8502 | A | A | A | A | - | A | - | - | - | - | - | - | - |
| 5178 | C | C | C | - | - | C | - | C | C | - | - | - | CA |
| 8414 | C | C | C | C | C | C | C | C | - | - | - | C | - |
| 4703 | T | T | - | T | T | C | - | T | C | - | - | - | - |
| 14905 | G | G | G | G | - | G | G | G | - | - | - | G | G |
| 13135 | G | G | G | G | - | G | G | G | G | - | G | G | AG |
| 6305 | G | G | G | G | - | G | G | G | G | - | - | G | G |
| 11176 | G | G | G | G | - | G | G | G | G | - | G | G | - |
| 12950 | A | A | A | - | - | A | A | A | A | - | A | A | A |
| 4140 | C | C | C | C | - | C | C | C | C | C | - | C | - |
| 12406 | G | G | G | G | G | G | - | G | G | G | - | G | - |
| 12618 | G | G | G | G | G | G | G | G | G | - | - | G | - |
| 3434 | A | A | A | - | A | A | GA | A | A | A | - | A | - |
| 14766 | T | C | T | CT | - | T | T | CT | T | T | T | T | T |
| 16069 | C | C | C | C | T | C | C | C | C | C | - | C | C |
| 8701 | G | A | G | A | A | G | G | A | G | - | A | - | GA |
| 8887 | A | GA | GA | G | GA | GA | GA | G | GA | G | G | GA | GA |
| 11719 | A | G | A | A | G | A | A | AG | A | - | - | A | - |
| 16288 | T | T | T | T | T | T | T | T | T | T | T | - | T |
| 13928 | G | G | G | G | - | G | - | G | G | - | G | CG | G |
| 14569 | G | G | G | G | G | G | G | G | G | - | - | G | G |
| 15452 | C | C | - | C | - | C | CA | C | C | - | - | C | C |
| 16172 | T | T | T | T | T | T | T | T | T | T | - | - | T |
| 4775 | A | A | A | A | - | A | A | - | A | A | - | A | A |
| 9064 | G | G | G | - | - | G | - | - | G | - | - | G | G |
| 12285 | T | T | T | T | - | T | T | T | T | - | - | T | - |
| 13759 | G | G | G | AG | AG | G | AG | AG | G | AG | AG | G | G |
| 10609 | T | T | T | CT | - | T | T | T | T | CT | C | T | - |
| 5301 | A | A | A | - | - | A | G | A | A | - | G | A | - |
| 3348 | A | A | A | - | A | A | A | A | A | - | - | A | A |
| 9180 | A | A | A | A | A | A | A | A | A | A | A | A | A |
| 4907 | T | T | T | T | T | T | T | T | T | - | - | - | T |
| 1736 | A | A | A | A | A | A | - | A | A | A | - | A | - |
| 249 | DEL | A | A | A | - | A | - | A | A | - | - | A | A |
| 1442 | G | G | G | G |  | G | - | G | G | G | - | G | - |
| 1541 | T | T | T | T | T | T | - | T | T | T | - | T | - |
| 9581 | T | T | T | T | - | T | - | T | - | - | T | T | - |
| 12189 | T | T | T | - | - | T | T | T | - | T | T | T | - |
| 12361 | A | A | A | - | - | A | A | - | - | - | A | A | - |
| 16223 | T | C | T | - | - | T | T | CT | T | C | T | CT | C |
| 2755 | A | A | A | - | - | A | - | A | - | - | A | A | - |
| 13104 | A | A | A | A | A | A | A | A | - | - | A | A | A |
| 149 |  | T | T | T | - | T | T | - | - | - | T | T | - |
| 16108 | C | C | C | - | - | C | - | C | C | - | C | C | C |
| 8014 | A | A | A | - | A | A | A | A | - | - | A | A | A |
| 12633 | C | C | C | - | C | C | C | C | - | - | C | C | - |
| 4086 | C | C | C | - | - | C | C | C | C | - | C | C | C |
| 15440 | T | T | T | - | T | T | T | T | T | - | T | T | - |
| 3360 | A | A | A | - | A | A | - | - | A | - | A | A | A |
| 11023 | A | A | A | - | A | A | A | - | - | A | A | A |  |
| 12810 | A | A | A | - | A | A | - | - | - | - | A | A | - |
| 3714 | A | A | A | - | - | A | - | - | - | - | - | - | - |
| 15530 | T | TC | T | C | C | T | TC | C | - | TC | TC | TC | C |
| 13188 | C | C | C | TC | - | C | C | C | - | - | C | C | - |
| 1811 | A | A | A | - | A | A | - | A | - | A | A | A | A |
| 6620 | T | T | T | - | - | T | T | T | - | - | T | T | - |
| 5823 | A | A | A | A | A | A | - | A | - | A | A | A | - |
| 1598 | G | G | G | - | - | G | - | G | - | G | G | G | - |
| 16294 | C | C | C | - | C | C | C | - | C | - | C | C | - |
| 3817 | C | C | C | C | C | C | C | C | C | - | C | C | - |
| 11251 | A | GA | G | - | - | A | - | - | - | - | A | - | - |
| 16327 | C | C | C | C | C | C | C | C | C | C | C | C | C |

* Highlighted yellow color bases are the observe SNP in the samples.

**Table S2: Conventional and Calibrated Radiocarbon age estimates for three Pattanam samples**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sample Data** | **Method** | **Material/ Pretreatment**  | **Measured Radiocarbon Age** | **13C/12C Ratio** | **Conventional Radiocarbon Age(\*)** |
| PT-03 | AMS-Standard delivery | (cremated bone carbonate): bone carbonate extraction | 2080 +/- 30 BP | -24.0 o/oo | 2100 +/- 30 BP |
| PT-04 | AMS-Standard delivery | (cremated bone carbonate): bone carbonate extraction | 1990 +/- 30 BP | -8.7 o/oo | 2260 +/- 30 BP |
| PT- 05 | AMS-Standard delivery | (cremated bone carbonate): bone carbonate extraction | 2130 +/- 30 BP | -9.2 o/oo | 2390 +/- 30 BP |

\*Database used: INTCAL13

References

Mathematics used for calibration scenario

A Simplified Approach to Calibrating C14 Dates, Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2):317-322

References to INTCAL13 database

Reimer PJ et al. IntCal13 and Marine13 radiocarbon age calibration curves 0–50,000 years cal BP. Radiocarbon 55(4):1869–1887.