



Assessment of linkage disequilibrium and haplotype block structure in indigenous cattle populations of Tamil Nadu, India using whole genome sequence data

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Supplementary Table 1. Chromosome-wise mean r^2 values for different distance bins (kb)

| Chromosome no. | <30 | 31-70 | 71-100 | 101-200 | 201-300 | 301-400 | 401-500 | >500 |
|----------------|-------|-------|--------|---------|---------|---------|---------|-------|
| 1 | 0.531 | 0.523 | 0.617 | 0.489 | 0.469 | 0.464 | 0.472 | 0.482 |
| 2 | 0.714 | 0.513 | 0.684 | 0.549 | 0.453 | 0.447 | 0.482 | 0.481 |
| 3 | 0.714 | 0.644 | 0.612 | 0.416 | 0.479 | 0.465 | 0.409 | 0.481 |
| 4 | 0.531 | 0.502 | 0.616 | 0.468 | 0.444 | 0.458 | 0.439 | 0.485 |
| 5 | 0.791 | 0.591 | 0.606 | 0.494 | 0.487 | 0.354 | 0.457 | 0.442 |
| 6 | 0.572 | 0.491 | 0.623 | 0.477 | 0.446 | 0.455 | 0.452 | 0.432 |
| 7 | 0.583 | 0.495 | 0 | 0.769 | 0.584 | 0.529 | 0.466 | 0.483 |
| 8 | 0.533 | 0.511 | 0.613 | 0.491 | 0.483 | 0.484 | 0.455 | 0.482 |
| 9 | 0.563 | 0.485 | 0.606 | 0.417 | 0.457 | 0.472 | 0.426 | 0.462 |
| 10 | 0.689 | 0.523 | 0.615 | 0.468 | 0.46 | 0.466 | 0.453 | 0.468 |
| 11 | 0.565 | 0.839 | 0 | 0.513 | 0.443 | 0.448 | 0.487 | 0.452 |
| 12 | 0.679 | 0.562 | 0.609 | 0.472 | 0.472 | 0.475 | 0.459 | 0.451 |
| 13 | 0.545 | 0.544 | 0.619 | 0.544 | 0.675 | 0.554 | 0.453 | 0.475 |
| 14 | 0.588 | 0.518 | 0.617 | 0.488 | 0.436 | 0.427 | 0.458 | 0.485 |
| 15 | 0.582 | 0.681 | 0 | 0.651 | 0.476 | 0.493 | 0.412 | 0.426 |
| 16 | 0.628 | 0.426 | 0.612 | 0.484 | 0.463 | 0.447 | 0.449 | 0.431 |
| 17 | 0.527 | 0.588 | 0.625 | 0.598 | 0.436 | 0.451 | 0.439 | 0.431 |
| 18 | 0.586 | 0.483 | 0.621 | 0.506 | 0.474 | 0.469 | 0.477 | 0.467 |
| 19 | 0.558 | 0.472 | 0.614 | 0.454 | 0.496 | 0.454 | 0.471 | 0.434 |
| 20 | 0.531 | 0.486 | 0 | 0.461 | 0.429 | 0.428 | 0.435 | 0.483 |
| 21 | 0.574 | 0.494 | 0.655 | 0.446 | 0.414 | 0.396 | 0.451 | 0.484 |
| 22 | 0.589 | 0.514 | 0.654 | 0.507 | 0.496 | 0.489 | 0.487 | 0.468 |
| 23 | 0.623 | 0.486 | 0.669 | 0.506 | 0.495 | 0.497 | 0.481 | 0.475 |
| 24 | 0.589 | 0.507 | 0.602 | 0.472 | 0.483 | 0.509 | 0.449 | 0.444 |
| 25 | 0.623 | 0.524 | 0.612 | 0.54 | 0.71 | 0.749 | 0.584 | 0.422 |
| 26 | 0.595 | 0.499 | 0.614 | 0.437 | 0.551 | 0.533 | 0.531 | 0.484 |
| 27 | 0.529 | 0.518 | 0.608 | 0.466 | 0.492 | 0.475 | 0.546 | 0.482 |
| 28 | 0.576 | 0.572 | 0.629 | 0.469 | 0.531 | 0.509 | 0.468 | 0.427 |
| 29 | 0.574 | 0.553 | 0 | 0.513 | 0.423 | 0.45 | 0.42 | 0.438 |
| Average | 0.595 | 0.536 | 0.516 | 0.502 | 0.489 | 0.477 | 0.464 | 0.461 |

Supplementary Table 2. Summary of haplotype blocks in different chromosomes

| Chromosome no. | Chromosome length (mb) | No. of haplo blocks | No. of SNPs in blocks | Total block length (Mb) | Chromosome block coverage (%) | SNPs in blocks (%) |
|----------------|------------------------|---------------------|-----------------------|-------------------------|-------------------------------|--------------------|
| 1 | 100,000,020 | 23,939 | 92,661 | 3,321,857 | 3.32 | 5.83 |
| 2 | 100,000,020 | 20,171 | 77,834 | 2,937,668 | 2.94 | 4.89 |
| 3 | 100,000,020 | 15,625 | 60,425 | 2,425,990 | 2.43 | 3.80 |
| 4 | 100,000,020 | 22,769 | 86,741 | 2,803,102 | 2.80 | 5.46 |
| 5 | 100,000,020 | 20,218 | 77,195 | 2,646,081 | 2.65 | 4.86 |
| 6 | 100,000,020 | 19,329 | 75,133 | 2,907,133 | 2.91 | 4.73 |
| 7 | 100,000,020 | 17,924 | 68,891 | 2,318,205 | 2.32 | 4.33 |
| 8 | 100,000,020 | 16,764 | 64,520 | 2,332,467 | 2.33 | 4.06 |
| 9 | 100,000,020 | 21,542 | 82,233 | 2,767,874 | 2.77 | 5.17 |
| 10 | 100,000,020 | 18,938 | 72,047 | 2,420,369 | 2.42 | 4.53 |
| 11 | 100,000,020 | 13,720 | 52,933 | 2,050,628 | 2.05 | 3.33 |
| 12 | 85,442,668 | 16,022 | 61,345 | 1,907,417 | 2.23 | 3.86 |
| 13 | 84,433,108 | 12,307 | 47,309 | 1,659,346 | 1.97 | 2.98 |
| 14 | 81,409,030 | 11,323 | 43,874 | 1,690,568 | 2.08 | 2.76 |
| 15 | 84,800,079 | 14,975 | 58,315 | 1,882,798 | 2.22 | 3.67 |
| 16 | 77,906,047 | 10,995 | 42,651 | 1,515,456 | 1.95 | 2.68 |
| 17 | 76,519,027 | 13,075 | 49,694 | 1,539,644 | 2.01 | 3.13 |
| 18 | 65,948,792 | 10,628 | 40,750 | 1,377,078 | 2.09 | 2.56 |
| 19 | 65,317,831 | 9,182 | 35,331 | 1,273,236 | 1.95 | 2.22 |
| 20 | 75,862,604 | 11,551 | 44,537 | 1,528,212 | 2.01 | 2.80 |
| 21 | 69,307,409 | 11,562 | 44,450 | 1,414,046 | 2.04 | 2.79 |
| 22 | 61,892,534 | 11,204 | 41,765 | 1,415,423 | 2.29 | 2.63 |
| 23 | 53,331,160 | 10,096 | 39,766 | 1,215,537 | 2.28 | 2.50 |
| 24 | 65,017,658 | 11,851 | 43,111 | 1,475,042 | 2.27 | 2.71 |
| 25 | 44,044,299 | 10,032 | 40,901 | 1,403,547 | 3.19 | 2.57 |
| 26 | 51,861,174 | 8,548 | 32,773 | 1,055,185 | 2.03 | 2.06 |
| 27 | 48,749,331 | 8,475 | 32,798 | 9,964,88 | 2.04 | 2.06 |
| 28 | 46,105,673 | 9,662 | 37,147 | 1,126,442 | 2.44 | 2.34 |
| 29 | 52,131,593 | 10,850 | 41,988 | 1,209,292 | 2.32 | 2.64 |
| Total | 2,290,080,237 | 413,277 | 1,589,118 | 53,619,643 | Average: 2.34 | |