

# Discriminatory Ability of Hypervariable Variable Number Tandem Repeat Loci in Population-based Analysis of *Mycobacterium tuberculosis* Strains, London, UK

## Technical Appendix

Allelic diversity and discriminative values of VNTR loci

### A. MIRU-ETR loci

| Families                      | HGDI value |              |       |       |       |       |       |       |       |       |       |       |       |       |       |                  |
|-------------------------------|------------|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------------------|
|                               | 2          | 4            | 10    | 16    | 20    | 23    | 24    | 26    | 27    | 31    | 39    | 40    | A     | B     | C     | Mean for 15 loci |
| EAI (N = 395)                 | 0.01       | 0.577        | 0.299 | 0.363 | 0.097 | 0.411 | 0.115 | 0.089 | 0.259 | 0.637 | 0.583 | 0.667 | 0.788 | 0.788 | 0.402 | 0.406            |
| Beijing (N = 131)             | 0          | 0.031        | 0.296 | 0.131 | 0.015 | 0.018 | 0.015 | 0.540 | 0.354 | 0.075 | 0.272 | 0.377 | 0.234 | 0     | 0.089 | 0.163            |
| CAS (N = 555)                 | 0.057      | 0.015        | 0.701 | 0.342 | 0.046 | 0.053 | 0.015 | 0.702 | 0.044 | 0.451 | 0.236 | 0.49  | 0.315 | 0.04  | 0.014 | 0.235            |
| T (N = 371)                   | 0.119      | 0.247        | 0.693 | 0.630 | 0.177 | 0.393 | 0.049 | 0.665 | 0.197 | 0.352 | 0.109 | 0.751 | 0.585 | 0.210 | 0.497 | 0.378            |
| Haarlem (N = 207)             | 0.085      | 0.131        | 0.678 | 0.372 | 0.325 | 0.557 | 0.04  | 0.413 | 0.145 | 0.209 | 0.076 | 0.495 | 0.302 | 0.315 | 0.463 | 0.307            |
| S (N = 20)                    | 0.468      | 0.485        | 0.298 | 0.432 | 0.426 | 0.511 | 0     | 0.679 | 0.105 | 0.433 | 0.1   | 0.684 | 0.526 | 0.205 | 0.279 | 0.375            |
| X (N = 108)                   | 0.262      | 0.319        | 0.525 | 0.073 | 0.230 | 0.160 | 0     | 0.493 | 0.091 | 0.435 | 0.073 | 0.731 | 0.353 | 0.232 | 0.704 | 0.312            |
| LAM (N = 350)                 | 0.173      | 0.045        | 0.570 | 0.600 | 0.457 | 0.628 | 0.011 | 0.411 | 0.401 | 0.211 | 0.04  | 0.603 | 0.567 | 0.405 | 0.29  | 0.361            |
| <i>M. bovis</i> (N = 75)      | 0          | <b>0.529</b> | 0.054 | 0.240 | 0.027 | 0.053 | 0.054 | 0.178 | 0.207 | 0.079 | 0     | 0.027 | 0.248 | 0.335 | 0.085 | 0.141            |
| <i>M. afr</i> (N = 46)        | 0          | 0.406        | 0.686 | 0.605 | 0.087 | 0.044 | 0.390 | 0.380 | 0.465 | 0.641 | 0     | 0.489 | 0.591 | 0.509 | 0.555 | 0.390            |
| <i>All families</i>           | 0.134      | 0.524        | 0.781 | 0.65  | 0.196 | 0.615 | 0.454 | 0.797 | 0.303 | 0.72  | 0.559 | 0.727 | 0.813 | 0.551 | 0.667 | -                |
| <i>No of allelic variants</i> | 4          | 11           | 11    | 9     | 3     | 11    | 5     | 11    | 6     | 8     | 4     | 11    | 14    | 9     | 8     | -                |

B. Additional panel of 7 VNTR loci

| Families                 | HGDI value   |       |              |              |              |              |              | Mean for 7 VNTR loci |
|--------------------------|--------------|-------|--------------|--------------|--------------|--------------|--------------|----------------------|
|                          | 2163b        | 2347  | 3232         | 2163a        | 1982         | 3336         | 4052         |                      |
| EAI (N = 109)            | 0.804        | 0.14  | 0.123        | <b>0.821</b> | 0.796        | 0.762        | 0.797        | 0.606                |
| Beijing (N = 96)         | 0.737        | 0.081 | <b>0.830</b> | 0.615        | 0.399        | 0.351        | 0.531        | 0.506                |
| CAS (N = 332)            | 0.104        | 0.042 | 0.846        | 0.331        | 0.635        | 0.696        | <b>0.855</b> | 0.501                |
| T (N = 208)              | 0.821        | 0.055 | 0.804        | 0.779        | 0.651        | <b>0.832</b> | 0.806        | 0.678                |
| Haarlem (N = 128)        | 0.826        | 0.434 | <b>0.935</b> | 0.684        | 0.760        | 0.812        | 0.709        | 0.737                |
| S (N = 5)                | 0.4          | 0     | <b>0.7</b>   | <b>0.7</b>   | <b>0.7</b>   | <b>0.7</b>   | <b>0.7</b>   | 0.557                |
| X (N = 56)               | 0.616        | 0.036 | 0.591        | 0.478        | <b>0.820</b> | 0.714        | 0.787        | 0.577                |
| LAM (N = 252)            | <b>0.880</b> | 0.192 | 0.8          | 0.589        | 0.584        | 0.826        | 0.757        | 0.661                |
| <i>M. bovis</i> (N = 13) | 0            | 0     | 0            | 0            | 0            | 0.167        | 0            | 0.024                |
| <i>M. afr</i> (N = 6)    | 0.7          | 0.143 | <b>0.824</b> | 0.681        | 0.495        | 0.495        | 0.813        | 0.593                |
| All families             | 0.790        | 0.382 | <b>0.909</b> | 0.882        | 0.843        | 0.887        | 0.827        | -                    |
| No. allelic variants     | 13           | 6     | 19           | 18           | 14           | 15           | 10           | -                    |