

Additional file 7. Estimates of four random components (cohort, family, parity, and residual) and their proportion of the total variation, for each of the 67 IgA taxa.

| Taxon | Variance Components | | | | % of Total Variation | | | |
|-------|---------------------|--------|--------|----------|----------------------|--------|--------|----------|
| | Cohort | Family | Parity | Residual | Cohort | Family | Parity | Residual |
| B30 | 0.0016 | 0.0000 | 0.0177 | 0.1085 | 1.26 | 0.00 | 13.85 | 84.89 |
| B44 | 0.0000 | 0.0000 | 0.0176 | 0.1977 | 0.00 | 0.00 | 8.16 | 91.84 |
| B45 | 0.0000 | 0.0089 | 0.0088 | 0.1354 | 0.00 | 5.82 | 5.72 | 88.46 |
| B76 | 0.0000 | 0.0012 | 0.0090 | 0.1105 | 0.00 | 1.01 | 7.44 | 91.55 |
| B41 | 0.0118 | 0.0000 | 0.0113 | 0.0674 | 13.07 | 0.00 | 12.53 | 74.39 |
| B88 | 0.0580 | 0.0515 | 0.0000 | 0.1940 | 19.12 | 16.98 | 0.00 | 63.90 |
| B89 | 0.0036 | 0.0110 | 0.0050 | 0.0906 | 3.28 | 10.02 | 4.55 | 82.16 |
| B59 | 0.0047 | 0.0116 | 0.0000 | 0.0498 | 7.17 | 17.54 | 0.00 | 75.29 |
| B178 | 0.0000 | 0.0029 | 0.0064 | 0.1282 | 0.00 | 2.09 | 4.69 | 93.22 |
| B244 | 0.0000 | 0.0024 | 0.0182 | 0.2185 | 0.00 | 1.00 | 7.61 | 91.39 |
| B48 | 0.0147 | 0.0092 | 0.0018 | 0.2159 | 6.10 | 3.81 | 0.73 | 89.36 |
| B57 | 0.0011 | 0.0207 | 0.0000 | 0.1371 | 0.68 | 13.05 | 0.00 | 86.26 |
| B23 | 0.0000 | 0.0415 | 0.0000 | 0.1421 | 0.00 | 22.61 | 0.00 | 77.39 |
| B212 | 0.0000 | 0.0027 | 0.0066 | 0.1741 | 0.00 | 1.47 | 3.59 | 94.94 |
| B11 | 0.0097 | 0.0000 | 0.0000 | 0.2873 | 3.25 | 0.00 | 0.00 | 96.75 |
| B17 | 0.0000 | 0.0253 | 0.0193 | 0.1500 | 0.00 | 12.99 | 9.91 | 77.09 |
| B75 | 0.0065 | 0.0129 | 0.0038 | 0.2263 | 2.61 | 5.16 | 1.50 | 90.72 |
| B37 | 0.0051 | 0.0816 | 0.0156 | 0.2369 | 1.51 | 24.06 | 4.60 | 69.83 |
| B200 | 0.0112 | 0.0000 | 0.0000 | 0.1811 | 5.84 | 0.00 | 0.00 | 94.16 |
| B14 | 0.0000 | 0.0265 | 0.0000 | 0.1739 | 0.00 | 13.23 | 0.00 | 86.77 |
| B80 | 0.0000 | 0.0242 | 0.0000 | 0.2253 | 0.00 | 9.71 | 0.00 | 90.29 |
| B42 | 0.0161 | 0.0186 | 0.0360 | 0.2505 | 5.00 | 5.80 | 11.20 | 78.00 |
| B71 | 0.0000 | 0.0080 | 0.0172 | 0.2479 | 0.00 | 2.93 | 6.30 | 90.77 |
| B172 | 0.0034 | 0.0631 | 0.0000 | 0.1608 | 1.50 | 27.76 | 0.00 | 70.74 |
| B198 | 0.0035 | 0.0027 | 0.0000 | 0.1735 | 1.97 | 1.48 | 0.00 | 96.55 |
| B91 | 0.0031 | 0.0372 | 0.0253 | 0.2218 | 1.09 | 12.93 | 8.81 | 77.18 |
| B72 | 0.0403 | 0.1533 | 0.0000 | 0.2863 | 8.39 | 31.95 | 0.01 | 59.66 |
| B54 | 0.0000 | 0.0350 | 0.0000 | 0.2128 | 0.00 | 14.12 | 0.00 | 85.88 |
| B87 | 0.0164 | 0.1127 | 0.0380 | 0.3399 | 3.23 | 22.23 | 7.50 | 67.04 |
| B67 | 0.0047 | 0.0244 | 0.0000 | 0.2405 | 1.74 | 9.05 | 0.00 | 89.21 |
| B15 | 0.0019 | 0.0130 | 0.0186 | 0.2482 | 0.68 | 4.62 | 6.59 | 88.11 |
| B78 | 0.0046 | 0.0016 | 0.0294 | 0.3276 | 1.26 | 0.44 | 8.10 | 90.21 |
| B93 | 0.0117 | 0.1826 | 0.0420 | 0.4140 | 1.81 | 28.08 | 6.45 | 63.66 |
| B61 | 0.0202 | 0.1378 | 0.0520 | 0.3234 | 3.79 | 25.84 | 9.75 | 60.62 |
| B79 | 0.0314 | 0.1865 | 0.0320 | 0.3708 | 5.05 | 30.04 | 5.16 | 59.74 |
| B73 | 0.0037 | 0.0349 | 0.0000 | 0.2495 | 1.29 | 12.11 | 0.00 | 86.60 |
| B43 | 0.0115 | 0.0000 | 0.0329 | 0.4111 | 2.53 | 0.00 | 7.23 | 90.24 |
| B195 | 0.0459 | 0.0542 | 0.0036 | 0.4090 | 8.95 | 10.58 | 0.69 | 79.78 |
| B55 | 0.0154 | 0.0653 | 0.0360 | 0.2575 | 4.11 | 17.45 | 9.62 | 68.82 |
| B50 | 0.0000 | 0.0000 | 0.0133 | 0.4382 | 0.00 | 0.00 | 2.94 | 97.06 |

| | | | | | | | | |
|------|--------|--------|--------|--------|------|-------|-------|-------|
| B46 | 0.0000 | 0.2332 | 0.0146 | 0.4718 | 0.00 | 32.40 | 2.03 | 65.56 |
| B33 | 0.0112 | 0.0000 | 0.0187 | 0.2443 | 4.07 | 0.00 | 6.81 | 89.12 |
| B92 | 0.0136 | 0.1160 | 0.0192 | 0.4821 | 2.16 | 18.39 | 3.05 | 76.41 |
| B64 | 0.0363 | 0.0621 | 0.0040 | 0.3788 | 7.54 | 12.91 | 0.83 | 78.72 |
| B60 | 0.0047 | 0.1447 | 0.0587 | 0.4269 | 0.74 | 22.79 | 9.24 | 67.23 |
| B82 | 0.0299 | 0.0793 | 0.0000 | 0.2668 | 7.95 | 21.08 | 0.00 | 70.97 |
| B182 | 0.0161 | 0.0000 | 0.0020 | 0.2481 | 6.04 | 0.00 | 0.76 | 93.20 |
| B10 | 0.0042 | 0.3176 | 0.0000 | 0.6572 | 0.43 | 32.44 | 0.00 | 67.13 |
| B40 | 0.0002 | 0.0080 | 0.0066 | 0.3115 | 0.06 | 2.44 | 2.04 | 95.46 |
| B153 | 0.0003 | 0.2676 | 0.0000 | 0.7033 | 0.03 | 27.55 | 0.00 | 72.42 |
| B122 | 0.0000 | 0.0077 | 0.0080 | 0.1660 | 0.00 | 4.22 | 4.42 | 91.37 |
| B234 | 0.0109 | 0.0000 | 0.0376 | 0.2280 | 3.94 | 0.00 | 13.58 | 82.48 |
| B83 | 0.0072 | 0.0510 | 0.0000 | 0.2470 | 2.36 | 16.72 | 0.00 | 80.92 |
| B114 | 0.0000 | 0.1388 | 0.0692 | 0.5401 | 0.00 | 18.56 | 9.25 | 72.19 |
| B237 | 0.0229 | 0.0150 | 0.0002 | 0.2901 | 6.98 | 4.56 | 0.07 | 88.40 |
| B194 | 0.0000 | 0.0023 | 0.0000 | 0.3666 | 0.00 | 0.63 | 0.00 | 99.37 |
| B197 | 0.0016 | 0.0169 | 0.0000 | 0.3433 | 0.44 | 4.67 | 0.00 | 94.90 |
| B217 | 0.0086 | 0.0812 | 0.0083 | 0.4401 | 1.61 | 15.09 | 1.54 | 81.77 |
| B223 | 0.0000 | 0.1006 | 0.0000 | 0.3398 | 0.00 | 22.84 | 0.00 | 77.16 |
| B81 | 0.0263 | 0.0499 | 0.0087 | 0.2735 | 7.33 | 13.93 | 2.42 | 76.32 |
| B47 | 0.0078 | 0.0484 | 0.0000 | 0.3704 | 1.83 | 11.35 | 0.00 | 86.82 |
| B63 | 0.0135 | 0.1493 | 0.0006 | 0.3693 | 2.54 | 28.03 | 0.11 | 69.32 |
| B218 | 0.0205 | 0.1287 | 0.0005 | 0.4002 | 3.73 | 23.40 | 0.10 | 72.76 |
| B189 | 0.0293 | 0.0095 | 0.0000 | 0.3448 | 7.65 | 2.47 | 0.00 | 89.88 |
| B207 | 0.0168 | 0.1330 | 0.0000 | 0.3826 | 3.16 | 24.99 | 0.00 | 71.86 |
| B175 | 0.0000 | 0.0494 | 0.0370 | 0.3538 | 0.00 | 11.22 | 8.41 | 80.37 |
| B196 | 0.0000 | 0.0640 | 0.0000 | 0.3043 | 0.00 | 17.37 | 0.00 | 82.63 |
