Table S1

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| --- | --- | --- | --- |
| **Gene** | **Allele** | **2007 (%)** | **2008 (%)** |
| **AMA1** | DDRDFNEY | 5.88 | 5 |
| **(n=17,20)** | DDRDSNEY | 5.88 | 0 |
|  | DDRLLDED | 11.76 | 0 |
|  | DDRLLDEY | 0 | 5 |
|  | DERHFDKY\* | 11.76 | 15 |
|  | DQRDFNEY | 0 | 5 |
|  | DQRDLNEY | 5.88 | 0 |
|  | DQRHFDED | 5.88 | 5 |
|  | DQRHFDEY | 11.76 | 0 |
|  | DQRHFDKY | 5.88 | 25 |
|  | NGKDFDED | 5.88 | 5 |
|  | NGRDFNEY | 11.76 | 10 |
|  | NGRDLNED | 11.76 | 5 |
|  | NGRDLNEY | 5.88 | 20 |
| **EBA140** | VSTK | 47.62 | 54.17 |
| **(n=21,24)** | INTK | 38.1 | 20.83 |
|  | VNTK | 9.52 | 4.17 |
|  | INRE | 4.76 | 4.17 |
|  | VNTN | 0 | 4.17 |
|  | VSRE | 0 | 4.17 |
|  | INTN | 0 | 4.17 |
|  | INRK | 0 | 4.17 |
| **EBA181** | NKSFN\* | 56 | 50 |
| **(n=9,20)** | NQSFN | 44 | 45 |
|  | NKSFK | 0 | 5 |
| **EBA175** | EEENSKMKK | 0 | 5.88 |
| **(n=5,17)** | EEKKSISENKKI | 40 | 0 |
|  | EEKNPISKNKKK | 0 | 5.88 |
|  | EEKNSISKNKKK | 0 | 5.88 |
|  | EKEKPISENKKK\* | 20 | 47.06 |
|  | EKENSKMKK | 0 | 5.88 |
|  | KEENSKMKK | 20 | 0 |
|  | KEKKPISKNKKK | 0 | 5.88 |
|  | KEKKSISENKKK | 0 | 5.88 |
|  | KEKNSISKNKKK | 0 | 5.88 |
|  | KEKNSISKNKNI | 20 | 5.88 |
|  | KEKNSKMKK | 0 | 5.88 |
| **EBL-1** | QFFFF.VN\* | 33.33 | 42.11 |
| **(n=6,19)** | QLFLSKS | 33.33 | 26.32 |
|  | .LFLSKP | 33.33 | 15.79 |
|  | .FFFF.VN | 0 | 15.79 |
| **MSP1** | FKFFDD\* | 37.14 | 54.55 |
| **(n=35,22)** | FKFFDN | 25.71 | 22.73 |
|  | FFFDD | 11.43 | 13.64 |
|  | FFFDN | 8.57 | 4.55 |
|  | FKSFDD | 8.57 | 4.55 |
|  | FFFHN | 2.86 | 0 |
|  | FKFYDD | 2.86 | 0 |
|  | IFFDN | 2.86 | 0 |
| **MSP3** | K1 | 60 | 57.14 |
| **(n=15,21)** | 3D7\* | 40 | 42.86 |
| **MSP6** | 3D7\* | 78.95 | 80 |
| **(n=19,25)** | K1 | 21.05 | 20 |
| **MSPDBL1** | AHQAIRY | 54.55 | 10 |
| **(n=11,20)** | ALQAMKY | 36.36 | 25 |
|  | ALTAIKY\* | 9.09 | 60 |
|  | AHQAMRY | 0 | 5 |
| **MSPDBL2** | AHQAIRY\* | 50 | 42.86 |
| **(n=18,21)** | ALQAIKY | 16.67 | 38.1 |
|  | ALQAMKY | 33.33 | 19.05 |
| **Rh1** | (4xHN)QN\* | 30.43 | 19.05 |
| **(n=23,21)** | (4xHN)(2xQN) | 21.74 | 19.05 |
|  | (3xHN)(2xQN) | 13.04 | 23.81 |
|  | (3xHN)QN | 13.04 | 0 |
|  | (5xHN)QN | 4.35 | 9.52 |
|  | (5xHN)(2xQN) | 4.35 | 9.52 |
|  | (4xHN)(3xQN) | 0 | 9.52 |
|  | (5xHN)(3xQN) | 0 | 4.76 |
|  | (5xHN)(4xQN) | 4.35 | 0 |
|  | (6xHN)(2xQN) | 0 | 4.76 |
|  | (6xHN)QN | 4.35 | 0 |
|  | (8xHN)QN | 4.35 | 0 |
| **Rh2a** | KAKQQR\* | 93 | 95 |
| **(n=15,20)** | QEERKQK | 7 | 5 |
| **Rh2b** | 156insQ585del | 33.33 | 44.44 |
| **(n=18,9)** | 156ins585del | 16.67 | 11.11 |
|  | 156delQ585ins | 5.56 | 11.11 |
|  | 156delQ585del | 27.78 | 0 |
|  | 192delQ585ins | 16.67 | 0 |
|  | 192delQ585del | 0 | 11.11 |
|  | 192insQ585del | 0 | 22.22 |
| **Rh4** | (IHTNENNINN)(2xEHTNENNINN)(EHTNEKNINN)(EHANEKNIYN)(EHTNENNINY) | 6.7 | 0 |
| **(n=30,19)** | (IHTNENNINN)(EHTNENNINN)(EHTNEKNINN)(EHANEKNINN)(EHTNENNINY) | 3.3 | 0 |
|  | (IHTNENNINN)(EHTNENNINN)(EHTNEKNINN)(EHANEKNIYN)(EHTNENNINY)\* | 76.7 | 94.7 |
|  | (IHTNENNINN)(2xEHTNEKNINN)(EHANEKNIYN)(EHTNENNINY) | 6.7 | 0 |
|  | (IHTNENNINN)(EHTNENNINN)(EHTNEKNINN)(EHANEKNIYN)(2xEHTNENNINY) | 3.3 | 0 |
|  | (2xIHTNENNINN)(EHTNENNINN)(EHTNEKNINN)(EHANEKNIYN)(EHTNENNINY) | 3.3 | 0 |
|  | (IHTNENNINN)(EHTNENNINN)(EHTNEKNINN)(EHSNEKNIYN)(EHTNENNINY) | 0 | 5.3 |
| **Rh5** | D(2xDYKNV)HDY | 3.5 | 0 |
| **(n=29,20)** | N(2xDYKNV)HDY | 68.9 | 15 |
|  | N(2xDYKNV)YHC\* | 3.5 | 10 |
|  | N(2xDYKNV)YHY | 24.1 | 65 |
|  | N(3xDYKNV)YHY | 0 | 10 |

\*3D7 reference allele, 3D7 reference allele for EBA140 is INKK and Rh2b is 156insQ585ins both were not observed in this population, Rh2a haplotype was based on SNPs 8149, 8150, 8151, 8155, 8162, 8168, 8173, 8181 and 8186, n indicates the number of samples per year 2007,2008.