**Supplementary Table 3.** Fst values shown among all sample sites. The local population genetic structure is not driven by geographical distance (**Supplementary Table 1**). Mantel test for correlation between immunological distance and distance and log(distance+1), respectively: *r* = 0.192, *P* = 0.264 and *r* = 0.082, *P* = 0.339.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **GL** | 0.35 |  |  |  |  |  |  |  |  |  |  |
| **HW** | 0.47 | 0.45 |  |  |  |  |  |  |  |  |  |
| **JB** | 0.46 | 0.43 | 0.52 |  |  |  |  |  |  |  |  |
| **LU** | 0.31 | 0.27 | 0.45 | 0.42 |  |  |  |  |  |  |  |
| **PF** | 0.42 | 0.40 | 0.49 | 0.53 | 0.35 |  |  |  |  |  |  |
| **PH** | 0.46 | 0.42 | 0.50 | 0.51 | 0.41 | 0.52 |  |  |  |  |  |
| **SK** | 0.56 | 0.57 | 0.60 | 0.66 | 0.56 | 0.68 | 0.63 |  |  |  |  |
| **SP** | 0.45 | 0.44 | 0.55 | 0.56 | 0.38 | 0.57 | 0.55 | 0.75 |  |  |  |
| **ST** | 0.23 | 0.26 | 0.38 | 0.40 | 0.22 | 0.32 | 0.41 | 0.54 | 0.37 |  |  |
| **WF** | 0.40 | 0.36 | 0.47 | 0.50 | 0.35 | 0.48 | 0.48 | 0.65 | 0.54 | 0.33 |  |
| **WT** | 0.38 | 0.36 | 0.49 | 0.51 | 0.32 | 0.48 | 0.50 | 0.68 | 0.57 | 0.30 | 0.45 |
|  | **BM** | **GL** | **HW** | **JB** | **LU** | **PF** | **PH** | **SK** | **SP** | **ST** | **WF** |