**Supplementary Materials**

**Supplementary Table 1.** Comparison of 95% CIs of antibody results using the sum of samples from general population and only samples form young population as well as total population in South Korea

| Method               | Public 95% CI (antibody retention rate) | Total population 95% CI (antibody carriers) | Young public (Military personnel) 95% CI (antibody retention rate) | Total population 95% CI (antibody carriers) |
|----------------------|-----------------------------------------|---------------------------------------------|---------------------------------------------------------------------|---------------------------------------------|
|                      | Lower  | Upper | Lower | Upper | Lower  | Upper | Lower | Upper | Lower  | Upper |
| Asymptotic estimation|        |       |       |       |        |       |        |       |        |       |
| Wald                 | 0.00000| 0.00109| 0.00  | 55,906| 0.00108| 0.00329| 55,393| 168,743|        |       |
| Score                | 0.00017| 0.00150| 8719  | 76,934| 0.00133| 0.00360| 68,215| 184,643|        |       |
| Likelihood ratio     | 0.00011| 0.00133| 5642  | 68,215| 0.00123| 0.00349| 63,086| 179,001|        |       |
| Exact estimation     |        |       |       |       |        |       |        |       |        |       |
| Exact                | 0.00016| 0.00158| 8206  | 81,038| 0.00132| 0.00362| 67,702| 185,668|        |       |
| MidP                 | 0.00060| 0.00110| 30774 | 56,419| 0.00160| 0.00310| 82,063| 158,998|        |       |
| Bayesian estimation  |        |       |       |       |        |       |        |       |        |       |
| Uniform              | 0.00010| 0.00123| 5129  | 63,086| 0.00122| 0.00342| 62,573| 175,410|        |       |
| Jeffrey’s            | 0.00014| 0.00136| 7181  | 69,754| 0.00128| 0.00351| 65,651| 180,026|        |       |

CI, confidence interval

From the above table, for both general and young population the MidP method gives the minimum upper bound which are 56,419 and 158,998 respectively. The MidP method also provides the narrowest confidence intervals among all types of confidence interval methods for young population.