APPENDIX

Calculation of GMT (Geometric Mean Titre)

$$GMT = \text{anti}\log_{10} \frac{\sum \log_{10} xi}{n}$$

$\sum \log_{10} xi$ = Summation of $\log_{10} x\ 1 + \log_{10} x\ 2 + \ldots\ldots + \log_{10} x\ n$.

Z-test

Group 1: n_1 - number of subjects in group 1
x_1 - geometric mean titre of group 1
SD_1 - standard deviation of group 1

Group 2: n_2 - number of subjects in group 1
x_2 - geometric mean titre of group 1
SD_2 - standard deviation of group 1

$$Z \text{ value} = \frac{x_1 - x_2}{SE\ (x_1 - x_2)^{\#}}$$

$$SE\ (x_1 - x_2)^{\#} = \sqrt{\left[\frac{SD_1^{\,2}}{n_1} + \frac{SD_2^{\,2}}{n_2} \right]}$$

$SE\ (x_1 - x_2)^{\#}$ - standard error of the difference between the means

χ^2 Test

χ^2 value = $\sum (O - E)^2 / E$

O - observed frequency
E - expected frequency

E is calculated by the formula :

$$E = \frac{\text{Row total} \quad x \quad \text{column total}}{\text{Number of total samples}}$$

Note : These formulae are refered from Michael & David (1993).