Additional File 2

Shortest path and degree distribution analysis. Shortest Path analysis of the nine *Corynebacterium pseudotuberculosis* serovar ovis strains (Figure 1-9). Degree distribution analysis of the nine *C. pseudotuberculosis* serovar ovis strains. The red line indicate the perfect power-law distribution (Figure 10-18).
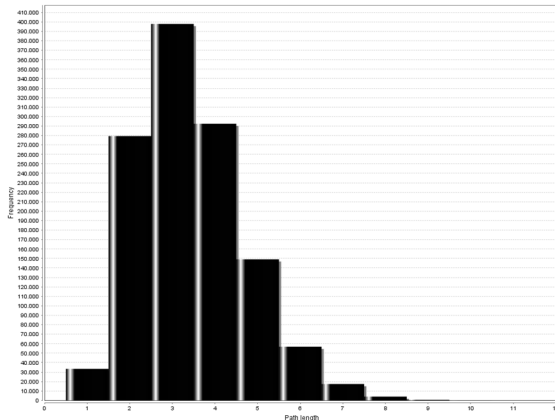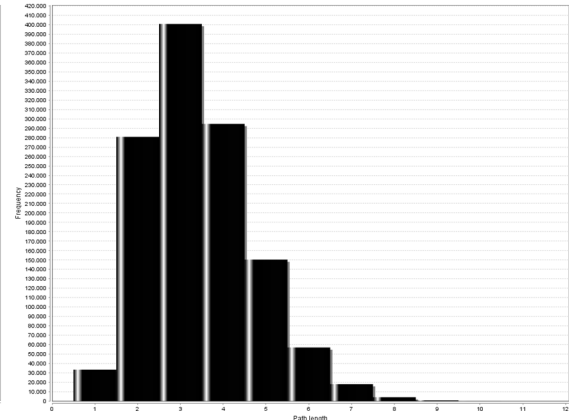

Figure 1 - Cp1002 Shortest Path analysis

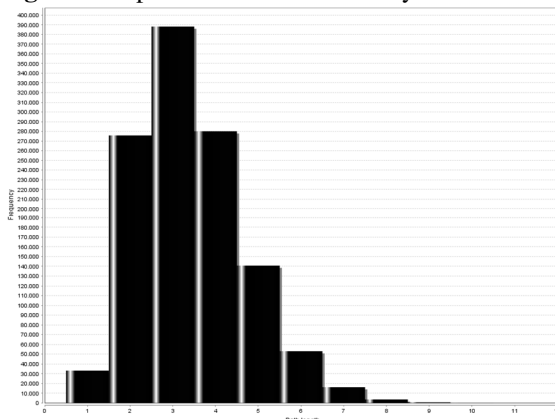**Figure 2 -** Cp267 Shortest Path analysis

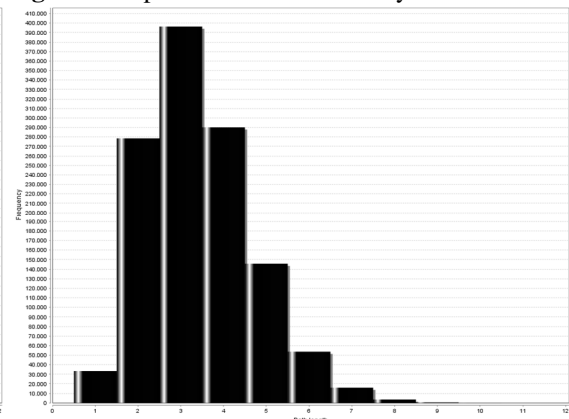**Figure 3 -** Cp3995 Shortest Path analysis

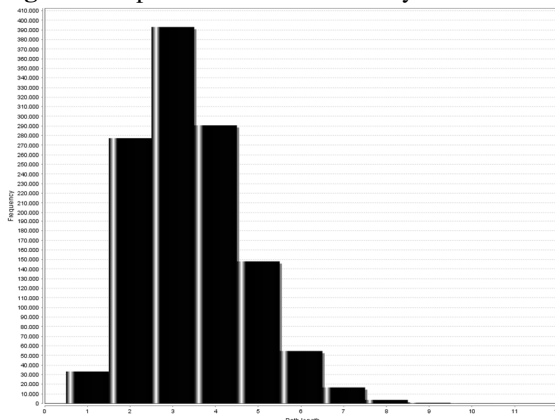**Figure 4 -** Cp4202 Shortest Path analysis

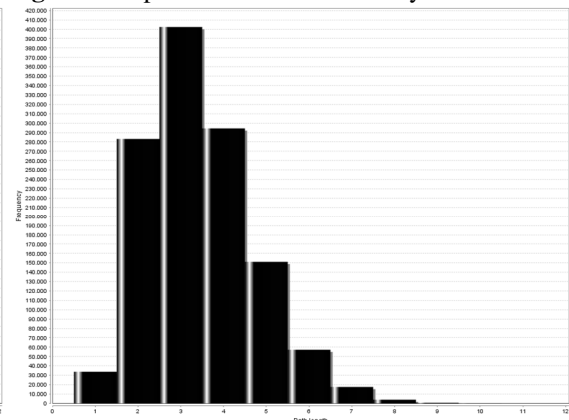**Figure 5 -** CpC231 Shortest Path analysis

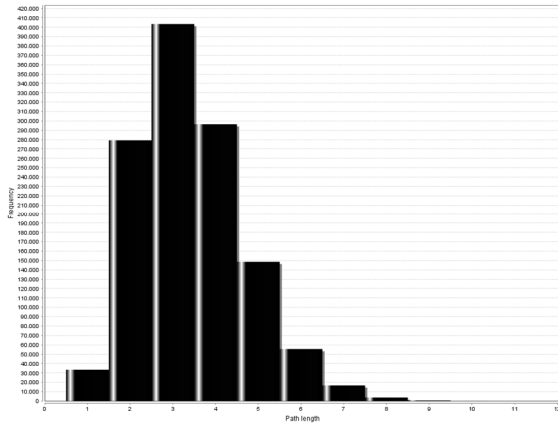**Figure 6 -** Cpfrc Shortest Path analysis

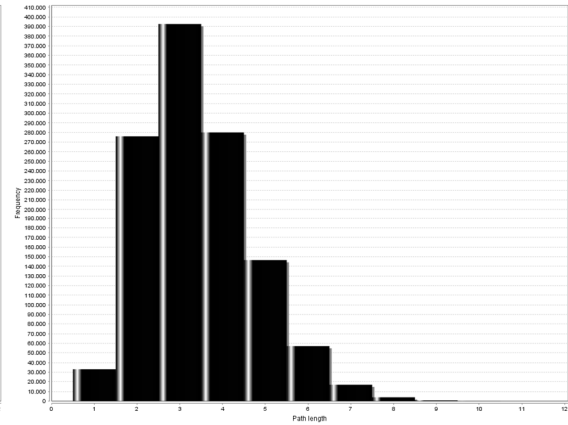**Figure 7 -** CpI19 Shortest Path analysis

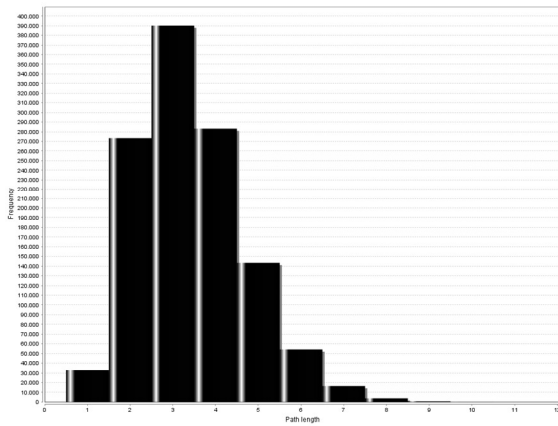**Figure 8 -** CpP54B96 Shortest Path analysis

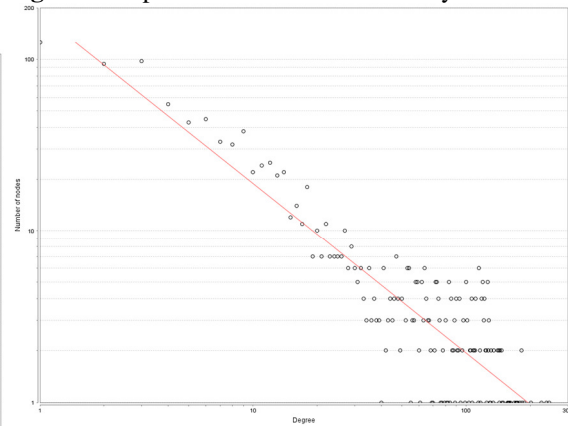**Figure 9 -** CpPAT10 Shortest Path analysis

Figure 10 - CpPAT10 Degree distribution analysis. *Clustering coefficient = 0.407, Correlation* = 0.938, R-Squared = 0.790, Shapiro-Wilk test = p-value < 2.2e-16.
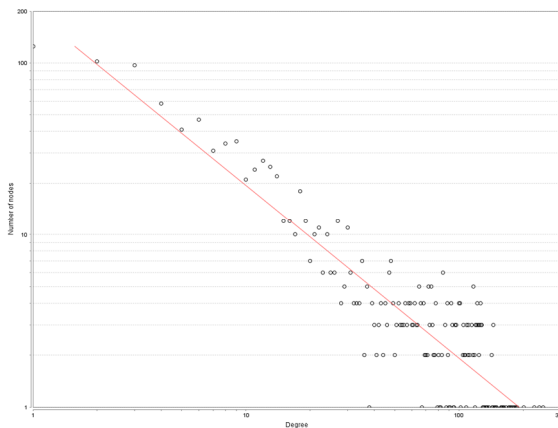

Figure 11 - Cp1002 Degree distribution analysis. Clustering coefficient = 0.408, Correlation = 0.933, R-Squared = 0.822, Shapiro-Wilk test = p-value < 2.2e-16.
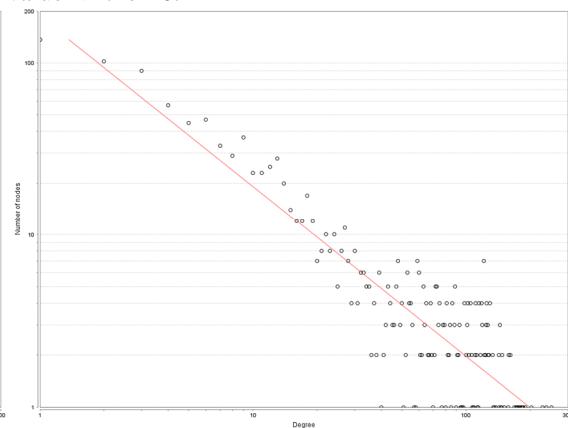
Figure 12 - Cp267 Degree distribution analysis. Clustering coefficient = 0.402, Correlation = 0.953, R-Squared = 0.785, Shapiro-Wilk test = p-value < 2.2e-16.
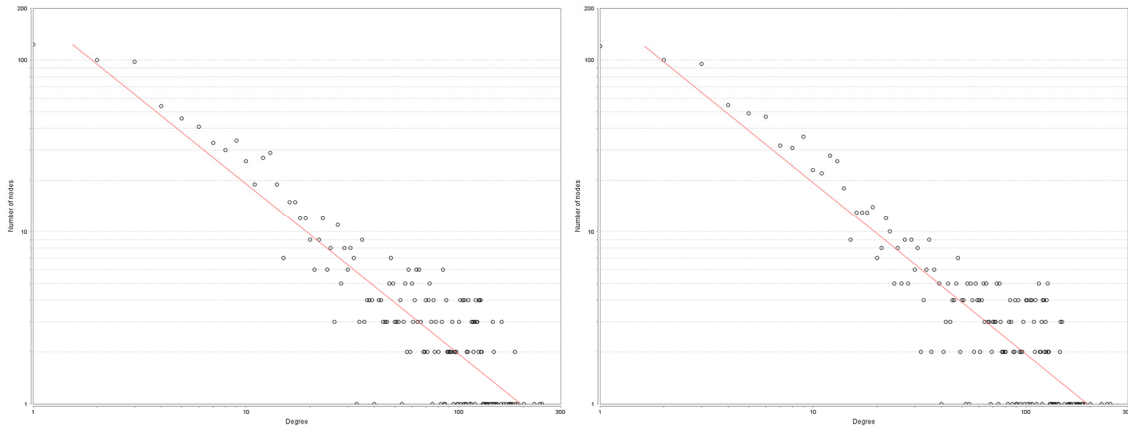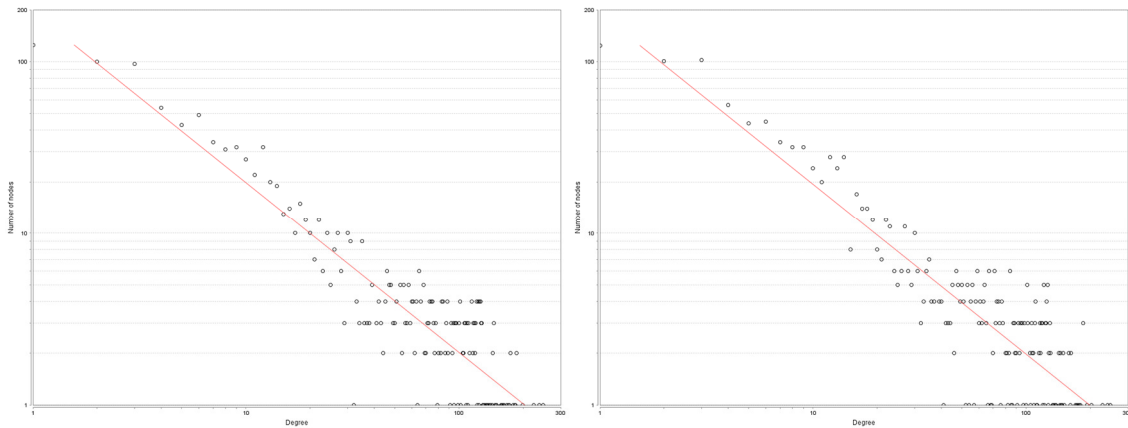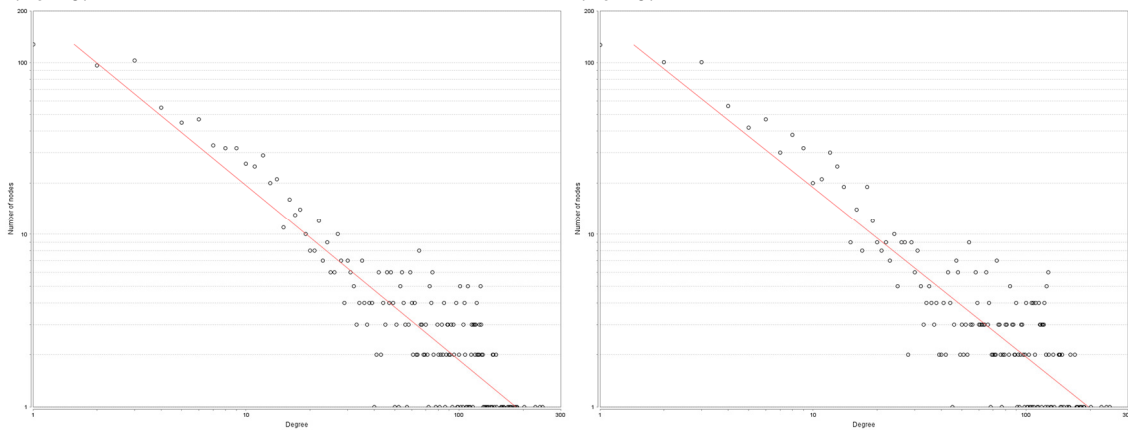
Figure 13 - Cp3995 Degree distribution analysis.Figure 14 - Cp4202 Degree distribution analysis.
Clustering coefficient = 0.410, Correlation = 0.933,Clustering coefficient = 0.410, Correlation = 0.928,
R-Squared = 0.798, Shapiro-Wilk test = p-value <R-Squared = 0.799, Shapiro-Wilk test = p-value <
2.2e-16. 2.2e-16.

Figure 15 - CpC231 Degree distribution analysis.Figure 16 - Cpfrc Degree distribution analysis.
Clustering coefficient = 0.407, Correlation = 0.936,Clustering coefficient = 0.408, Correlation = 0.930,
R-Squared = 0.825, Shapiro-Wilk test = p-value <R-Squared = 0.786, Shapiro-Wilk test = p-value <
2.2e-16. 2.2e-16.

Figure 17 - CpI19 Degree distribution analysis.Figure 18 - CpP54B96 Degree distribution
Clustering coefficient = 0.403, Correlation = 0.932,**analysis.** Clustering coefficient = 0.404, Correlation
R-Squared = 0.813, Shapiro-Wilk test = p-value <= 0.935, R-Squared = 0.800, Shapiro-Wilk test = p-
2.2e-16. value < 2.2e-16.