# SUPLEMENTARY FILES

## Supplementary Material S1

**Sample Size Determination**

The sample size for this study was calculated using the formula described by Araoye (2007) for populations greater than 10,000, as shown below:

Sample size (S) = (A × A × B × (1 − B)) / (D × D)
Where:
S = required sample size
A = standard normal deviate corresponding to 95% confidence level (1.96)
B = estimated prevalence of typhoid fever in Kwara State (7% = 0.07)
D = margin of error (5% = 0.05)

Substituting the values:
S = (1.96 × 1.96 × 0.07 × (1 − 0.07)) / (0.05 × 0.05)
S = (3.8416 × 0.07 × 0.93) / 0.0025
S = 0.25008864 / 0.0025
S = 100.04

Therefore, the minimum sample size was approximated to 100 participants.

## Supplementary Material S2

**Estimation of Total Antioxidant Potential (FRAP Assay)**

**Reagent Setup**

| Solution | Blank | Standard | Test |
|---|---|---|---|
| Sample (Plasma) | — | — | 100 µL |
| Standard (Ascorbic acid) | — | 100 µL | — |
| Working FRAP solution | 3000 µL | 3000 µL | 3000 µL |

**Procedure**

Briefly, 100 µL of plasma sample was mixed with 3 mL of pre-warmed FRAP reagent and absorbance was measured at 593 nm at 0 minute. Samples were incubated at 37°C for 4 minutes, after which absorbance was measured again at 593 nm. Ascorbic acid standards (100–1000 µM) were processed similarly.

**Calculation of FRAP Value**

FRAP value of sample (in micromoles) was calculated using the formula below:
FRAP value of sample = (Change in absorbance of sample from 0 to 4 minutes / Change in absorbance of standard from 0 to 4 minutes) × FRAP value of standard (1000 micromoles)