Supplementary data

1.0 Texture analysis of SDG enriched set *dahi* by back extrusion method

1.1 TA settings and parameters used for the texture analysis of set *dahi* by back extrusion method

TA Settings	
Mode	Measure force in compression
Option	Return to start
Test speed	1.0 mm/s
Post-test speed	10.0 mm/s
Target mode	Strain
Strain	20%
Trigger type	Button
Parameters	
Sample shape	Cylindrical
Sample diameter (d)	60.00 mm
Strain height	50.00 mm
Stress area	2826 mm^2 (Π x $(d/2)^2$)
Temperature	25 °C

1.2 Macro for data analysis:

Clear Graph Results		
Redraw		
Search Forwards		
Go to Min. Time		
Drop Anchor	1	
Go to Abs. +ve Value	Force	
Mark Value	Force	
Go to	Force	0g
Drop Anchor	2	

Area		
Go to Abs. -ve Value	Force	
Mark Value	Force	
Go to	Force	-20g
Drop Anchor	3	
Area		

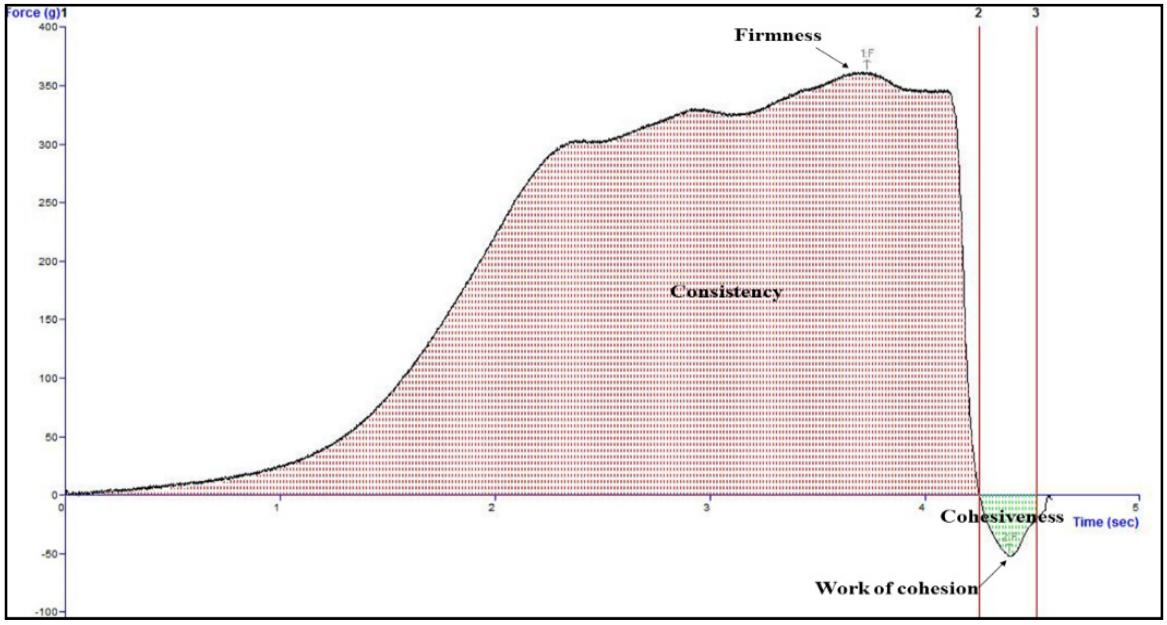


Figure: Typical force deformation curve of set *dahi* obtained using Texture Analyzer

2.0 Measurement of serum calcium level

A double-beam UV-Visible spectrophotometer (Model: RSCH-366 C, Aarson™) was adjusted to zero with distilled water. Further, 1 mL of Arsenazo III (R) was pipetted into the cuvette and incubated for 2 minutes at 37 °C. This served as the blank, and the absorbance at 650 nm was determined. Similarly, the standard mixture was prepared by mixing 1 mL of Arsenazo III (R) and 10 µL of the calcium standard, incubated and measured absorbance as above. In a similar fashion, 10 µL of each serum sample was pipetted into a cuvette containing 1 mL of Arsenazo III (R) solution. After proper mixing, the sample mixture was incubated and absorbance was measured as above. The serum calcium was calculated using the following formula:

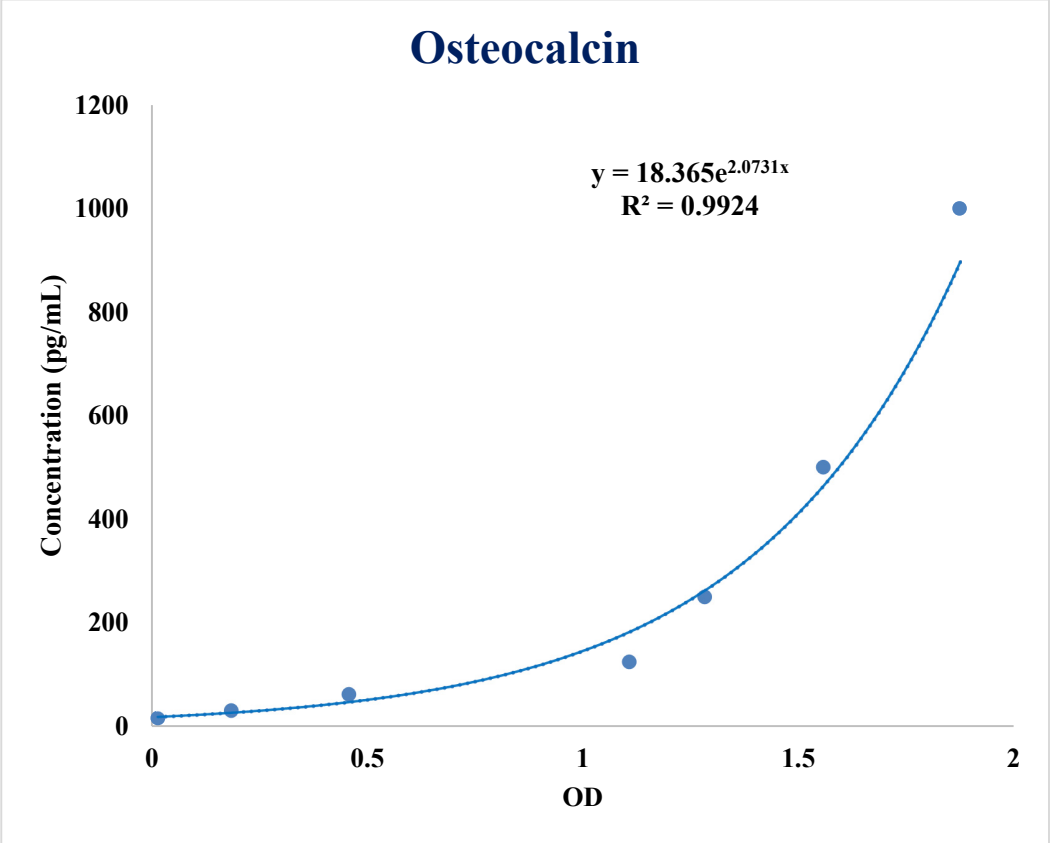
$$\frac{\text{Absorbance of sample} - \text{Absorbance of blank}}{\text{Absorbance of standard} - \text{Absorbance of blank}} \times 10 = \text{ total calcium mg/dL}$$

3.0 Measurement of serum phosphorus level

Briefly, 4 µL of serum was added to 200 µL of ammonium molybdate in the presence of sulphuric acid (phosphorus detection reagent) in a 96-well plate, incubated at room temperature for 5 minutes, and the absorbance was measured at 340 nm. Total phosphorus concentration was calculated using the following formula:

$$\text{Phosphorus } \left(\frac{\text{mg}}{\text{dL}}\right) = \frac{\text{Absorbance of sample}}{\text{Absorbance of standard}} \times \text{Concentration of standard } \left(\frac{\text{mg}}{\text{dL}}\right)$$

4.0 Standard curve used for the estimation of osteocalcin



Osteocalcin standard curve (x is the optical density (OD) and y is the concentration (pg/mL))

5.0 Conversion of animal dose to human dose

The dose by factor method applies an exponent for body surface area (0.67), which account for difference in metabolic rate, to convert doses between animals and humans. Thus, human equivalent dose (HED) is determined by the equation (Nair and Jacob, 2016):

$$HED\ \left(\frac{mg}{kg}\right) = Animal\ NOAEL\ \left(\frac{mg}{kg}\right) \times (Weight_{Animal}[kg] \div Weight_{Human}[kg])^{(1-0.67)}$$

Where, NOAEL – no observed adverse effect levels

In the current investigation,

The average weight of rats throughout the study was 206 g

Therefore, the dose of SDG administered was 260 mg/206 g

ie. 1262 mg/kg body weight

HED (mg/kg) = 1262 x $(0.206/60)^{0.33}$

= 193.96 mg/kg

Thus, for a women weighing 60 kg, the dose will be 11637.6 mg

This HED value is further divided by a factor value of 10; thus, the initial dose in entry into clinical studies will be **1163.76 mg/60 kg, ~ 1.16 g SDG/ 60 kg/ day**

References:

[44] Nair, A.B.; Jacob, S.A. Simple practice guide for dose conversion between animals and human. *J Basic Clin Pharma* 2016, 7, 27-31.