

Tab S1 The main ingredient of the T2DM model feed

Nutritional Components	Content (%)
Crude Protein	15.4
Crude Fat	13.6
Crude Fiber	5.8
Crude Ash	4.0
Moisture	8.9
Calcium	0.97
Total Phosphorus	0.69
Non-Protein Extract	52.6
Energy	3.941 kcal/g

Tab S2 Composite one-factor test level scale

Level	Factor		
	<i>A</i> Ratio of TBS and GELNs addition	<i>B</i> Cooscillation time/min	<i>C</i> Ultrasonic time/min
1	100:2	30 min	0 min
2	100:3	45 min	5 min
3	100:4	60 min	10 min
4	100:5	75 min	15 min
5	100:6		

Tab S3 Gas chromatograph operating parameters

Prerequisite	Operating parameters
Chromatographic column	DB-FFAP
Column and inlet temperature	200°C
Detector	FID
Carrier gas	Helium
Bypass ratio	1:5
Air velocity	300 mL/min
Hydrogen flow rate	35 mL/min
Tail blowing gas flow	30 mL/min
Injection volume	1 µL
	100°C, 1 min
Warming procedures	100-150°C, 15°C/min
	150-170°C, 5°C/min
	170-210°C, 15°C/min

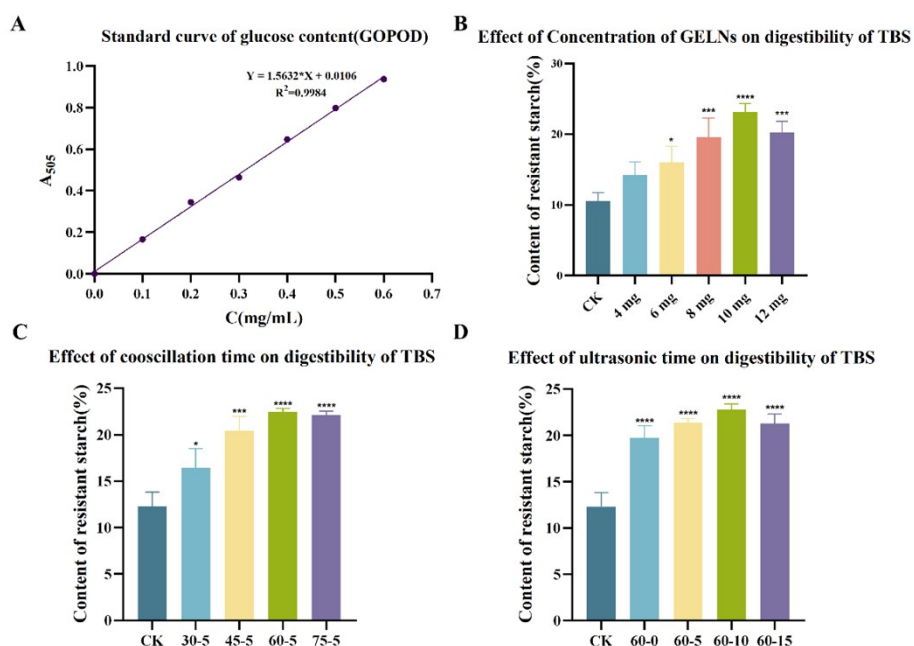


Fig. S1 Establishment of optimal compounding conditions for TBS and GELNs

(A) Glucose standard curve; (B) GELNs additions;

(C) Co-oscillation time; (D) Ultrasonic time

* $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$, **** $P < 0.0001$

Notes for Figure S1: In GELNs additions, the quality of each batch of Tartary Buckwheat starch is 200 mg.