Polyphenol-enriched extracts from the ginger leaves against toxicity induced by β-amyloid in *Caenorhabditis elegans*

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Fig. S1 Effect of single-factor on the polyphenol yield. (A) Ethanol concentration. (B) Power. (C) Liquid-solid ratio. (D) Time.

Fig. S2 Response surface analysis of extraction parameters on polyphenol yield. (A) Time and ethanol concentration. (B) Power and ethanol concentration. (C) Liquid-solid ratio and ethanol concentration. (D) Power and time. (E) Liquid-solid ratio and time. (F) Liquid-solid ratio and power.

Fig. S3 The gradient elution curve of crude polyphenols from ginger leaves by silica gel column.

Fig. S4 The antioxidant activities of GLP *in vitro*. (A) The scavenging ability to DPPH radical. (B) The scavenging ability to hydroxyl radical. (C) The scavenging ability to ABTS radical. (D) Anti-lipid peroxidation capacity. The value is the average ± SE.

Fig. S5 The effect of GLP on the reproductive toxicity (A) and survival curve (B) in N2 worms. Statistical analysis of survival curve (C). 50 μm of resveratrol as positive control (Res group).

Fig. S1

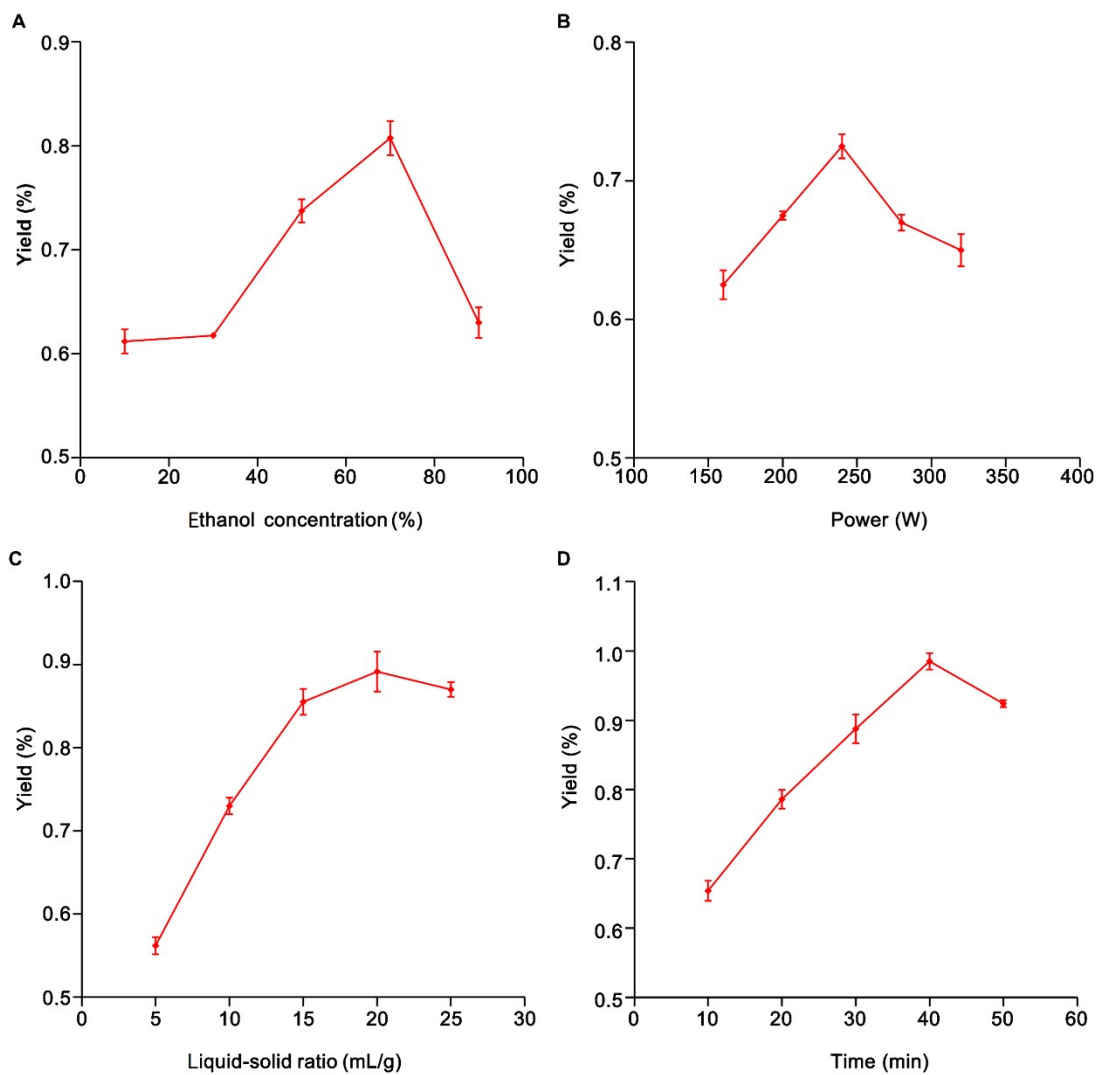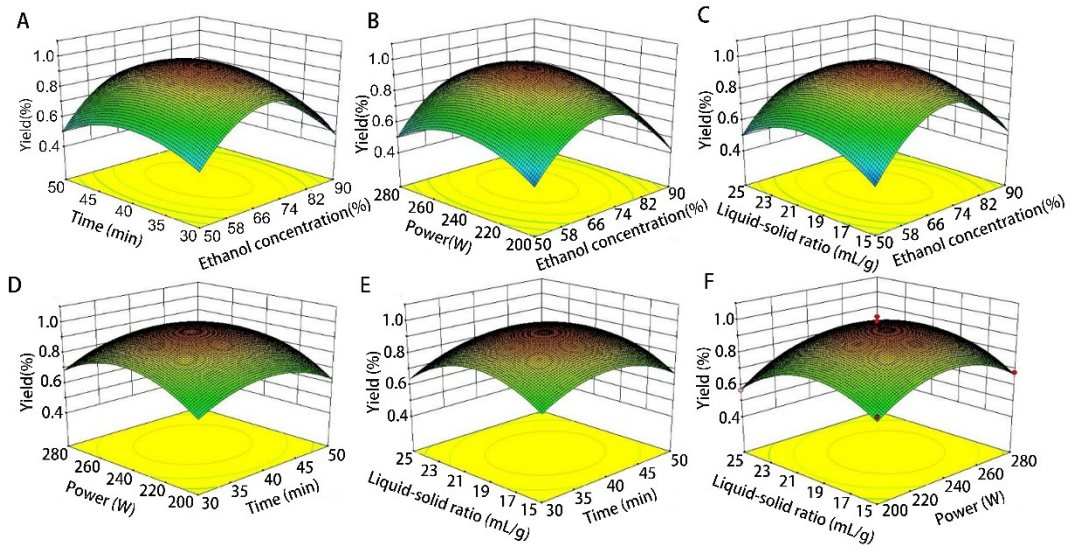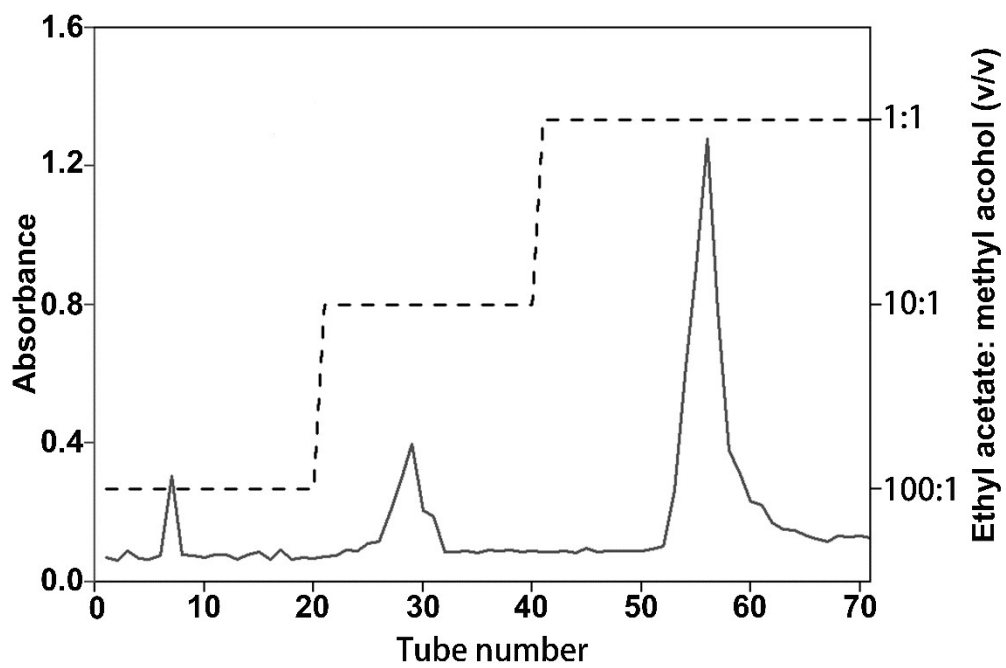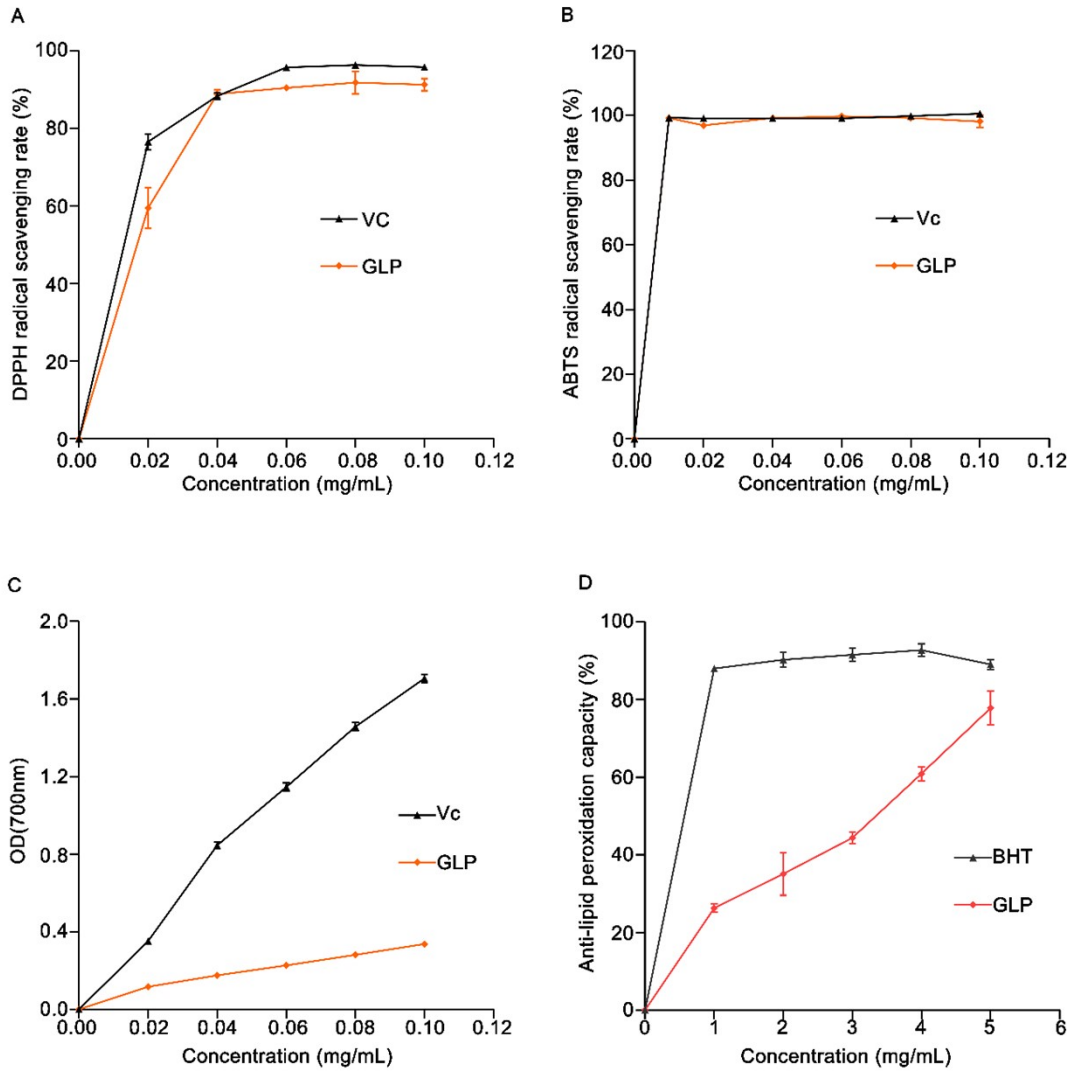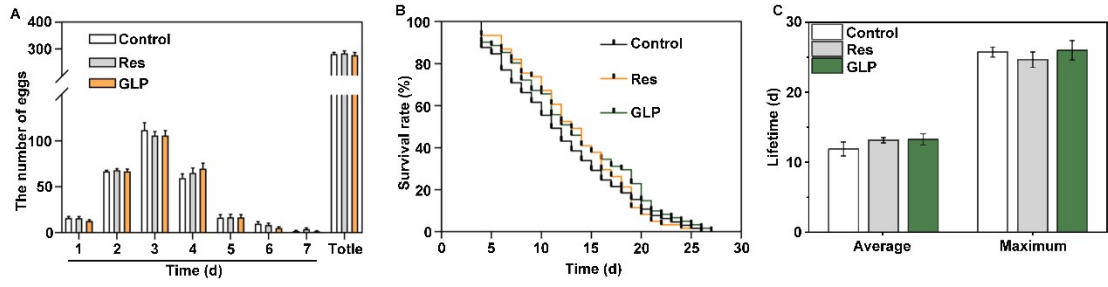**Fig. S2**

Fig. S3

Fig. S4

Fig. S5

Table S1 The sequences of qPCR primers.

Table S2 ANOVA for the quadratic response surface model.

Table S1 The sequences of qPCR primers.

Name	Forward	Reverse
Actin	CCAGGAATTGCTGATCGTATGCAGAA	TGGAGAGGGAAGCGAGGATAGA
jnk-1	GCCATTCTGGTAGAGGAAGTTTCTC	CGCCAGTCCAAAATCAAGAATC
daf-16	CCACCACCATCATACCACGAGTTG	CATTGGCTTGAAGTTAGTGTCTGGC
sod-3	AGCCGACTTGCATGTGGAACTATC	ATTGTGTAACTGGAGGAAGGGATGC
hsp-16.2	TGTAGATGTTGGTGCAGTTGCTTCG	CTTCGACGATTGCCTGTTGAATTGG

Table S2 ANOVA for the quadratic response surface model.

Source	Sum of squares	Df	Mean square	F-value	p-value
Model	0.8274	14	0.0591	34.8593	<0.0001**
A	0.0001	1	0.0001	0.0786	0.7832
B	0.0003	1	0.0003	0.1769	0.6804
C	0.0120	1	0.0120	7.0973	0.0185*
D	0.0027	1	0.0027	1.5925	0.2276
AB	0.0006	1	0.0006	0.3686	0.5535
AC	0.0012	1	0.0012	0.7225	0.4096
AD	0.0049	1	0.0049	2.8900	0.1112
BC	0.0002	1	0.0002	0.1327	0.7211
BD	0.0004	1	0.0004	0.2359	0.6347
CD	0.0016	1	0.0016	0.9437	0.3478
A^2	0.6680	1	0.6680	394.0056	<0.0001**
B^2	0.1198	1	0.1198	70.6746	<0.0001**
C^2	0.1680	1	0.1680	99.0649	<0.0001**
D^2	0.1732	1	0.1732	102.1670	
Residual	0.0237	14	0.0017		<0.0001**
Lack of Fit	0.0176	10	0.0018	1.1514	0.4845
Pure Error	0.0061	4	0.0015		
Cor Total	0.8512	28			
R^2	0.9721				
R^2_{adj}	0.9442				

Abbreviations: A, ethanol concentration. B, power. C, liquid-solid ratio. D, time.

* Means significant, $p < 0.05$; ** Means extremely significant differences, $p < 0.01$.