

Supplemental 2

Methods

Search strategy

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(' mulberry leaf ' OR ' mulberry leave ' OR ' Morus indica L. ' OR ' 1-deoxynojirimycin
' OR ' 1-DNJ ') AND (' glycemic control ' OR ' glycaemic control ' OR ' glucose control
' OR ' diabetes diabetic ' OR ' type 2 diabetes mellitus ' OR ' T2DM ' OR ' glucose ' OR
' blood sugar ' OR ' fasting blood glucose ' OR ' glycated hemoglobin ' OR ' glycosylated
hemoglobin ' OR ' HbA1c ' OR ' GHB ' OR ' insulin ' OR ' insulin sensitivity ' OR ' iletin
' OR ' Ins ')

(Humans [ptyp] AND Clinical Trial [ptyp]) in All Text

Table S1 The changes of mean and standard deviation at the baseline and endpoint.

Table S2 Sensitivity analysis for FBG, HbA1c and FPI by a fixed-effect model.

Table S3 GRADE evidence profile for effect of ML/MLE supplementation on glycemic trail.

Table S1 The changes of mean and standard deviation at the baseline and endpoint.

Study ID	FPG				HbA1c				FPI			
	IG		CG		IG		CG		IG		CG	
	$\Delta \bar{x}$	ΔSD	$\Delta \bar{x}$	ΔSD	$\Delta \bar{x}$	ΔSD	$\Delta \bar{x}$	ΔSD	$\Delta \bar{x}$	ΔSD	$\Delta \bar{x}$	ΔSD
Andallu et al., 2001 ¹	-2.34	0.30	-0.70	0.24	-14.21	4.14	-1.09	4.14				
Aramwit et al., 2011 ²	-0.16	0.09	-0.14	0.08	0	5.13	-1.09	3.19				
Kim et al., 2015 ³	0.26	0.62	0.21	0.60	-0.77	9.20	-0.22	10.47	1.99	1.04	0.23	2.50
Kimura et al., 2007 ⁴	-0.03	0.18	-0.02	0.11								
Kojima et al., 2010 ⁵	-0.17	0.34	-0.17	0.28	-1.09	1.95	-2.19	3.75	-2.76	6.08	-0.56	4.17
Qi et al., 2018 ⁶	-4.45	1.60	-2.31	1.81	-30.49	9.81	-16.72	11.24				
Riche et al., 2017 ⁷	-1.33	1.82	-1.08	1.25	-3.93	3.27	-3.17	3.87				
Taghizadeh et al., 2022 ⁸	-0.41	2.76	-0.15	2.42	-3.28	10.94	-1.42	8.30	-1.00	5.60	1.60	9.49
Thaipitakwong et al., 2020 ⁹	-0.21	0.60	-0.04	0.58	-1.31	2.47	0.66	2.53	-1.13	8.01	-0.34	6.59
Trimarco et al., 2015 ¹⁰	-0.43	0.46	-0.15	0.71	-0.78	4.55	-1.01	4.24	-2.20	6.82	-0.40	6.61
Yang et al, 2019 ¹¹	-1.79	1.55	-0.97	1.61	-12.46	7.59	-9.84	7.27				
Yasumoto et al., 2022 ¹²	0	0.67	0.06	0.64	-1.09	3.12	-1.09	3.40				

Note: FBG, fasting blood glucose; HbA1C, glycosylated hemoglobin; FPI, fasting plasma insulin; IG, intervention group; CG, control group.

Table S2 Sensitivity analysis for FBG, HbA1c and FPI by a fixed-effect model.

Study ID	FPG			HbA1c			FPI		
	WMD (95% CI)	I ² (%)	p	WMD (95% CI)	I ² (%)	p	WMD (95% CI)	I ² (%)	p
Andallu et al., 2001 ¹	-0.31 [-0.55, -0.07]	87	0.01	-1.89 [-4.28, 0.49]	88	0.12			
Aramwit et al., 2011 ²	-0.52 [-1.00, -0.03]	95	0.04	-3.34 [-6.31, -0.38]	92	0.03			
Kim et al., 2015 ³	-0.52 [-0.92, -0.12]	96	0.01	-3.09 [-5.96, -0.22]	92	0.03	-1.80 [-3.85, 0.25]	0	0.09
Kimura et al., 2007 ⁴	-0.52 [-0.97, -0.06]	96	0.03						
Kojima et al., 2010 ⁵	-0.52 [-0.93, -0.11]	96	0.01	-3.34 [-6.29, -0.39]	92	0.03	-0.34 [-2.75, 2.06]	59	0.78
Qi et al., 2018 ⁶	-0.31 [-0.66, 0.03]	96	0.08	-1.78 [-3.94, 0.38]	85	0.11			
Riche et al., 2017 ⁷	-0.48 [-0.86, -0.10]	96	0.01	-3.14 [-6.14, -0.15]	92	0.04			
Taghizadeh et al., 2022 ⁸	-0.48 [-0.86, -0.10]	96	0.01	-3.01 [-5.91, -0.11]	93	0.04	-0.09 [-2.34, 2.16]	50	0.94
Thaipitakwong et al., 2020 ⁹	-0.50 [-0.91, -0.09]	96	0.02	-3.03 [-6.40, 0.34]	93	0.08	-0.69 [-3.39, 2.02]	64	0.62
Trimarco et al., 2015 ¹⁰	-0.49 [-0.89, -0.09]	96	0.02	-3.25 [-6.25, -0.25]	92	0.03	-0.36 [-2.86, 2.13]	58	0.78
Yang et al., 2019 ¹¹	-0.44 [-0.83, -0.05]	96	0.03	-2.95 [-5.95, 0.05]	93	0.05			
Yasumoto et al., 2022 ¹²	-0.51 [-0.91, -0.11]	96	0.01	0.00 [-1.86, 1.86]	92	0.04			

Note: FBG, fasting blood glucose; HbA1C, glycosylated hemoglobin; FPI, fasting plasma insulin.

Table S3. GRADE evidence profile for effect of ML/MLE supplementation on glycemic trail.

No. of studies	Study design	Risk of bias	Certainty assessment				No. of subjects		WMD 95% CI	Effect Certainty	Importance
			Inconsistency	Indirectness	Imprecision	Other considerations	Intervention	Control/ Placebo			
FBG (mmol/L)											
12	Randomised trials	Not serious	Serious **	I ² = 92% Serious *	Serious #	None	326	325	-0.47 [-0.84, -0.10]	⊕○○○ ○ Very low	Critical
HbA1c (mmol/mol)											
11	Randomised trials	Not serious	Serious **	I ² = 96% Serious*	Serious #	None	320	319	-2.92 [-5.66, -0.18]	⊕○○○ ○ Very low	Critical
FPI (μIU/mL)											
5	Randomised trials	Serious *	Serious **	I ² = 55% Serious*	Not serious	None	108	106	-0.58 [-2.78, 1.62]	⊕⊕○○○ Low	Critical

Note: FBG, fasting blood glucose; HbA1C, glycosylated hemoglobin; FPI, fasting plasma insulin. CI, Confidence interval; WMD, Weight mean difference; * Overall, findings alternated from significantly favoring vitamin C (5 domains) to borderline (p=0.05) significant effects (2 domains) when undertaking sensitivity analyses on the basis of different individual Cochrane Risk of Bias domains when using only low risk studies – a decision was made to not rate down for risk of bias due to this relative consistency; **Significant heterogeneity in meta-analysis (I² > 50%); *

Surrogate outcome measure, not patient-important endpoint; # Upper bound 95% confidence interval of estimate outside of clinical meaningfulness.

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