

Supplementary Data

Anti-obesity and Hypolipidemic Potential of *Nitraria retusa* Extract in overweight/obese Women: A Randomized, Double- Blind, placebo- Controlled Pilot Study

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Supplementary Table S1: Means of change values \pm SD per parameter before and after 12 week NRE and placebo intake: Body weight, Body composition, Anthropometric parameters and lipid profile of overweight/ obese participants with BMI < 29.9 Kg/m².

	Δ NRE (N=8)	Δ Placebo (N=3)	<i>p</i> value ^a
Weight	-1.01 \pm 0.67	+0.83 \pm 1.19	0.048
BMI	-0.35 \pm 0.18	-0.06 \pm 0.75	0.44
WC	-3.43 \pm 0.68	-1.33 \pm 4.95	0.609
BF	-0.46 \pm 0.35	+0.43 \pm 0.34	0.279
BM	+0.15 \pm 0.108	-0.13 \pm 0.24	0.246
BM/BF	+0.015 \pm 0.01	-0.227 \pm 0.029	0.197
BW	+0.36 \pm 0.25	-0.4 \pm 0.36	0.166
WC/HC	-0.25 \pm 0.006	+0.044 \pm 0.04	0.22
MTC	-2.41 \pm 0.95	+1.83 \pm 1.16	0.01
MAC	-1 \pm 0.53	+1.16 \pm 2.52	0.69
TG, mmol/L	-0.0217 \pm 0.086	+0.06 \pm 0.04	0.41
HDL, mmol/L	-0.038 \pm 0.06	- 0.026 \pm 0.075	0.75
LDL, mmol/L	-0.43 \pm 0.22	+0.136 \pm 0.173	0.09
TC, mmol/L	-0.32 \pm 0.25	+0.126 \pm 0.18	0.286

^aBetween-group differences (NRE vs. Placebo) in the parameters were assessed by independent samples t-test (parametric and equal variances), Welch's t-test (unequal variances) and Mann-Whitney U test (nonparametric)

Supplementary Table S2: Means of change values \pm SD per parameter before and after 12 week NRE and placebo intake: Body weight, Body composition, Anthropometric parameters and lipid profile of overweight/ obese participants with BMI ≥ 30 kg/m².

	Δ NRE (N=22)	Δ Placebo (N=10)	<i>p</i> value ^a
Weight	-2.86 \pm 0.61	-0.18 \pm 0.43	<0.001
BMI	-1.03 \pm 0.22	-0.088 \pm 0.18	0.01
WC	-2.87 \pm 1.25	-0.66 \pm 0.63	<0.001
BF	-1.26 \pm 0.29	-0.105 \pm 0.28	0.09
BM	+0.37 \pm 0.2	+0.2 \pm 0.22	0.11
BM/BF	0.028 \pm 0.009	0.0058 \pm 0.008	0.07
BW	1.1 \pm 0.2	0.2 \pm 0.204	0.006
WC/HC	0.0054 \pm 0.0039	-0.006 \pm 0.004	0.34
MTC	-3.37 \pm 0.94	-1.05 \pm 0.78	0.039
MAC	-1.81 \pm 0.41	-1.22 \pm 0.66	0.37
TG, mmol/L	-0.038 \pm 0.14	+0.1 \pm 0.0088	0.016
HDL, mmol/L	+0.03 \pm 0.031	+0.065 \pm 0.06	0.78
LDL, mmol/L	0.38 \pm 0.23	0.027 \pm 0.225	0.514
TC, mmol/L	0.223 \pm 0.18	0.14 \pm 0.29	0.93

^aBetween-group differences (NRE vs. Placebo) in the parameters were assessed by independent samples t-test (parametric and equal variances), Welch's t-test (unequal variances) and Mann-Whitney U test (nonparametric)

Supplementary Table S3: Means of change values \pm SD per parameter before and after 12 week NRE and placebo intake: Body weight, Body composition, Anthropometric parameters and lipid profile of overweight/ obese participants with age < 40 years.

Parametere	Δ NRE (17)	Δ Placebo (4)	<i>p</i> value ^a
Weight	-2.51 \pm 0.71	+1.05 \pm 0.79	0.003
BMI	-0.9 \pm 0.27	0.1 \pm 0.54	0.088
WC	-3.6 \pm 0.89	-1.25 \pm 3.59	0.333
BF	-1.17 \pm 0.33	0.11 \pm 0.43	0.034
BM	+0.42 \pm 0.15	-0.125 \pm 0.17	0.056
BM/BF	+0.0311 \pm 0.009	-0.148 \pm 0.24	0.061
BW	+1 \pm 0.27	-0.1 \pm 0.43	0.006
WC/HC	-0.115 \pm 0.006	0.29 \pm 0.33	0.019
MTC	-2.87 \pm 1.17	+0,5 \pm 1.63	0.129
MAC	-1.43 \pm 0.51	+0.25 \pm 2	0.36
TG, mmol/L	-0.067 \pm 0.07	+0.03 \pm 0.086	0.21
HDL, mmol/L	+0.08 \pm 0.27	+0.1 \pm 0.75	0.8
LDL, mmol/L	-0.29 \pm 0.126	+0.19 \pm 0.29	0.46
TC, mmol/L	+0.41 \pm 0.1	+0.31 \pm 0.31	0.31

^aBetween-group differences (NRE vs. Placebo) in the parameters were assessed by independent samples t-test (parametric and equal variances), Welch's t-test (unequal variances) and Mann-Whitney U test (nonparametric)

Supplementary Table S4: Means of change values \pm SD per parameter before and after 12 week NRE and placebo intake: Body weight, Body composition, Anthropometric parameters and lipid profile of overweight/ obese participants with age > 40 years.

	Δ NRE (N=13)	Δ Placebo (N=9)	p value ^a
Weight	-1.48 \pm 0.39	-0.42 \pm 0.45	0.048
BMI	-0.53 \pm 0.17	-0.17 \pm 0.187	0.044
WC	-2.43 \pm 1.34	-0.62 \pm 0.617	0.037
BF	-0.58 \pm 0.32	-0.01 \pm 0.29	0.139
BM	0.083 \pm 0.19	0.23 \pm 0.24	0.512
BM/BF	0.012 \pm 0.008	0.0036 \pm 0.008	0.49
BW	0.5 \pm 0.18	0.125 \pm 0.199	0.203
WC/HC	-0.0028 \pm 0.015	-0.0049 \pm 0.004	0.301
MTC	-3.08 \pm 0.59	-0.5 \pm 0.829	0.01
MAC	-0.5 \pm 0.61	-1.06 \pm 0.73	0.36
TG, mmol/L	-0.075 \pm 0.11	0.125 \pm 0.09	0.009
HDL, mmol/L	-0.026 \pm 0.06	0.033 \pm 0.06	0.816
LDL, mmol/L	-0.15 \pm 0.36	-0.013 \pm 0.22	0.809
TC, mmol/L	-0.18 \pm 0.36	0.05 \pm 0.296	0.934

^aBetween-group differences (NRE vs. Placebo) in the parameters were assessed by independent samples t-test (parametric and equal variances), Welch's t-test (unequal variances) and Mann-Whitney U test (nonparametric)

Supplementary Table S5: Means of change values \pm SD per parameter before and after 12 week NRE and placebo intake: Body weight, Body composition, Anthropometric parameters and lipid profile of overweight/ obese participants participants with BMI < 30 and age < 40.

	Δ NRE (N=4)	Δ Placebo (N=2)	p value ^a
Weight	-1.13 \pm 0.6	+1.3 \pm 1.9	0.128
BMI	-0.36 \pm 0.34	-0.1 \pm 1.3	0.74
WC	-2.83 \pm 1.3	-2 \pm 8.5	0.81
BF	-0.73 \pm 0.67	0.67 \pm 0.41	0.092
BM	0.1 \pm 0.208	-0.2 \pm 0.4	0.59
BM/BF	0.02 \pm 0.022	-0.042 \pm 0.04	0.244
BW	0.56 \pm 0.49	-0.65 \pm 0.45	0.13
WC/HC	-0.022 \pm 0.01	0.07 \pm 0.056	0.315
MTC	-2 \pm 2.08	2 \pm 2	0.201
MAC	-0.16 \pm 0.16	1.75 \pm 4.25	0.36
TG, mmol/L	-0.0025 \pm 0.033	0.09 \pm 0.07	0.256
HDL, mmol/L	-0.0067 \pm 0.05	0.09 \pm 0.07	0.921
LDL, mmol/L	-0.11 \pm 0.2	0.105 \pm 0.29	0.577
TC, mmol/L	0.14 \pm 0.147	0.24 \pm 0.26	0.751

^aBetween-group differences (NRE vs. Placebo) in the parameters were assessed by independent samples t-test (parametric and equal variances), Welch's t-test (unequal variances) and Mann-Whitney U test (nonparametric)

Supplementary Table S6: Means of change values \pm SD per parameter before and after 12 week NRE and placebo intake: Body weight, Body composition, Anthropometric parameters and lipid profile of overweight/ obese participants with BMI ≥ 30.0 Kg/ m² and age <40 years.

	Δ NRE (N=13)	Δ Placebo (N=2)	p value ^a
Weight	-3.34 \pm 0.93	0.8 \pm 0.1	<0.001
BMI	-1.22 \pm 0.32	0.3 \pm 0.1	0.103
WC	-4.1 \pm 1.24	-0.5 \pm 2	0.041
BF	-1.44 \pm 0.35	-0.45 \pm 0.35	0.17
BM	0.62 \pm 0.17	-0.05 \pm 0.05	0.07
BM/BF	0.037 \pm 0.009	0.0132 \pm 0.014	0.214
BW	1.26 \pm 0.31	+0.45 \pm 0.55	0.33
WC/HC	-0.005 \pm 0.007	-0.011 \pm 0.008	0.613
MTC	-3.4 \pm 1.41	-2 \pm 2	0.705
MAC	-2.2 \pm 0.58	-1.25 \pm 1.25	0.842
TG, mmol/L	0.02 \pm 0.21	-0.03 \pm 0.18	0.826
HDL, mmol/L	0.038 \pm 0.033	+0.11 \pm 0.17	0.909
LDL, mmol/L	0.33 \pm 0.28	+0.28 \pm 0.64	0.54
TC, mmol/L	0.09 \pm 0.139	0.38 \pm 0.73	0.377

^aBetween-group differences (NRE vs. Placebo) in the parameters were assessed by independent samples t-test (parametric and equal variances), Welch's t-test (unequal variances) and Mann-Whitney U test (nonparametric)

Supplementary Table S7: Means of change values \pm SD per parameter before and after 12 week NRE and placebo intake: Body weight, Body composition, Anthropometric parameters and lipid profile of overweight/ obese participants with BMI ≥ 30.0 and age >40 .

	Δ NRE (N=9)	Δ Placebo (N=8)	p value ^a
Weight	-2.06 \pm 0.29	-0.47 \pm 0.51	0.005
BMI	-0.73 \pm 0.23	-0.2 \pm 0.214	0.034
WC	-0.83 \pm 2.48	-0.71 \pm 0.7	0.159
BF	-0.96 \pm 0.54	-0.0006 \pm 0.33	0.254
BM	-0.033 \pm 0.39	0.27 \pm 0.28	0.9
BM/BF	0.01 \pm 0.01	0.0037 \pm 0.009	0.588
BW	0.83 \pm 0.06	0.128 \pm 0.23	0.222
WC/HC	0.022 \pm 0.02	-0.0043 \pm 0.0057	0.87
MTC	-3.33 \pm 1.3	-0.78 \pm 0.89	0.035
MAC	-1.16 \pm 0.33	-1.21 \pm 0.82	0.209
TG, mmol/L	-0.136 \pm 0.164	0.14 \pm 0.105	0.006
HDL, mmol/L	0.0167 \pm 0.07	0.052 \pm 0.074	0.72
LDL, mmol/L	0.48 \pm 0.47	-0.0443 \pm 0.25	0.18
TC, mmol/L	0.43 \pm 0.46	0.071 \pm 0.34	0.48

^aBetween-group differences (NRE vs. Placebo) in the parameters were assessed by independent samples t-test (parametric and equal variances), Welch's t-test (unequal variances) and Mann-Whitney U test (nonparametric)