

Long-term consumption of a sugar-sweetened soft drink in combination with a Western-type diet is associated with morphological and molecular changes of taste markers independent of body weight development in mice

Barbara Lieder ^{*#1}, Jozef Čonka ^{#2}, Agnes T. Reiner ¹, Victoria Zabel ¹, Dominik Ameur ³, Mark M. Somoza^{3,4,5}, Katarína Šebeková², Peter Celec², Veronika Somoza^{1,4,6}

equal contribution

*Correspondence: Barbara.Lieder@univie.ac.at

Supplemental Material

Table S1. List of primers used in the present study

Gene	Sequence Forward Primer, Reverse Primer	Product size [bp]
18S	CGGCTACCACATCCAAGGAA GCTGGAATTACCGCGGCT	187
ACTB	CCCTGTGCTGCTCACC GCACGATTTCCCTCTCAG	328
Car4	TACGTGGCCCCCTTACTG GCTGATTCTCCTTACAGGCTCC	115
Entpd2	TGCCCTAACCTGAC CCCAGCCATACTTGATGAAGTT	183
GLUT1	CAGTCGGCTATAACACTGGTG GCCCGACAGAGAAGATG	156
GNAT3	GCAACCACCTCATTGTTCT AGAAGAGCCCACAGTCTTGAG	286
Hes6	ACCACCTGCTAGAATCCATGC GCACCCGGTTAGTTTCAAGC	210
HPRT	GAGAGCGTTGGGCTTACCTC ATCGCTAATCACGACGCTGG	136
KCNQ1	ATGCTCTGTGGTGGGGGTG CTTCTGCCCTGTGCTTGTGG	185
Ki67	ATCATTGACCGCTCTTAGGT GCTCGCCTTGATGGTTCCCT	104
Krt8	TACATCAACAAACCTCCGCCG GCAACTCACGGATCTCCTCTT	188
Shh	AAAGCTGACCCCTTAGCCTA TTCGGAGTTCTGTGATCTTCC	103
Slc1a3	ACTGCTGTCTTGTGGGTACA ATAGACTACAGCGCGCATCC	213
Snap-25	CAACTGGAACGCATTGAGGAA GGCCACTACTCCATCCTGATTAT	177
Sox2	GC GGAGTGGAAACTTTGTCC	157

	CGGGAAGCGTGTACTTATCCTT	
Tas1r2	AAGCATCGCCTCCTACTCC GGCTGGCAACTCTTAGAACAC	114
Tas1r3	GAAGCATCCAGATGACTTCA GGGAACAGAAGGACACTGAG	283
Tas2r104	CAAAGGTTTCCTCTGACTATGCT CAAACGCTCAGATGGTTATAATTACC	91
Tas2r106	TATATGGTTGCCACCAGCCT AGAGGTAACCTGCCAGGAAA	215
Tas2r124	CAATTCTAGAGGAGATAGAGACCCTAGT G AGCAAGAGGAAGGGAGACCAAAA	78
Tas2r130	TGAAAGCCATGAAAGCAGTAATT CTGGAGGTGGCTATGAGAAAGG	79

Figure S1

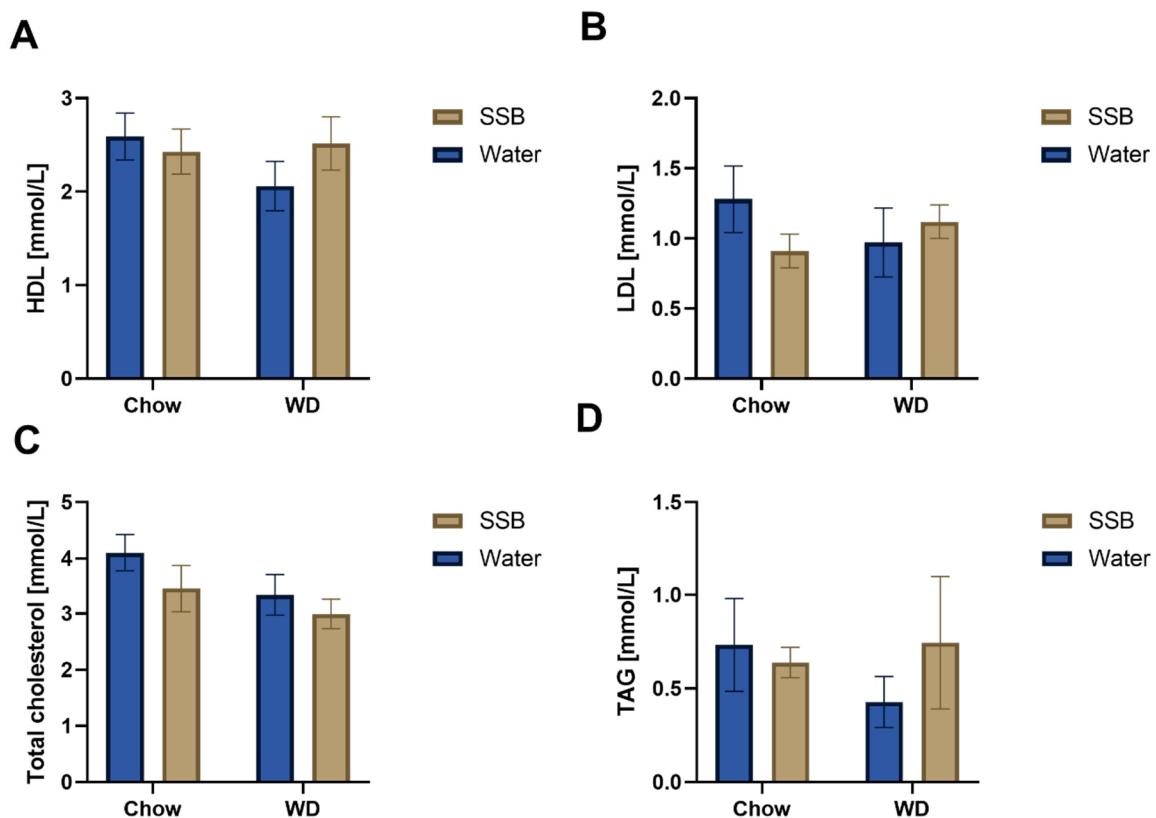


Figure S1. Mean plasma concentrations of (a) high density lipoprotein (HDL), (b) low density lipoprotein (LDL), (c) total cholesterol, and (d) triacylglycerols (TAG) from mice that received either a standard diet (chow) or Western-type diet (WD) with water (blue bars) or a SSB (brown bars) as drink for 24 weeks. Statistical significance was tested using two-way ANOVA with Holm-Sidak post hoc test and assumed at p<0.05.

Figure S2

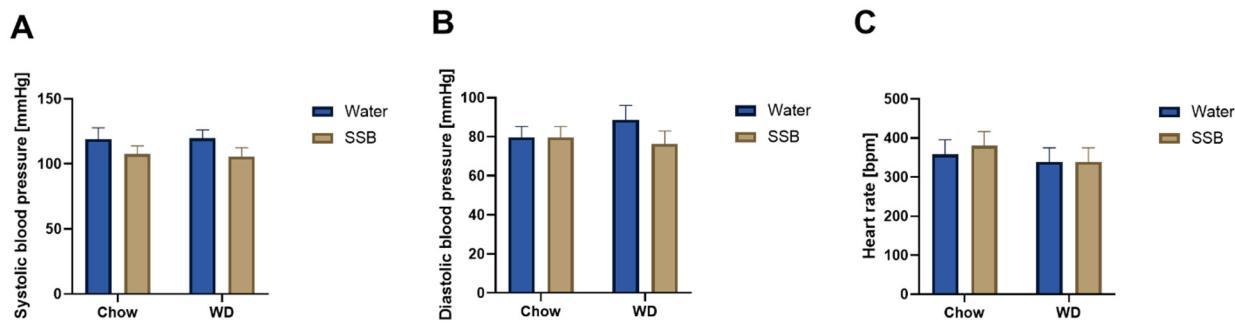


Figure S2. Systolic (a) and diastolic blood pressure (b) [both displayed in mm Hg], and heart rate [beats per minute, bpm] (c) of mice receiving either a standard diet (chow) or Western-type diet (WD) with water (blue bars) or a SSB (brown bars) as drink. All data are shown as mean \pm SEM. Statistical significance was tested using two-way ANOVA with Holm-Sidak post hoc test and assumed at $p < 0.05$.

Figure S3

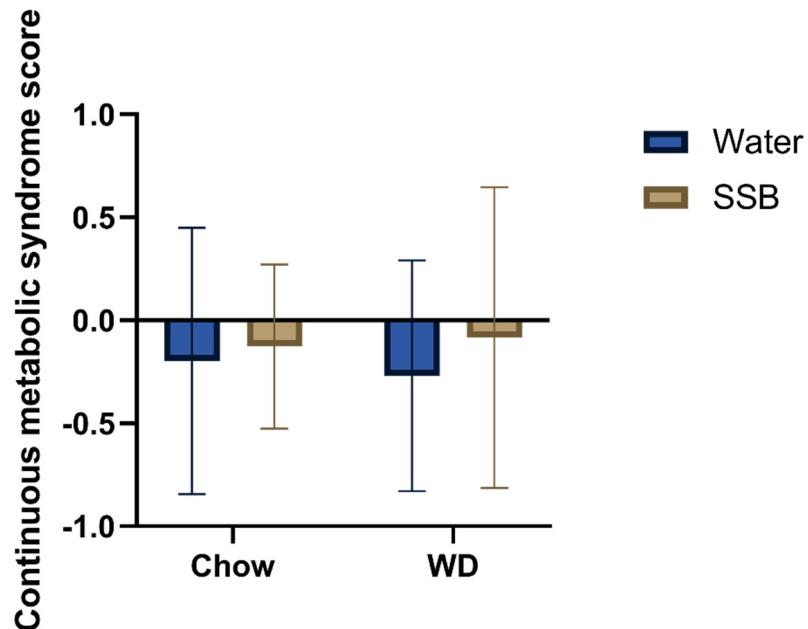


Figure S3. Continuous metabolic syndrome score calculated from the z-scores of fasting glucose, waist circumference, systolic blood pressure, TAG, and HDL of mice receiving either a standard diet (chow) or Western-type diet (WD) with water (blue bars) or a SSB (brown bars) as drink. All data are shown as mean \pm SEM. Statistical significance was tested using two-way ANOVA with Holm-Sidak post hoc test and assumed at $p < 0.05$.