

Homolak et al. (2021) Failure of the brain GLP-1-mediated control of intestinal redox homeostasis in a rat model of sporadic Alzheimer's disease

Supplement 1

Table S1. Plasma SOD – main effects model

contrast	estimate	SE	df	lower.CL	upper.CL	t.ratio	p.value
CTR - STZ	2.5185	0.5706	36	1.3613	3.6757	4.4140	0.0001
(Ex-9) - SAL	-0.6483	0.5706	36	-1.8054	0.5089	-1.1362	0.2634

Table S2. Plasma SOD – treatment interaction model

contrast	estimate	SE	df	lower.CL	upper.CL	t.ratio	p.value
(CTR Ex-9) - (STZ Ex-9)	1.3197	0.7800	35	-0.7838	3.4232	1.6920	0.3430
(CTR Ex-9) - CTR SAL	-1.7840	0.7592	35	-3.8314	0.2634	-2.3500	0.1061
(CTR Ex-9) - STZ SAL	1.8703	0.7592	35	-0.1771	3.9176	2.4636	0.0837
(STZ Ex-9) - CTR SAL	-3.1037	0.7800	35	-5.2071	-1.0002	-3.9793	0.0018
(STZ Ex-9) - STZ SAL	0.5506	0.7800	35	-1.5529	2.6540	0.7059	0.8941
CTR SAL - STZ SAL	3.6542	0.7592	35	1.6069	5.7016	4.8136	0.0002

Table S3. plasma TBARS – main effects model

contrast	estimate	SE	df	lower.CL	upper.CL	t.ratio	p.value
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CTR - STZ	-0.0082	0.0051	36	-0.0186	0.0022	-1.6004	0.1183
(Ex-9) - SAL	-0.0140	0.0051	36	-0.0244	-0.0035	-2.7201	0.0100

Table S4. Plasma TBARS – interaction model

contrast	estimate	SE	df	lower.CL	upper.CL	t.ratio	p.value
(CTR Ex-9) - (STZ Ex-9)	-0.0083	0.0075	35	-0.0284	0.0118	-1.1143	0.6833
(CTR Ex-9) - CTR SAL	-0.0140	0.0073	35	-0.0336	0.0055	-1.9353	0.2322
(CTR Ex-9) - STZ SAL	-0.0222	0.0073	35	-0.0417	-0.0026	-3.0528	0.0214
(STZ Ex-9) - CTR SAL	-0.0057	0.0075	35	-0.0258	0.0144	-0.7694	0.8677
(STZ Ex-9) - STZ SAL	-0.0138	0.0075	35	-0.0340	0.0063	-1.8571	0.2648
CTR SAL - STZ SAL	-0.0081	0.0073	35	-0.0277	0.0115	-1.1175	0.6813

Table S5. Plasma NRP – main effects model

contrast	estimate	SE	df	lower.CL	upper.CL	t.ratio	p.value
CTR - STZ	2906783	877107.3	36	1127926	4685639	3.3141	0.0021
(Ex-9) - SAL	-3295336	877107.3	36	-5074192	-1516480	-3.7571	0.0006

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Table S6. Plasma NRP – interaction model

contrast	estimate	SE	df	lower.CL	upper.CL	t.ratio	p.value
(CTR Ex-9) - (STZ Ex-9)	2296262.9	1267209	35	-1121275.9	5713801.6	1.8121	0.2849
(CTR Ex-9) - CTR SAL	-3873723.3	1233410	35	-7200111.2	-547335.4	-3.1407	0.0172
(CTR Ex-9) - STZ SAL	-388553.6	1233410	35	-3714941.5	2937834.3	-0.3150	0.9890
(STZ Ex-9) - CTR SAL	-6169986.2	1267209	35	-9587524.9	-2752447.4	-4.8690	0.0001
(STZ Ex-9) - STZ SAL	-2684816.5	1267209	35	-6102355.2	732722.3	-2.1187	0.1671
CTR SAL - STZ SAL	3485169.7	1233410	35	158781.8	6811557.6	2.8256	0.0371

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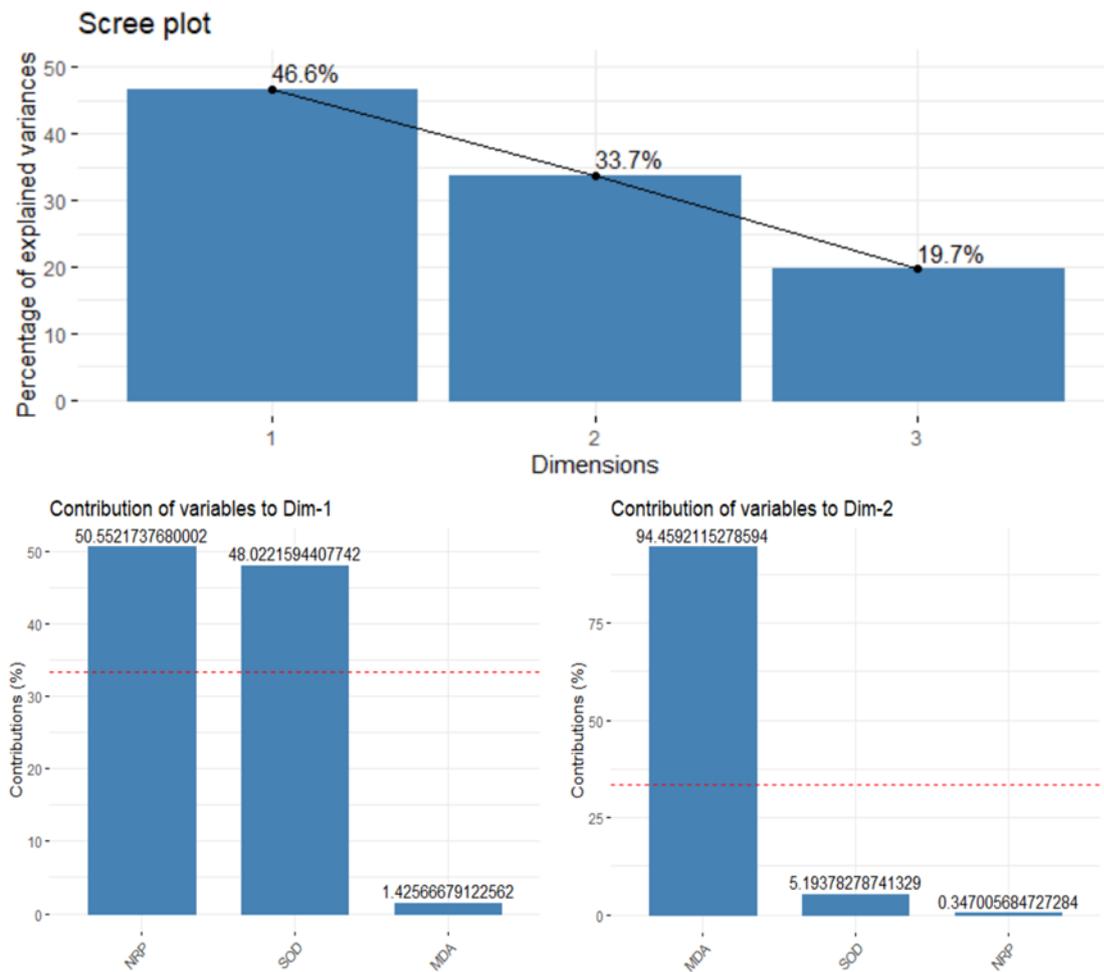


Figure S1. Scree plot and contribution of individual variables to dimensions for plasma oxidative stress PCA.

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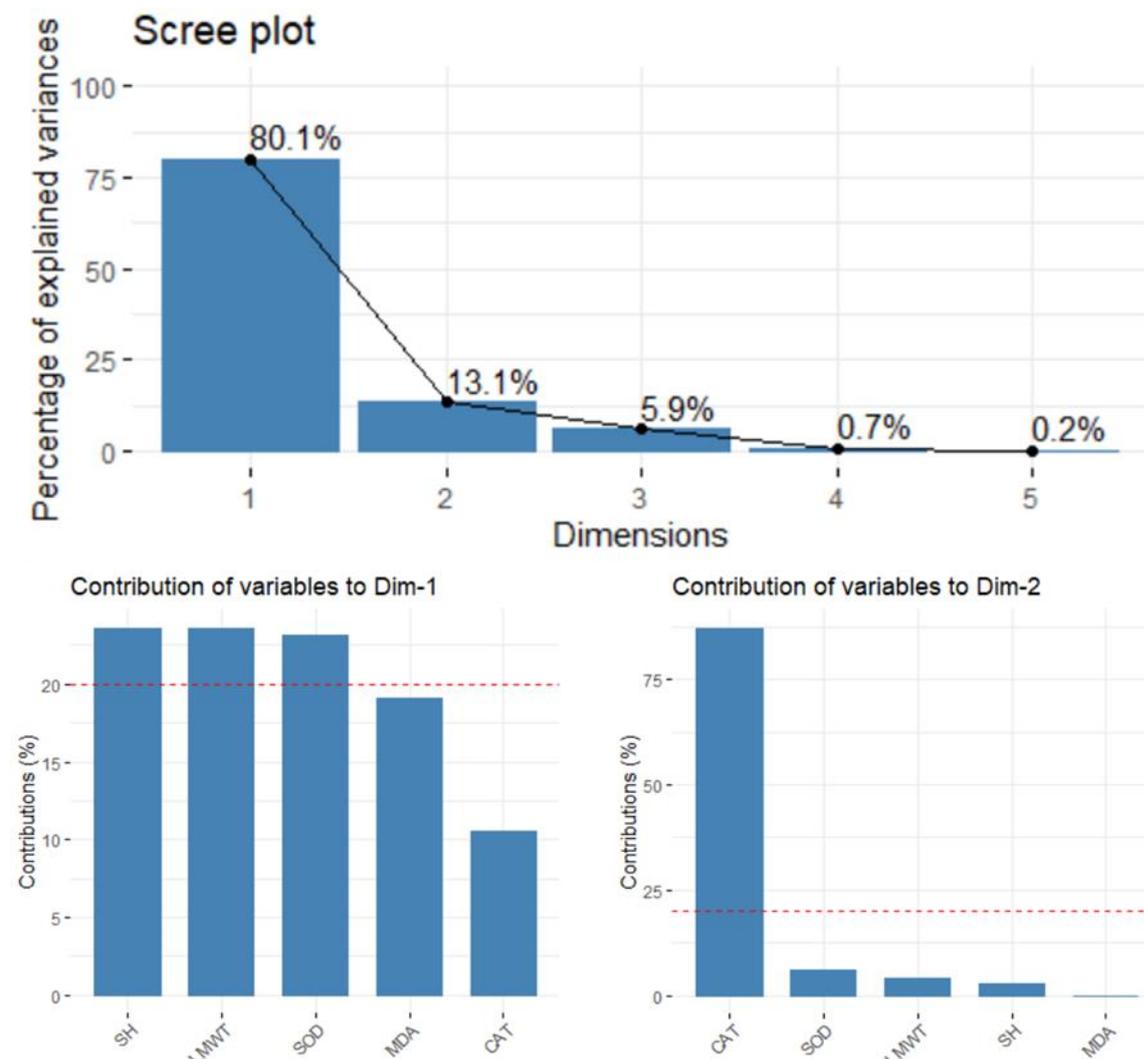


Figure S2. Scree plot and contribution of individual variables to dimensions for duodenum oxidative stress PCA.

Table S7. Duodenum oxidative stress PCA position relative to Dim 1 – main effects model

contrast	estimate	SE	df	lower.CL	upper.CL	t.ratio	p.value
CTR - STZ	-0.7609	0.931	16	-2.7345	1.2128	-0.8172	0.4258
(Ex-9) - SAL	0.9501	0.931	16	-1.0236	2.9238	1.0205	0.3227

Table S8. Duodenum oxidative stress PCA position relative to Dim 1 – interaction model

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contrast	estimate	SE	df	lower.CL	upper.CL	t.ratio	p.value
(CTR Ex-9) - (STZ Ex-9)	1.1843	1.2199	15	-1.4159	3.7846	0.9708	0.3470
(CTR Ex-9) - CTR SAL	2.6792	1.1502	15	0.2276	5.1307	2.3293	0.0342
(CTR Ex-9) - STZ SAL	0.1892	1.1502	15	-2.2623	2.6408	0.1645	0.8715
(STZ Ex-9) - CTR SAL	1.4948	1.2199	15	-1.1054	4.0951	1.2253	0.2394
(STZ Ex-9) - STZ SAL	-0.9951	1.2199	15	-3.5954	1.6051	-0.8157	0.4274
CTR SAL - STZ SAL	-2.4899	1.1502	15	-4.9415	-0.0384	-2.1648	0.0469

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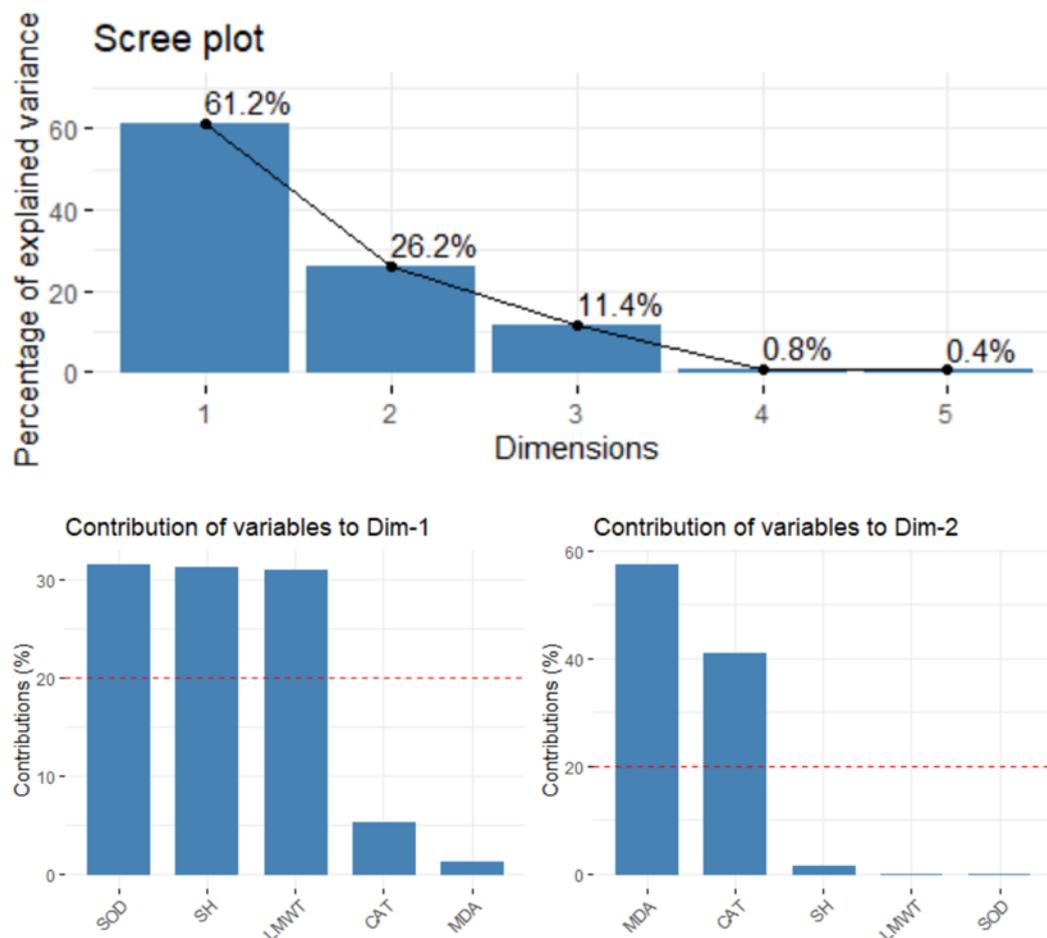


Figure S2. Scree plot and contribution of individual variables to dimensions for ileum oxidative stress PCA.

Table S9. Ileum oxidative stress PCA position relative to Dim 1 – main effects model

contrast	estimate	SE	df	lower.CL	upper.CL	t.ratio	p.value
CTR - STZ	0.6091	0.7543	20	-0.9643	2.1825	0.8075	0.4289
(Ex-9) - SAL	-0.0920	0.7543	20	-1.6654	1.4814	-0.1220	0.9041

Table S10. Ileum oxidative stress PCA position relative to Dim 1 – interaction model

contrast	estimate	SE	df	lower.CL	upper.CL	t.ratio	p.value
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(CTR Ex-9) - (STZ Ex-9)	0.8147	1.0671	19	-1.4187	3.0482	0.7635	0.4545
(CTR Ex-9) - CTR SAL	0.1342	1.1192	19	-2.2082	2.4766	0.1199	0.9058
(CTR Ex-9) - STZ SAL	0.5171	1.0671	19	-1.7163	2.7505	0.4846	0.6335
(STZ Ex-9) - CTR SAL	-0.6805	1.1192	19	-3.0230	1.6619	-0.6081	0.5503
(STZ Ex-9) - STZ SAL	-0.2976	1.0671	19	-2.5311	1.9358	-0.2789	0.7833
CTR SAL - STZ SAL	0.3829	1.1192	19	-1.9596	2.7253	0.3421	0.7360

Table S11. Duodenum TBARS – main effects model

contrast	estimate	SE	df	lower.CL	upper.CL	t.ratio	p.value
CTR - STZ	2.1665	16.8437	16	-33.5407	37.8736	0.1286	0.8993
(Ex-9) - SAL	5.9182	16.8437	16	-29.7889	41.6254	0.3514	0.7299

Table S12. Duodenum TBARS – interaction model

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contrast	estimate	SE	df	lower.CL	upper.CL	t.ratio	p.value
(CTR Ex-9) - (STZ Ex-9)	50.8383	18.5679	15	11.2617	90.4149	2.7380	0.0153
(CTR Ex-9) - CTR SAL	49.1821	17.5060	15	11.8689	86.4953	2.8094	0.0132
(CTR Ex-9) - STZ SAL	8.0847	17.5060	15	-29.2285	45.3979	0.4618	0.6508
(STZ Ex-9) - CTR SAL	-1.6562	18.5679	15	-41.2328	37.9204	-0.0892	0.9301
(STZ Ex-9) - STZ SAL	-42.7536	18.5679	15	-82.3302	-3.1770	-2.3026	0.0360
CTR SAL - STZ SAL	-41.0974	17.5060	15	-78.4106	-3.7842	-2.3476	0.0330

Table S13. Duodenum LMWT – main effects model

contrast	estimate	SE	df	lower.CL	upper.CL	t.ratio	p.value
CTR - STZ	3.5732	2.8087	16	-2.3810	9.5274	1.2722	0.2215
(Ex-9) - SAL	-4.0849	2.8087	16	-10.0391	1.8693	-1.4544	0.1652

Table S14. Duodenum LMWT – interaction model

contrast	estimate	SE	df	lower.CL	upper.CL	t.ratio	p.value
(CTR Ex-9) - (STZ Ex-9)	-1.6827	3.7951	15	-9.7717	6.4064	-0.4434	0.6638

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(CTR Ex-9) - CTR SAL	-8.7568	3.5780	15	-16.3832	-1.1304	-2.4474	0.0272
(CTR Ex-9) - STZ SAL	-0.5117	3.5780	15	-8.1381	7.1148	-0.1430	0.8882
(STZ Ex-9) - CTR SAL	-7.0741	3.7951	15	-15.1632	1.0149	-1.8640	0.0820
(STZ Ex-9) - STZ SAL	1.1710	3.7951	15	-6.9180	9.2601	0.3086	0.7619
CTR SAL - STZ SAL	8.2451	3.5780	15	0.6187	15.8715	2.3044	0.0359

Table S15. Duodenum SH – main effects model

contrast	estimate	SE	df	lower.CL	upper.CL	t.ratio	p.value
CTR - STZ	2.3588	2.1714	16	-2.2445	6.9620	1.0863	0.2935
(Ex-9) - SAL	-2.9370	2.1714	16	-7.5402	1.6663	-1.3526	0.1950

Table S16. Duodenum SH – interaction model

contrast	estimate	SE	df	lower.CL	upper.CL	t.ratio	p.value
(CTR Ex-9) - (STZ Ex- 9)	-1.2986	3.0005	15	-7.6940	5.0969	-0.4328	0.6713
(CTR Ex-9) - CTR SAL	-6.1879	2.8289	15	-12.2176	-0.1582	-2.1874	0.0450

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(CTR Ex-9) - STZ SAL	-0.5782	2.8289	15	-6.6079	5.4515	-0.2044	0.8408
(STZ Ex-9) - CTR SAL	-4.8893	3.0005	15	-11.2848	1.5061	-1.6295	0.1240
(STZ Ex-9) - STZ SAL	0.7204	3.0005	15	-5.6751	7.1158	0.2401	0.8135
CTR SAL - STZ SAL	5.6097	2.8289	15	-0.4200	11.6394	1.9830	0.0660

Table S17. Duodenum CAT – main effects model

contrast	ratio	SE	df	lower.CL	upper.CL	t.ratio	p.value
CTR / STZ	0.9714	0.5584	16	0.2872	3.2856	-0.0504	0.9604
(Ex-9) / SAL	0.7011	0.4030	16	0.2073	2.3713	-0.6178	0.5454

Table S18. Duodenum CAT – interaction model

contrast	ratio	SE	df	lower.CL	upper.CL	t.ratio	p.value
(CTR Ex-9) / (STZ Ex- 9)	3.8914	2.7691	15	0.8538	17.7346	1.9094	0.0755
(CTR Ex-9) / CTR SAL	2.4072	1.6150	15	0.5760	10.0590	1.3093	0.2101
(CTR Ex-9) / STZ SAL	0.6811	0.4570	15	0.1630	2.8461	-0.5724	0.5755

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(STZ Ex-9) / CTR SAL	0.6186	0.4402	15	0.1357	2.8192	-0.6750	0.5100
(STZ Ex-9) / STZ SAL	0.1750	0.1246	15	0.0384	0.7977	-2.4491	0.0271
CTR SAL / STZ SAL	0.2829	0.1898	15	0.0677	1.1824	-1.8818	0.0794

Table S19. Duodenum SOD – main effects model

contrast	estimate	SE	df	lower.CL	upper.CL	t.ratio	p.value
CTR - STZ	0.0207	0.0236	16	-0.0294	0.0708	0.8745	0.3948
(Ex-9) - SAL	-0.0379	0.0236	16	-0.0880	0.0122	-1.6018	0.1288

Table S20. Duodenum SOD – interaction model

contrast	estimate	SE	df	lower.CL	upper.CL	t.ratio	p.value
(CTR Ex-9) - (STZ Ex-9)	-0.0158	0.0331	15	-0.0864	0.0549	-0.4760	0.6409
(CTR Ex-9) - CTR SAL	-0.0703	0.0313	15	-0.1369	-0.0036	-2.2480	0.0400
(CTR Ex-9) - STZ SAL	-0.0172	0.0313	15	-0.0838	0.0494	-0.5500	0.5904
(STZ Ex-9) - CTR SAL	-0.0545	0.0331	15	-0.1251	0.0162	-1.6434	0.1211

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(STZ Ex-9) - STZ SAL	-0.0014	0.0331	15	-0.0721	0.0692	-0.0425	0.9667
CTR SAL - STZ SAL	0.0531	0.0313	15	-0.0135	0.1197	1.6980	0.1101

Table S21. Ileum TBARS – main effects model

contrast	estimate	SE	df	lower.CL	upper.CL	t.ratio	p.value
CTR - STZ	8.1165	9.1806	20	-11.0339	27.2670	0.8841	0.3872
(Ex-9) - SAL	20.1114	9.1806	20	0.9610	39.2619	2.1906	0.0405

Table S22. Ileum TBARS – interaction model

contrast	estimate	SE	df	lower.CL	upper.CL	t.ratio	p.value
(CTR Ex-9) - (STZ Ex- 9)	26.5062	11.4890	19	2.4595	50.5529	2.3071	0.0325
(CTR Ex-9) - CTR SAL	40.3400	12.0497	19	15.1197	65.5604	3.3478	0.0034
(CTR Ex-9) - STZ SAL	28.2279	11.4890	19	4.1812	52.2746	2.4570	0.0238
(STZ Ex-9) - CTR SAL	13.8339	12.0497	19	-11.3865	39.0543	1.1481	0.2652

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(STZ Ex-9) - STZ SAL	1.7217	11.4890	19	-22.3250	25.7685	0.1499	0.8825
CTR SAL - STZ SAL	-12.1121	12.0497	19	-37.3325	13.1083	-1.0052	0.3274

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Table S23. Ileum CAT – main effects model

contrast	ratio	SE	df	lower.CL	upper.CL	t.ratio	p.value
CTR / STZ	1.3681	0.3664	20	0.7826	2.3918	1.1704	0.2556
(Ex-9) / SAL	1.8305	0.4902	20	1.0470	3.2001	2.2575	0.0353

Table S24. Ileum CAT – interaction model

contrast	ratio	SE	df	lower.CL	upper.CL	t.ratio	p.value
(CTR Ex-9) / (STZ Ex-9)	1.2282	0.4642	19	0.5568	2.7090	0.5439	0.5928
(CTR Ex-9) / CTR SAL	1.6256	0.6444	19	0.7091	3.7267	1.2258	0.2352
(CTR Ex-9) / STZ SAL	2.5043	0.9465	19	1.1354	5.5236	2.4290	0.0252
(STZ Ex-9) / CTR SAL	1.3236	0.5246	19	0.5774	3.0342	0.7072	0.4880
(STZ Ex-9) / STZ SAL	2.0390	0.7706	19	0.9244	4.4973	1.8852	0.0748
CTR SAL / STZ SAL	1.5405	0.6106	19	0.6720	3.5316	1.0902	0.2893