

Table S1: Male Survival Statistics by Test Site

Group	n	Median	%Change Median	Log-rank	p90	%Change p90	Wang-Allison
Males at TJL							
Control	99	789			1070		
AKG_early	51	811	2.79	0.985	1066	-0.37	1.000
Asta_low	108	759	-3.87	0.560	1062	-0.75	0.058
Asta_late
Atortel	51	776	-1.65	0.624	1050	-1.87	0.774
M160_late	54	775	-1.77	0.593	1073	0.28	1.000
Mec_high	51	731	-7.41	0.527	ND	ND	0.016
Mec_late	51	827	4.82	0.961	1051	-1.78	1.000
Meth	51	773	-2.09	0.882	1029	-3.83	1.000
Mife	48	665	-15.72	0.046	1001	-6.45	0.383
Pio	54	858	8.75	0.083	1165	8.88	0.183
Pio_late	57	829	5.07	0.841	1116	4.30	0.780
Males at UM							
Control	102	832			1141		
AKG_early	51	875	5.17	0.382	1169	2.45	0.263
Asta_low	51	887	6.61	0.487	1126	-1.31	0.774
Asta_late	51	876	5.29	0.646	1105	-3.16	0.009
Atortel	51	855	2.76	0.957	1103	-3.33	0.579
M160_late	48	977	17.37	0.060	1169	2.45	0.257
Mec_high	51	848	1.92	0.892	ND	ND	0.028
Mec_late	52	905	8.77	0.772	1141	0.00	0.789
Meth	51	836	0.48	0.215	1050	-7.98	0.020
Mife	51	923	10.94	0.423	1131	-0.88	1.000
Pio	51	875	5.17	0.693	1110	-2.72	1.000
Pio_late	51	877	5.35	0.844	1078	-5.52	0.266
Males at UT							
Control	99	807			1111		
AKG_early	51	826	2.35	0.6481	1101	-0.90	1.000
Asta_low	51	870	7.81	0.3754	1142	2.79	0.389
Asta_late	51	824	2.11	0.4305	1048	-5.67	0.141
Atortel	51	865	7.19	0.7099	1019	-8.28	0.267
M160_late	51	853	5.70	0.3529	1109	-0.18	1.000
Mec_high	51	939	16.36	0.2658	1119	0.72	0.581
Mec_late	51	798	-1.12	0.5940	1049	-5.58	0.090
Meth	51	908	12.52	0.4045	1121	0.90	1.000
Mife	51	824	2.11	0.7941	1042	-6.21	0.267
Pio	51	846	4.83	0.8059	1039	-6.48	0.090
Pio_late	51	876	8.49	0.6069	1094	-1.53	0.774

Table S2: Female Survival Statistics by Test Site

Group	n	Median	%Change Median	Log-rank	p90	%Change p90	Wang-Allison
Females at TJL							
Control	92	948			1163		
AKG_early	44	864	-8.91	0.020	1105	-4.99	1.000
Asta_low	44	914	-3.59	0.010	1059	-8.94	0.103
Atortel	44	917	-3.32	0.040	1168	0.43	0.718
M160_late	44	864	-8.91	0.002	1091	-6.19	0.103
Mec_high	44	891	-6.07	0.003	1087	-6.53	0.016
Meth	44	908	-4.22	0.033	1112	-4.39	0.222
Mife	44	879	-7.33	0.118	1128	-3.01	1.000
Pio	44	919	-3.11	0.002	1061	-8.77	0.016
Pio_late	44	898	-5.33	0.234	1129	-2.92	1.000
Females at UM							
Control	88	850			1069		
AKG_early	44	899	5.76	0.756	1025	-4.12	0.541
Asta_low	44	898	5.59	0.594	1094	2.34	0.365
Atortel	44	838	-1.41	0.726	1033	-3.37	1.000
M160_late	44	860	1.18	0.650	1034	-3.27	0.545
Mec_high	44	911	7.12	0.413	1123	5.05	0.365
Meth	44	874	2.76	0.606	1065	-0.37	1.000
Mife	44	861	1.24	0.603	1002	-6.27	0.541
Pio	44	801	-5.76	0.315	1048	-1.96	1.000
Pio_late	42	852	0.24	0.756	1046	-2.15	0.545
Females at UT							
Control	92	865			1127		
AKG_early	44	902	4.22	0.704	1097	-2.66	1.000
Asta_low	44	815	-5.78	0.027	1039	-7.81	0.103
Atortel	44	880	1.73	0.857	1086	-3.64	1.000
M160_late	44	825	-4.62	0.009	1005	-10.83	0.009
Mec_high	44	880	1.68	0.917	1070	-5.06	0.751
Meth	44	908	4.91	0.739	1075	-4.61	1.000
Mife	44	881	1.85	0.418	1066	-5.41	1.000
Pio	44	802	-7.28	0.002	982	-12.87	0.336
Pio_late	44	841	-2.83	0.223	1041	-7.63	0.547

Table S3: Food concentrations of compounds. Prior to initiation of each study, Pilot food was manufactured and tested prior to feeding young adult test mice for 8 weeks on the diet. Subsequently, diet was manufactured to feed mice across their lifespan. Samples of this diet were tested after 3-months of storage at 4°C. Subsequently food was tested again at the end of the lifespan study. Target concentration (in ppm) is shown, followed by measured concentration (in PPM, and as a percentage of the target concentration), and finally the coefficient of variation, expressed as a percentage of the mean (CV%) for each of these food samples. Methods for measuring each compound are described below.

Compound	Target PPM	Pilot Food			Lifespan Food		
		Actual PPM	% expected	CV %	Actual PPM	% expected	CV %
AKG	20,000	3,355	16.8	26.0	3,262	16.3	40.9
Asta	800	867	108.0	5.7	880	109.7	7.3
Ator	120	66	55.0	7.4	48	38.2	32.7
Tel	30	13	43.0	4.2	27	89.9	33.1
M160	300	39	13.0	2.7	126	42.1	7.1
Mec	2,400	1907	79.1	0.2	1727	71.9	3.7
Meth	0.2	0.064	32.2	149.2	0.3	149.2	9.4
Mife	30	17	58.0	1.5	30	99.7	6.4
Pio	100	126	125.7	6.0	94	93.5	3.2

Table S5: Plasma concentrations of compounds (in ng/ml).

Compound	Males			Females		
	Mean	SD	SEM	Mean	SD	SEM
AKG	-	-	-	-	-	-
Asta	19.3	9.2	3.8	18.5	15.2	5.7
Ator	1.7	0.2	0.1	1.1	1.1	0.4
Tel	56.2	29.2	11.9	125.8	61.7	21.8
M160	34.0	54.1	22.1	40.0	61.7	21.8
Mec	547.0	115.4	47.1	556.9	319.5	113.0
Meth	0.7	0.1	0.0	0.8	0.1	0.0
Mife	24.0	6.0	2.0	13.0	4.0	1.4
Pio	2508.3	534.7	218.3	2351.0	866.4	306.3

