

## **Addition of Prebiotics to the Ketogenic Diet Improves Metabolic Profile but Does Not Affect Seizures in a Rodent Model of Infantile Spasms Syndrome**

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**Table S1.** Detailed composition of the ketogenic diet. Diets are based on Nutricia KetoCal Formulation (see: <https://shop.myketocal.com/product/ketocal-41-powder>) for detailed information.

Ingredients	Ketogenic Rat Formula Amount (g/Kg)	Ingredients	Ketogenic Rat Formula Amount (g/Kg)
<b>Calories Total</b>	2657 kcal	<b>Vitamin and Mineral Composition</b>	
Fat Total	264.75	Sodium	0.39
Saturated	31.23	Calcium	43.15
+Trans	0	Iron	0.003
Polyunsaturated	129.84	Linoleic acid	2.85
Omega-6	168.79	Aspartame	0.015
Omega-3	2.60	Thiamine	0.00019
Monounsaturated	64.92	Riboflavin	0.00020
Cholesterol	0.11	Niacin	0.0023
Carbohydrate	20.41	Folic Acid	5.88E-05
Fibre	0	Pantothenic Acid	0.00080
Sugars	5.79	Biotin	3.87E-06
Protein	55.83	Choline	0.15
Alanine	6.91	Inositol	0.042
Arginine	4.54	Phosphorus	0.20
Aspartic Acid	16.58	Magnesium	0.034
Cysteine	3.36	Zinc	0.0018
Glutamic Acid	26.25	Iodine	2.54E-05
Glycine	2.76	Manganese	0.00050
Histidine	3.16	Copper	0.00025
Isoleucine BCAA	9.08	Molybdenum	8.05E-06
Leucine BCAA	17.37	Chromium	5.88E-06
Lysine EAA	3.16	Selenium	1.05E-05
Phenylalanine EAA	5.13	Potassium	0.33
Proline	13.03	Chloride	0.15
Serine	9.08	Vitamin A	464.32 IU
Threonine EAA	13.03	Vitamin C	23.16 %DV + 0.018g
Tryptophan EAA	3.75	Vitamin B6	0.00020
Tyrosine	5.33	Vitamin B12	4.024E-07
Valine EAA BCAA	10.26	Vitamin D	34.74 %DV
		Vitamin D3	64.39 IU
		Vitamin E	259.67 %DV + 3.40 IU
		Vitamin K	1.24E-05

**Table S2** Primers used in the present study.

Target	Forward	Reverse
<i>Fas</i>	GACCCTGACTCCAAGTTATTCGA	CGTCAAGCGGGAGACAGACT
<i>Cpt1a</i>	GCTTCCCCTTACTGGTTCC	AACTGGCAGGCAATGAGACT
<i>Ampk</i>	AGATATCAGGGAACATGAATGG	ATGGTTGAACTATAAGACGGG
<i>Acat1</i>	ATCTCAGTGAAAGGTAAACCAG	CTTTGGCACTTTACTGAAGTC
<i>Hmgcs2</i>	CAGCTTACCGCAGGAAAATCC	CAAAAGGGTGTGTGGAAGATCA
<i>Ywhaz</i>	TTGAGCAGAAGACGGAAGGT	GAAGCATTGGGGATCAAGAA
<i>CycA</i>	AGCACTGGGGAGAAAGGATT	AGCCACTCAGTCTTGGCAGT

**Table S3** The average relative abundances of operational taxonomic units (OTUs) detected in the present study. R - normally developing reference group; KDL - ketogenic diet formula; KDL+PRE - ketogenic diet formula plus prebiotic fiber

OTU ID	Closest species	R	KDL	KDL+PRE	P value
Otu001	<i>Ligilactobacillus animalis</i>	68.866a	20.641b	3.675c	<0.001
Otu002	<i>Enterococcus</i> unclassified	0.319a	22.143b	29.848b	<0.001
Otu003	<i>Aggregatibacter pneumotropica</i>	6.490a	17.468ab	23.839b	0.014
Otu004	<i>Escherichia coli</i>	7.757	12.757	17.397	0.496
Otu005	<i>Streptococcus acidominimus</i>	3.374a	11.599b	8.660ab	0.004
Otu006	<i>Lactobacillus johnsonii</i>	9.927a	1.982b	7.237a	0.001
Otu007	<i>Lactobacillus reuteri</i>	1.593	2.413	4.556	0.091
Otu008	<i>Staphylococcus</i> unclassified	0.315a	2.389b	3.630b	0.001
Otu009	<i>Planococcaceae</i> unclassified	0.000a	6.874b	0.000a	0.002
Otu010	<i>Acinetobacter guillouiae</i>	0.000a	0.873b	0.565b	0.001
Otu011	<i>Romboutsia timonensis</i>	0.812a	0.000b	0.000b	<0.001
Otu012	Bacillales unclassified	0.000a	0.100b	0.097b	0.003
Otu013	<i>Lactococcus lactis</i>	0.000a	0.130a	0.034b	0.001
Otu015	<i>Rothia nasimurium</i>	0.004	0.118	0.007	0.414
Otu017	<i>Lactobacillales</i> unclassified	0.028	0.014	0.046	0.258
Otu018	<i>Streptococcus danieliae</i>	0.085a	0.000b	0.016ab	0.003
Otu019	<i>Flavobacteriaceae</i> unclassified	0.000a	0.053b	0.007a	0.001
Otu020	<i>Allobacillus halotolerans</i>	0.000a	0.053b	0.005a	0.001
Otu021	SUP05 unclassified	0.041	0.006	0.014	0.114
Otu023	<i>Staphylococcus sciuri</i>	0.000	0.012	0.034	0.124
Otu024	<i>Ligilactobacillus pobuzihii</i>	0.000a	0.028b	0.021ab	0.014
Otu025	<i>Ligilactobacillus faecis</i>	0.004ab	0.035a	0.000b	0.006
Otu026	<i>Lactobacillus</i> unclassified	0.039a	0.010b	0.002b	0.001
Otu027	<i>Streptococcus</i> unclassified	0.000	0.004	0.011	0.104
Otu028	<i>Lactobacillales</i> unclassified	0.000a	0.000a	0.020b	0.006
Otu029	<i>Streptococcus luteciae</i>	0.000a	0.012ab	0.014b	0.017
Otu030	<i>Lactobacillus</i> unclassified	0.000a	0.000a	0.016b	0.018
Otu031	<i>Microbacterium lacticum</i>	0.000	0.004	0.020	0.223
Otu032	<i>Bacteroides vulgatus</i>	0.010	0.006	0.004	0.466
Otu033	<i>Lactobacillales</i> unclassified	0.000	0.016	0.016	0.056
Otu035	<i>Lactobacillus</i> unclassified	0.006	0.000	0.004	0.195
Otu036	<i>Bacteroides acidifaciens</i>	0.002	0.002	0.007	0.434
Otu038	<i>Bacteroidales</i> S24-7 unclassified	0.004	0.004	0.005	0.901
Otu039	<i>Lactobacillales</i> unclassified	0.000a	0.000a	0.011b	0.018
Otu041	<i>Enterobacteriaceae</i> unclassified	0.000	0.008	0.005	0.241
Otu042	<i>Akkermansia muciniphila</i>	0.006	0.000	0.005	0.178
Otu043	<i>Enterococcus saccharolyticus</i>	0.000	0.004	0.007	0.196
Otu044	<i>Lachnospiraceae</i> unclassified	0.006	0.008	0.002	0.275
Otu045	<i>Lactobacillus</i> unclassified	0.004	0.008	0.000	0.164
Otu046	<i>Bifidobacterium pseudolongum</i>	0.000a	0.000a	0.013b	0.005
Otu047	<i>Lactobacillus</i> unclassified	0.000a	0.000a	0.014b	0.018
Otu049	<i>Aggregatibacter pneumotropica</i>	0.000	0.004	0.004	0.345
Otu050	<i>Blautia wexlerae</i>	0.004	0.002	0.005	0.615
Otu056	<i>Faecalibacterium rausnitzii</i>	0.006	0.002	0.004	0.417

Note: Different letters within a row indicated a significance ( $p<0.05$ ) between groups.