

Supplementary Information : COG distribution of the twenty *Lactobacillus* genomes.

	Lacto bacill us	Lacto bacill us	Lacto bacill us	Lacto bacill us	Lacto bacill us	Lacto bacill us	Lacto bacill us	Lacto bacill us	Lacto bacill us	Lacto bacill us	Lacto bacill us	Lacto bacill us	Lacto bacill us	Lacto bacill us	Lacto bacill us	Lacto bacill us	Lacto bacill us	Lacto bacill us	Lacto bacill us	Lacto bacill us
COG Categories	NCFM	4571	3	ST1	5	533	365	2	334	BL23	GG	705	23k	367	JDM1	1	3956	6	1112	rius
Amino acid transport and metabolism	8.39	7.51	6.39	7.56	7.48	7.05	8.21	8.05	8.23	8.21	8.36	7.99	6.4	7.31	8.47	8.52	9.99	8.17	8.22	7.93
Carbohydra te transport and metabolism	10.87	7.24	10.29	10.27	10.33	10.97	5.44	5.26	10.54	13.68	13.16	13.95	7.47	8.35	11.67	11.38	6.18	6.29	6.55	8.49
Cell cycle control, cell division, chromosom e partitioning	1.43	1.21	1.56	1.32	1.57	1.46	1.46	1.43	1.27	1.11	1.28	1.37	1.52	1.26	1.02	1.07	1.15	1.21	1.05	1.86
Cell motility Cell wall/memb rane/envel ope biogenesis	0.33	0.4	0.35	0.37	0.36	0.33	0.38	0.32	0.19	0.17	0.23	0.18	0.44	0.33	0.29	0.24	0.55	0.48	0.49	0.43
Coenzyme transport and metabolism	5.99	4.96	6.17	5.10	5.49	6.25	6.29	6.22	4.7	4.83	5.3	5.47	5.64	5.57	5.44	5.79	4.97	5.08	5.13	6.57
Defense mechanism s	1.89	2.48	2.06	2.52	2.35	2.13	2.22	2.31	2.59	2.44	2.51	2.6	3.36	2.95	3.85	3.69	4.6	4.96	5.56	2.48
Energy production and conversion	2.47	2.88	2.91	3.02	2.57	2.73	2.68	3.03	3.1	3.16	3.29	4.1	2.15	1.53	2.17	2.02	1.15	1.81	1.67	1.92
Function unknown	4.1	3.22	3.62	3.90	3.56	3.52	2.91	3.03	4.52	4.28	4.02	4.19	3.93	4.04	4.34	4.32	3.76	4.23	4.45	4.03
General function prediction only	9.04	8.58	10.29	9.32	9.69	9.51	9.13	8.84	9.31	9.45	9.23	8.83	11.02	9.93	8.84	8.64	8	8.95	8.71	9.98
Inorganic ion transport and metabolism	11.84	10.93	11.92	11.84	11.83	11.57	11.35	11.16	12.09	12.27	12.06	11.78	12.29	12.34	13.06	13.04	11.75	11.98	12.05	11.09
Intracellula r trafficking, secretion, and	4.23	4.43	4.26	4.28	4.49	4.32	4.45	4.46	4.23	4.4	4.48	4.46	4.37	4.69	4.87	4.76	4.24	3.57	3.83	3.59
	1.24	1.41	1.49	1.19	1.43	1.46	1.46	1.43	0.99	0.94	0.82	0.88	1.33	1.2	0.98	0.95	1.33	1.39	1.3	1.49

vesicular transport																				
Lipid transport and metabolism	2.21	2.88	1.99	2.45	2.07	2.13	2.91	3.03	2.54	2.31	2.33	2.38	2.85	3.17	2.54	2.62	3.03	2.66	2.66	2.79
Nucleotide transport and metabolism	5.01	5.57	4.33	4.22	4.49	4.19	5.75	6.06	3.81	3.59	3.7	3.84	5.07	3.88	3.68	3.69	5.09	5.02	5.07	4.4
Posttranslational modification, protein turnover, chaperones	2.8	2.95	2.98	2.70	3.06	3.19	3.3	3.27	2.54	2.57	2.51	2.43	3.04	2.62	2.46	2.22	2.85	2.84	2.9	3.1
Replication, recombination and repair	7.42	14.62	7.74	9.95	8.7	7.78	8.51	9.16	9.5	7.27	7.13	5.74	6.84	7.26	4.99	5.59	12.72	11.31	10.2	8.8
Secondary metabolites biosynthesis, transport and catabolism	0.52	0.87	0.35	0.44	0.57	0.47	0.54	0.48	1.08	1.11	0.96	0.93	1.08	1.91	1.11	1.27	1.03	1.39	1.42	1.05
Signal transduction mechanisms	3.64	2.75	3.19	2.89	2.78	3.72	5.06	4.38	3.62	3.63	3.38	3.62	3.29	3.77	3.89	3.96	2.85	3.39	3.46	3.66
Transcription	7.74	5.97	8.23	7.68	7.13	7.78	7.36	7.09	8.14	8.29	8.45	8.65	8.68	9.66	10.11	10.15	6.42	6.9	6.74	7.56
Translation, ribosomal structure and biogenesis	8.85	9.12	9.87	8.88	10.05	9.44	10.58	11	7.01	6.28	6.81	6.62	9.25	8.24	6.22	6.1	8.36	8.35	8.53	8.8
Not in COGs	27.26	23.72	29.78	33.08	26.79	27.72	35.87	48.39	31.62	31	30.98	29.85	26.35	27.8	25.71	28.64	20.68	25.7	21.36	32.79