Pathway	Lactate <=> Pyruvate							Ethanol <=> Acetic acid =>Acetyl-CoA								Glycolysis																			TCA cycle																									
KO	K00016	K00101	K00102	K03777	K03778	K00427	K03303	K00121	K04072	K13953	K13954	K13979	K18118	K00128	K01895	K00845	K00886	K01810	K00850	K03841	K11532	K16370	K01623	K01624	K00134	K01803	K00927	K01834	K15633	K01689	K00873	K01610	K01958	K03737	K00161	K00162	K00163	K00382	K00627	K01647	K01681	K01682	K00031	K00164	K00658	K01902	K01903	K18118	K00239	K00240	K00241	K00242	K00244	K00247	K01679	K00024	K00116
Bifidobacterium asteroides 7101	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	2	1	2	0	1	1	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0
Gilliamella apicola A-1-24	1	0	0	1	1	0	0	0	1	1	1	1	0	0	0	0	0	1	1	0	0	0	0	4	1	1	1	1	0	1	1	0	0	1	0	0	1	1	1	0	0	0	1	0	0	1	1	0	0	0	0	0	1	1	0	0	0
Gilliamella apicola A-12-12	1	0	0	1	1	0	0	0	1	1	0	1	0	0	0	0	0	1	1	0	0	0	0	5	2	2	1	1	0	1	1	0	0	1	0	0	1	1	1	0	0	0	1	0	0	1	1	0	0	0	0	0	1	1	0	0	0
Gilliamella apicola A-2-24	1	0	0	1	1	0	0	0	1	1	1	1	0	0	0	0	0	1	1	0	0	0	0	4	1	1	1	1	0	1	1	0	0	1	0	0	1	1	1	0	0	0	1	0	0	1	1	0	0	0	0	0	1	1	0	0	0
Gilliamella sp. A-4-12 A-4-12	1	0	0	1	1	0	0	0	1	1	1	0	0	0	0	0	0	1	1	1	0	0	0	4	1	1	1	1	0	1	1	0	0	1	0	0	1	1	1	0	0	0	1	0	0	1	1	0	0	0	0	0	1	1	0	0	0
Gilliamella apicola A-7-12	1	0	0	1	1	0	0	0	1	1	1	1	0	0	0	0	0	1	1	0	0	0	0	4	1	1	1	1	0	1	1	0	0	1	0	0	1	1	1	0	0	0	1	0	0	1	1	0	0	0	0	0	1	1	0	0	0
Gilliamella apicola A-7-24	1	0	0	1	1	0	0	0	1	1	0	1	0	0	0	0	0	1	1	0	0	0	0	5	2	2	1	1	0	1	1	0	0	1	0	0	1	1	1	0	0	0	1	0	0	1	1	0	0	0	0	0	1	1	0	0	0
Gilliamella apicola A-8-12	1	0	0	1	1	0	0	0	1	1	0	1	0	0	0	0	0	1	1	0	0	0	0	5	2	2	1	1	0	1	1	0	0	1	0	0	1	1	1	0	0	0	1	0	0	1	1	0	0	0	0	0	1	1	0	0	0
Gilliamella apicola A-9-12	1	0	0	1	1	0	0	0	1	1	1	1	0	0	0	0	0	1	1	0	0	0	0	4	1	1	1	1	0	1	1	0	0	1	0	0	1	1	1	0	0	0	1	0	0	1	1	0	0	0	0	0	1	1	0	0	0
Snodgrassella alvi A-9-24	1	1	0	1	0	0	1	1	0	1	0	0	1	0	0	0	0	1	0	1	0	0	0	1	1	1	1	0	1	1	0	0	0	0	0	0	1	2	1	1	0	1	1	1	1	0	0	1	1	1	1	1	1	0	1	1	1
Gilliamella sp. A-TSA1 A-TSA1	1	0	0	1	1	0	0	0	1	1	1	0	0	0	0	0	0	1	1	1	0	0	0	4	2	1	1	1	0	1	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0	1	1	0	0	0	0	0	1	1	0	0	0
Gilliamella sp. A-TSA2 A-TSA2	1	0	0	1	1	0	0	0	1	1	1	0	0	0	0	0	0	1	1	1	0	0	0	4	2	1	1	1	0	1	1	0	0	1	0	0	1	1	1	0	0	0	1	0	0	1	1	0	0	0	0	0	1	1	0	0	0
Gilliamella sp. A-TSA3 A-TSA3	1	0	0	1	1	0	0	0	1	1	1	0	0	0	0	0	0	1	1	1	0	0	0	4	2	1	1	1	0	1	1	0	0	1	0	0	1	1	1	0	0	0	1	0	0	1	1	0	0	0	0	0	1	1	0	0	0
Gilliamella sp. A-TSA4 A-TSA4	1	0	0	1	1	0	0	0	1	1	1	0	0	0	0	0	0	1	1	1	0	0	0	4	2	1	1	1	0	1	1	0	0	1	0	0	1	1	1	0	0	0	1	0	0	1	1	0	0	0	0	0	1	1	0	0	0
Bifidobacterium asteroides A11	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	2	1	2	0	1	1	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0
Snodgrassella alvi A12	1	1	0	1	0	0	1	0	0	1	0	0	1	0	0	0	0	1	0	1	0	0	0	1	1	1	1	0	1	1	0	0	0	0	0	0	1	2	1	1	0	1	1	1	1	0	0	1	1	1	1	1	1	0	1	1	1
Snodgrassella alvi A5	1	1	0	1	0	0	1	1	0	1	0	0	1	0	0	0	0	1	0	1	0	0	0	1	1	1	1	0	1	1	0	0	0	0	0	0	1	2	1	1	0	1	1	1	1	0	0	1	1	1	1	1	1	0	1	1	1
Gilliamella apicola A8	1	0	0	1	1	0	0	0	1	1	1	1	0	0	0	0	0	1	1	0	0	0	0	4	1	1	1	1	0	1	1	0	0	1	0	0	1	1	1	0	0	0	1	0	0	1	1	0	0	0	0	0	1	1	0	0	0
Gilliamella apicola A9	1	0	0	1	1	0	0	0	1	1	1	1	0	0	0	0	0	1	1	0	0	0	0	4	1	1	1	1	0	1	1	0	0	1	0	0	1	1	1	0	0	0	1	0	0	1	1	0	0	0	0	0	1	1	0	0	0
Gilliamella sp. AM1 AM1	1	0	0	1	1	0	0	0	1	1	1	0	0	0	0	0	0	1	1	1	0	0	0	4	2	1	1	1	0	1	1	0	0	1	0	0	1	1	1	0	0	0	1	0	0	1	1	0	0	0	0	0	1	1	0	0	0
Gilliamella apicola AM4	1	0	0	1	1	0	0	0	1	1	0	1	0	0	0	0	0	1	1	0	0	0	0	5	1	2	1	1	0	1	1	0	0	1	0	0	1	1	1	0	0	0	1	0	0	1	1	0	0	0	0	0	1	1	0	0	0
Gilliamella apicola AM6	1	0	0	1	1	0	0	0	1	1	0	1	0	0	0	0	0	1	1	0	0	0	0	5	1	2	1	1	0	1	1	0	0	1	0	0	1	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	1	1	0	0	0
Gilliamella apicola Aw-17	1	0	0	1	1	0	0	0	1	1	0	1	0	0	0	0	0	1	1	0	0	0	0	5	2	2	1	1	0	1	1	0	0	1	0	0	1	1	1	0	0	0	1	0	0	1	1	0	0	0	0	0	1	1	0	0	0
Gilliamella apicola AW11	1	0	0	1	1	0	0	0	1	1	0	1	0	0	0	0	0	1	1	0	0	0	0	5	2	2	1	1	0	1	1	0	0	1	0	0	1	1	1	0	0	0	1	0	0	1	1	0	0	0	0	0	1	1	0	0	0
Gilliamella apicola AW13	1	0	0	1	1	0	0	0	1	1	1	1	0	0	0	0	0	1	1	0	0	0	0	4	1	1	1	1	0	1	1	0	0	1	0	0	1	1	1	0	0	0	1	0	0	1	1	0	0	0	0	0	1	1	0	0	0
Bartonella apis BBC0122	0	2	2	0	0	1	0	0	0	1	0	1	1	1	1	1	0	1	0	0	1	1	1	0	1	1	1	1	0	1	1	1	1	0	1	1	0	2	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	0
Bartonella apis BBC0178	0	2	2	0	0	1	0	0	0	1	0	2	1	2	1	1	0	1	0	0	1	2	1	0	1	1	1	1	0	1	1	1	0	0	1	1	0	2	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	0
Bartonella apis BBC0244	0	2	2	0	0	1	0	0	0	1	0	2	1	3	1	1	0	1	0	0	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	1	0	2	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	0
Bartonella apis PEB0122	0	2	2	0	0	1	0	0	0	1	0	2	1	2	1	1	0	1	0	0	1	1	1	0	1	1	1	1	0	1	1	1	1	0	1	1	0	2	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	0
Bartonella apis PEB0149	0	2	2	0	0	1	0	0	0	1	0	2	1	2	1	1	0	1	0	0	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	1	0	2	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	0
Bartonella apis PEB0150	0	2	2	0	0	1	0	0	0	1	0	2	1	2	1	1	0	1	0	0	1	1	1	0	1	1	1	1	0	1	1	1	1	0	1	1	0	2	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	0
Bartonella apis W7133	0	2	2	0	0	1	0	0	0	1	0	2	1	2	1	1	0	1	0	0	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	1	0	2	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	0
Lactobacillus kullabergensis Biut2	1	0	0	0	3	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	4	2	1	1	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
Lactobacillus helsingborgensis Bma5	1	0	0	0	3	0	1	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	3	2	1	1	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
Bifidobacterium coryneforme Bma6	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	1	1	2	0	1	1	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0
Bifidobacterium asteroides DSM 20089	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	1	1	2	0	1	1	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0
Bifidobacterium coryneforme DSM 20216	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	1	1	2	0	1	1	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0
Gilliamella apis ESL0169	1	0	0	1	1	0	0	0	1	1	1	0	0	0	0	0	0	1	1	1	0	0	0	3	1	1	1	1	0	1	1	0	0	1	0	0	1	1	1	0	0	0	1	0	0	1	1	0	0	0	0	0	1	1	0	0	0
Bifidobacterium asteroides ESL0170	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	2	1	2	0	1	1	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0
Gilliamella apis ESL0172	0	0	0	1	1	0	0	0	1	1	1	0	0	0	0	0	0	1	1	0	0	0	0	4	1	1	1	1	0	1	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0	1	1	0	0	0	0	0	1	1	0	0	0
Gilliamella apicola ESL0177	1	0	0	1	1	0	0	0	1	1	1	0	0	0	0	0	0	1	1	0	0	0	0	7	1	2	1	1	0	1	1	0	0	1	0	0	1	1	1	0	0	0	1	0	0	1	1	0	0	0	0	0	1	1	0	0	0
Gilliamella apicola ESL0178	1	0	0	1	1	0	0	0	1	1	1	0	0	0	0	0	0	1	1	0	0	0	0	6	1	1	1	1	0	1	1	0	0	1	0	0	1	1	1	0	0	0	1	0	0	1	1	0	0	0	0	0	1	1	0	0	0
Gilliamella apicola ESL0182	1	0	0	1	1	0	0	0	1	1	1	0	0	0	0	0	0	1	1	0	0	0	0	9	1	2	1	1	0	1	1	0	0	1	0	0	1	1	1	0	0	0	1	0	0	1	1	0	0	0	0	0	1	1	0	0	0
Lactobacillus melliventris ESL0184	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3	2	1	1	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
Snodgrassella alvi ESL0196	1	1	0	1	0	0	1	1	0	1	0	0	1	0	0	0	0	1	0	1	0	0	0	1	1	1	1	0	1	1	0	0	0	0	0	0	1	2	1	1	0	1	1	1	1	0	0	1	1	1	1	1	1	0	1	1	1
Bifidobacterium indicum ESL0197	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	1	1	2	0	1	1	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0
Bifidobacterium asteroides ESL0198	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	1	2	0	1	1	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0
Bifidobacterium asteroides ESL0199	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	1	2	0	1	1	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0
Bifidobacterium asteroides ESL0200	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	1	1	2	0	1	1	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0
Lactobacillus sp. ESL0260	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	4	2	1	1	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
Lactobacillus sp. ESL0261	1	0	0	0	3	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	2	1	1	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
Lactobacillus sp. ESL0262	1	0	0	0	3	0	1	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2	2	1	1	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
Lactobacillus sp. ESL0263	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2	1	1	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
Lactobacillus apinorum Fhon13	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	1	1	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
Lactobacillus kimbladii Hma2	1	0	0	0	3	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	5	2	1	1	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
Bifidobacterium asteroides Hma3	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	1	2	0	1	1	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0
Lactobacillus melliventris Hma8	1	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	4	2	1	1	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
Bifidobacterium indicum LMG 11587 / DSM 20214	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	1	1	2	0	1	1	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0
Gilliamella apicola M1-2G	1	0	0	2	1	0	0	0	1	1	1	0	0	0	0	0	0	1	1	1	0	0	0	3	1	1	1	1	0	1	1	0	0	1	0	0	1	1	1	0	0	0	1	0	0	1	1	0	0	0	0	0	1	1	0	0	0
Gilliamella apicola M6-3G	0	0	0	1	1	0	0	0	1	1	1	0	0	0	0	0	0	1	1	0	0	0	0	5	1	1	1	1	0	1	1	0	0	1	0	0	1	1	1	0	0	0	1	0	0	1	1	0	0	0	0	0	1	1	0	0	0
Gilliamella apicola N-12-12	1	0	0	1	1	0	0	0	1	1	1	1	0	0	0	0	0	1	1	0	0	0	0	5	1	1	1	1	0	1	1	0	0	1	0	0	1	1	1	0	0	0	1	0	0	1	1	0	0	0	0	0	1	1	0	0	0
Gilliamella apicola N-15-12	1	0	0	1	1	0	0	0	1	1	1	1	0	0	0	0	0	1	1	0	0	0	0	5	1	1	1	1	0	1	1	0	0	1	0	0	1	1	1	0	0	0	1	0	0	1