
Bacterial Physiology and Metabolism

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Table 6.8. Growth yield of fermentative microorganisms

Microorganism	Substrate	$Y_{\text{substrate}}$	ATP/mol substrate	Y_{ATP}
<i>Streptococcus faecalis</i>	glucose	21.8	2.0	10.9
	gluconate	18.7	1.8	10.4
	2-ketogluconate	19.5	2.3	8.5
	ribose	21.0	1.67	12.6
	arginine	10.2	1.0	10.2
	pyruvate	10.4	1.0	10.4
<i>Streptococcus agalactiae</i>	glucose	20.8	2.25	9.3
	pyruvate	7.5	0.72	10.4
<i>Streptococcus pyogenes</i>	glucose	25.5	2.6	9.8
<i>Streptococcus lactis</i>	glucose	19.5	2.0	9.8
<i>Lactobacillus plantarum</i>	glucose	20.4	2.0	10.2
	galactose	32.5	2.97	10.9
<i>Lactobacillus casei</i>	glucose	42.9	2.05	20.9
	mannitol	40.5	2.22	18.2
	citrate	18.2	0.96	19.0
<i>Bifidobacterium bifidum</i>	glucose	37.4	2.85	13.1
	lactose	52.8	5.08	10.4
	galactose	27.8	2.80	9.9
	mannitol	27.8	2.35	11.8
<i>Saccharomyces cerevisiae</i>	glucose	20.4	2.0	10.2
<i>Saccharomyces rosea</i>	glucose	23.2	2.0	11.6
<i>Zymomonas mobilis</i>	glucose	8.5	1.0	8.5
<i>Zymomonas anaerobia</i>	glucose	5.9	1.0	5.9
<i>Sarcina ventriculi</i>	glucose	30.5	2.62	11.7
<i>Aerobacter aerogenes</i>	glucose	30.6	3.0	10.2
	fructose	35.1	3.0	11.7
	mannitol	27.0	2.5	10.8
	gluconate	27.5	2.5	11.0
<i>Aerobacter cloacae</i>	glucose	27.1	2.27	11.9
<i>Escherichia coli</i>	glucose	33.6	3.0	11.2
<i>Ruminococcus flavefaciens</i>	glucose	29.1	2.75	10.6
<i>Actinomyces israeli</i>	glucose	24.7	2.0	12.3
<i>Clostridium tetanomorphum</i>	glutamate	6.8	0.62	10.9
<i>Clostridium aminobutyricum</i>	4-aminobutyrate	7.6	0.5	15.2
	4-hydroxybutyrate	8.9	0.5	17.8
<i>Clostridium glycolicum</i>	ethyleneglycol	7.7	0.5	15.4
<i>Clostridium kluyveri</i>	crotonate	4.8	0.5	9.6
	ethanol + acetate	—	—	9.2
<i>Clostridium pasteurianum</i>	sucrose	73.1	6.64	11.0
<i>Clostridium thermoaceticum</i>	glucose	50.0	3.0	16.6