

TABLE 16.3 Reactions of glycolysis

Step	Reaction	ΔG° in kcal mol ⁻¹ (kJ mol ⁻¹)	ΔG in kcal mol ⁻¹ (kJ mol ⁻¹)
1	Glucose + ATP \longrightarrow glucose 6-phosphate + ADP + H ⁺	-4.0 (-16.7)	-8.0 (-33.5)
2	Glucose 6-phosphate \rightleftharpoons fructose 6-phosphate	+0.4 (+1.7)	-0.6 (-2.5)
3	Fructose 6-phosphate + ATP \longrightarrow fructose 1,6-bisphosphate + ADP + H ⁺	-3.4 (-14.2)	-5.3 (-22.2)
4	Fructose 1,6-bisphosphate \rightleftharpoons dihydroxyacetone phosphate + glyceraldehyde 3-phosphate	+5.7 (+23.8)	-0.3 (-1.3)
5	Dihydroxyacetone phosphate \rightleftharpoons glyceraldehyde 3-phosphate	+1.8 (+7.5)	+0.6 (+2.5)
6	Glyceraldehyde 3-phosphate + P _i + NAD ⁺ \rightleftharpoons 1,3-bisphosphoglycerate + NADH + H ⁺	+1.5 (+6.3)	-0.4 (-1.7)
7	1,3-Bisphosphoglycerate + ADP \rightleftharpoons 3-phosphoglycerate + ATP	-4.5 (-18.8)	+0.3 (+1.3)
8	3-Phosphoglycerate \rightleftharpoons 2-phosphoglycerate	+1.1 (+4.6)	+0.2 (+0.8)
9	2-Phosphoglycerate \rightleftharpoons phosphoenolpyruvate + H ₂ O	+0.4 (+1.7)	-0.8 (-3.3)
10	Phosphoenolpyruvate + ADP + H ⁺ \longrightarrow pyruvate + ATP	-7.5 (-31.4)	-4.0 (-16.7)