Table III. Dissociation equilibrium constants and enthalpies of dissociation for the metabolites of lactic acid metabolic pathway (at zero ionic strength and 298.15 K).

Reaction	pK_a	$\Delta_r H^0$ (kJ/mol)
(1) $HG6P^- \Leftrightarrow H^+ + G6P^{2-}$	6.42 (Alberty, 2003b)	−1.8 (Tewari et al., 1988)
(2) $HF6P^- \Leftrightarrow H^+ + F6P^{2-}$	6.27 (Alberty, 2003b)	−1.8 (Tewari et al., 1988)
(3) $H_2FBP^{2-} \Leftrightarrow H^+ + HFBP^{3-}$	6.05 (Alberty, 2003b)	−1.8
(4) $HFBP^{3-} \Leftrightarrow H^+ + FBP^{4-}$	6.65 (Alberty, 2003b)	−1.8
(5) $HDHAP^- \Leftrightarrow H^+ + DHAP^{2-}$	6.32 (Smith et al., 2004)	−1.8
(6) $HGAP^- \Leftrightarrow H^+ + GAP^{2-}$	6.66[a]	3.1[a]
(7) $H_2BPG^{2-} \Leftrightarrow H^+ + HBPG^{3-}$	6.45 (MarvinSketch, 2007)	−1.8
(8) $HBPG^{3-} \Leftrightarrow H^+ + BPG^{4-}$	7.60 (MarvinSketch, 2007)	−1.8
(9) $H_2^{\cdot}3PG^- \Leftrightarrow H^+ + H^{\cdot}3PG^{2-}$	4.14 (Smith et al., 2004)	0.41
(10) $H^{\cdot}3PG^{2-} \Leftrightarrow H^+ + + 3PG^{3-}$	6.68 (Larssonr, 1972)	−1.8
(11) $H_2^{\cdot}2PG^- \Leftrightarrow H^+ + H^{\cdot}2PG^{2-}$	4.19	0.41
(12) $H2PG^{2-} \Leftrightarrow H^+ + 2PG^{3-}$	7.43 (Smith et al., 2004)	−1.8
(13) $H_2PEP^- \Leftrightarrow H^+ + HPEP^{2-}$	3.45 (Smith et al., 2004)	0.41
(14) $HPEP^{2-} \Leftrightarrow H^+ + PEP^{3-}$	6.68 (Smith et al., 2004)	−1.8
(15) $HPyr \Leftrightarrow H^+ + Pyr^-$	2.48 (Smith et al., 2004)	0.33
(16) $HLac \Leftrightarrow H^+ + Lac^-$	3.86 (Smith et al., 2004)	0.33 (Smith et al., 2004)
(17) $H_2ATP^{2-} \Leftrightarrow H^+ + HATP^{3-}$	4.68 (Alberty, 2003b)	15 (Alberty, 2003a)
(18) $HATP^{3-} \Leftrightarrow H^+ + ATP^{4-}$	7.60 (Alberty, 2003b)	−6.3 (Alberty, 2003a)
(19) $H_2ADP^- \Leftrightarrow H^+ + HADP^{2-}$	4.36 (Alberty, 2003b)	17.6 (Alberty, 2003a)
(20) $HADP^{2-} \Leftrightarrow H^+ + ADP^{3-}$	7.18 (Alberty, 2003b)	−5.6 (Alberty, 2003a)
(21) $H_2(NAD^+) \Leftrightarrow H^+ + H(NAD^+)^-$	2.56 (MarvinSketch, 2007)	−7.95 (LaRowe and Helgeson, 2006)
(22) $H(NAD^+)^- \Leftrightarrow H^+ + (NAD^+)^{2-}$	3.92 (MarvinSketch, 2007)	−2.09 (LaRowe and Helgeson, 2006)
(23) $H_3NADH^+ \Leftrightarrow H^+ + H_2NADH$	2.53 (MarvinSketch, 2007)	−2.09 (LaRowe and Helgeson, 2006)
(24) $H_2NADH \Leftrightarrow H^+ + HNADH^-$	4.11 (MarvinSketch, 2007)	−2.09 (LaRowe and Helgeson, 2006)
(25) $HNADH^- \Leftrightarrow H^+ + NADH^{2-}$	3.46 (MarvinSketch, 2007)	−7.95 (LaRowe and Helgeson, 2006)
(26) $H_2PO_4^- \Leftrightarrow H^+ + HPO_4^{2-}$	7.22 (Alberty, 2003b)	3.6 (Alberty, 2003a)

The values for which no reference is given are estimated.
[a]Value for glycerol-1-phosphate, 25°C (Liang et al., 1992).