

Table 3.2 Some mid-point potentials and examples of actual redox potentials

Oxidized + $ne^- + mH^+$ = reduced						
	$n$	$m$	$E_{m,7}$ (mV)	$\Delta E_m$ per pH	Typical ox/red ratio	$E_{h,7}$ (mV)*
Ferredoxin oxidized/reduced	1	0	-430	0		
$H^+/\frac{1}{2}H_2$ (at 1 atm)	1	1	-420	-60		
$O_2$ (1 atm <sup>†</sup> )/(superoxide)	1	0	-330	0	$10^{-5}$	-30
$NAD^+/NADH$	2	1	-320	-30	10	-290
$NADP^+/NADPH$	2	1	-320	-30	0.01	-380
Menaquinone/menaquinol	2	2	-74	-60		
Glutathione oxidized/reduced (when GSH + GSSG = 10 mM)	2	2	-172	-60	0.01	-240 <sup>‡</sup>
Fumarate/succinate	2	2	+30	-60		
Ubiquinone/ubiquinol	2	2	+60	-60		
Ascorbate oxidized/reduced	2	1	+60	-30		
Cyt <i>c</i> oxidized/reduced	1	0	+220	0		
Ferricyanide oxidized/reduced	1	0	+420	0		
$O_2$ (1 atm <sup>†</sup> )/ $2H_2O$ (55 M)	4	4	+820	-60		

\* Approximate values for mitochondrial matrix under typical conditions.

† 1 atm oxygen = 1.25 mM.

‡ See equation 3.22.

# Bioenergetics

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