Standard Reduction Potentials of Some Biochemically Important Half-Reactions

Half-Reaction	*E°'(V)*
$\frac{1}{2}O_2 + 2\,H^+ + 2\,e^- \rightleftharpoons H_2O$	0.815
$SO_4^{2-} + 2\,H^+ + 2\,e^- \rightleftharpoons SO_3^{2-} + H_2O$	0.48
$NO_3^- + 2\,H^+ + 2\,e^- \rightleftharpoons NO_2^- + H_2O$	0.42
Cytochrome a_3 (Fe^{3+}) + $e^- \rightleftharpoons$ cytochrome a_3 (Fe^{2+})	0.385
$O_2(g) + 2\,H^+ + 2\,e^- \rightleftharpoons H_2O_2$	0.295
Cytochrome *a* (Fe^{3+}) + $e^- \rightleftharpoons$ cytochrome *a* (Fe^{2+})	0.29
Cytochrome *c* (Fe^{3+}) + $e^- \rightleftharpoons$ cytochrome *c* (Fe^{2+})	0.235
Cytochrome c_1 (Fe^{3+}) + $e^- \rightleftharpoons$ cytochrome c_1 (Fe^{2+})	0.22
Cytochrome *b* (Fe^{3+}) + $e^- \rightleftharpoons$ cytochrome *b* (Fe^{2+}) (mitochondrial)	0.077
Ubiquinone + $2\,H^+ + 2\,e^- \rightleftharpoons$ ubiquinol	0.045
Fumarate$^-$ + $2\,H^+ + 2\,e^- \rightleftharpoons$ succinate$^-$	0.031
FAD + $2\,H^+ + 2\,e^- \rightleftharpoons$ $FADH_2$ (*in flavoproteins)*	~0
Oxaloacetate$^-$ + $2\,H^+ + 2\,e^- \rightleftharpoons$ malate$^-$	-0.166
Peruvate$^-$ + $2\,H^+ + 2\,e^- \rightleftharpoons$ lactate$^-$	-0.185
Acetaldehyde + $2\,H^+ + 2\,e^- \rightleftharpoons$ ethanol	-0.197
FAD + $2\,H^+ + 2\,e^- \rightleftharpoons$ $FADH_2$ (*free coenzyme)*	-0.219
$S + 2\,H^+ + 2\,e^- \rightleftharpoons H_2S$	-0.23
Lipoic acid + $2\,H^+ + 2\,e^- \rightleftharpoons$ dihydrolipoic acid	-0.29
$NAD^+ + H^+ + 2\,e^- \rightleftharpoons$ NADH	-0.315
$NADP^+ + H^+ + 2\,e^- \rightleftharpoons$ NADPH	-0.320
Cystine + $2\,H^+ + 2\,e^- \rightleftharpoons$ 2 cysteine	-0.340
Acetoacetate$^-$ + $2\,H^+ + 2\,e^- \rightleftharpoons$ β-hydroxybutyrate$^-$	-0.346
$H^+ + e^- \rightleftharpoons \frac{1}{2}H_2$	-0.421
Acetate$^-$ + $3\,H^+ + 2\,e^- \rightleftharpoons$ acetaldehyde + H_2O	-0.581

Source: Mostly from Loach, P.A., *In* Fasman, G.D. (Ed.), *Handbook of Biochemistry and Molecular Biology* (3rd ed.), Physical and Chemical Data, Vol. 1, pp. 123-130, CRC Press (1976).

This is Table 13-3 from Voet, Voet and Pratt *Fundamentals of Biochemistry* 2002, or 13-7 in Nelson and Cox, *Principles of Biochemistry* 2008