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Haber–Weiss reaction

The Haber–Weiss cycle consists of the following two reactions:

$H_2O_2 + OH^{\cdot} \longrightarrow H_2O + O_2^{-} + H^{+}$ and

$H_2O_2 + O_2^{-} \longrightarrow O_2 + OH^{-} + OH^{\cdot}$

The second reaction achieved notoriety as a possible source of hydroxyl radicals. However, it has a negligible rate constant. It is believed that iron(III) complexes can catalyse this reaction: first, Fe(III) is reduced by superoxide, followed by oxidation by dihydrogen peroxide.

See also: Fenton reaction

Source:

PAC, 1997, *69*, 1251 *(Glossary of terms used in bioinorganic chemistry (IUPAC Recommendations 1997))* on page 1277

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