

Table 3 Oxidant range of reactivity: A range of 11 orders of magnitude for the second-order rate constants in the reaction of various oxidants with methionine (at neutral pH, in water)

Oxidant	Rate constant L mol ⁻¹ s ⁻¹
Hydroxyl radical (HO•)	7×10^9
Hypochlorous acid (HOCl)	4×10^7
Singlet molecular oxygen	2×10^7
CCl ₃ OO• (in H ₂ O/isopropanol)	3×10^7
Ozone (O ₃)	5×10^6
Peroxynitrous acid (ONOOH)	2×10^3
Various chloramines	$4 \times 10^1 - 2 \times 10^2$
Superoxide anion (O ₂ ^{-•})	<0.3
Peroxyl (HOO•)	< 5×10^1
Peroxynitrite (ONOO ⁻)	2×10^{-1}
Hydrogen peroxide (H ₂ O ₂)	2×10^{-2}

Data compiled from Reference 63.

63. Davies MJ. 2016. Protein oxidation and peroxidation. *Biochem. J.* 473:805–25